

# Irish Chemical News

A Journal of the Institute of Chemistry of Ireland

**Prof. Sylvia M. Draper TCD, Appointed to to New Personal Chair of Molecular Materials gave her Inaugural Lecture on the 27<sup>th</sup> April titled The magic of Making Molecules**



Vice-provost Orla Shiels, Provost Linda Doyle, Prof Sylvia Draper & Head of School of Chemistry, Prof Michael Lyons



# Institiúid Ceimice na hÉireann The Institute of Chemistry of Ireland

**ICI Centenary 1922-2022**

*Patron: Michael D. Higgins, President of Ireland*

**The Professional Body Representing Chemists in Ireland**

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## A Message from the President

Dear Fellows, Members, Graduates and Associates,

In this issue, you will find a focus on two special topics – the first on “PERITIA”, a conference organised by Professor Maria Baghramanian of UCD, and the second on the revolution of AI with the introduction of ChatGPT. In addition, you will see details of two ICI Award winners, Professor Thorri Gunnlaugsson of TCD (David Brown Award) and Kris O’Dowd of Atlantic Technological University Sligo (Postgraduate Award) and details of the Inaugural Lecture of the Chair of Molecular Materials given by Professor Sylvia Draper of TCD.

We are all looking forward to the 74<sup>th</sup> Irish Universities Colloquium to be held in the University of Galway on June 14<sup>th</sup> and 15<sup>th</sup>. There is an excellent programme of talks from final year PhD students across the island and plenary lecture from Dr Miguel Manzano García, Universidad Complutense de Madrid. Well done to Dr Pau Farràs Costa as the local organiser.

Our ICI AGM is planned for Thursday June 29<sup>th</sup>, in UCD, which will be preceded by lectures by the recipients of the Boyle-Higgins Medal and Eva Philbin Award Lecture, in addition to one by Kris O’Dowd of Atlantic Technological University Sligo (Postgraduate Award). Members will be informed of the programme in due course.

Work in continuing apace on the 9<sup>th</sup> EuroChemS Congress to be held in Dublin on 7-11<sup>th</sup> July 2024 and we now have a complete list of plenary speakers and a finalised International Scientific Committee, chaired by Professor David Leigh from the University of Manchester, and the Local Organising Committee, co-chaired by Professor Thorri Gunnlaugsson and Professor Celine Marmion. We have selected Plenary lecturers for each of the ECC9 Congress Themes and they are: Professor Dame Clare Grey (Energy, Environment and Sustainability); Professor Odile Eisenstein (Physical, Analytical and Computational Chemistry); Professor Veronique Gouverneur (Advances in Synthetic Organic Chemistry); Professor Frances Arnold\* (Chemistry Meets Biology); Professor Sir Dave MacMillan\* (Catalysis); Professor Sir Fraser Stoddart\* (Supramolecular Chemistry); Professor Omar Yaghi (Nanochemistry/Materials); and Professor Brigitte Van Tiggelen (Chemistry (Education, History, Cultural Heritage, Ethics). \* Denotes Nobel Prize Winner in Chemistry. A super list of plenary speakers, I hope you agree.

The International Scientific Committee comprises Professor David Leigh (UK and Chair), Professor Artur

Silva (ECC8 Congress Chair, Portugal), Dr Maximilian Menche (EuChemS Young Chemists' Network Chair, Germany), and one member representing each of the ECC9 Congress Themes and they are: Professor Walter Leitner (Energy, Environment and Sustainability); Professor Chris Brett (Portugal, Physical, Analytical and Computational Chemistry); Professor Bill Morandi (Switzerland, Advances in Synthetic Organic Chemistry); Professor Angela Cassini (Germany, Chemistry Meets Biology); Professor Martin Albrecht (Switzerland, Catalysis); Professor Stephen Goldup (UK, Supramolecular Chemistry); Professor Stefanie Dehnen (Germany, Nanochemistry/Materials); Professor Annette Lykknes (Norway, Chemistry (Education, History, Cultural Heritage, Ethics), Professor Thorri Gunnlaugsson and Professor Celine Marmion and myself as ECC9 Congress Chair.

Many thanks to the ICI Young Chemists' Network (YCN) who continue to work hard to provide support to the younger members of our community. Colm McKeever, Maynooth University, is the ICI YCN chair and do get in contact with him if there are issues you wish to highlight or events you wish to organise.

I wish to again thank our Editor, Patrick Hobbs, who continues to enlighten our community on national and international topics that are of most interest to our community. This is a significant undertaking and is much appreciated. I do hope you enjoy reading it.

Congratulations to Professor Mike Lyons, ICI Council member, on being elected as a Member of the Royal Irish Academy on March 16<sup>th</sup> – this is the highest academic honour in Ireland and is well deserved recognition for Mike.

My thanks also to all Council members who voluntarily give of their time and expertise to support our Institute and community. A special thanks to you, our ICI Fellows, members, graduates and associates. Please do keep in touch and send us your updates. We would be delighted to showcase these on our ICI website and in future ICN issues.

With best regards,

Professor Pat Guiry PhD FRSC FICI PRIA

President, Institute of Chemistry of Ireland

5<sup>th</sup> June 2023



## Editorial

This Issue was intended for publication first week in May, but Covid finally caught up with the Editor delaying final editing. The usual topics are covered but some items such as SFI, IDA, Enterprise Ireland, EuChems, Irish Research Council and Siliconrepublic reports are shrunk and presented as links to the full articles to save space. This is due to the inclusion of two Special Topics as occasional contributions.

The first one is titled Science and Truth which includes a long report on the Horizon 2020 study called “PERITIA” – Policy, Expertise, Trust, Trustworthiness. When using words like “truth” and “trust” we are entering the domain of philosophy and some terms may not be so familiar to chemists as these often have specific meanings in philosophy, so some explanations are included in the article. This project will terminate in May 2023 and UCD Philosophy Department played a key role. The final academic conference was coordinated by Professor Maria Baghramian at UCD which it under her leadership on 23–25 March 2023 at University College Dublin, which your Editor attended. The final wind up of the Peritia project will take place in Brussels in May after which a final report/s will be published, and these will be made available in ICN.

The second Special Topic covers the explosive revolution of ChatGPT 3 and quickly upgraded to Chat GPT 4 launched by Open AI in February which is being compared to the invention of fire, the industrial revolution and the theory of relative in its potential impact on humanity. There are so many articles and publications coming in on this topic it is hard to keep up with the flow. Microsoft and Google were taken by surprise and rushed frantically to catch up with their own versions. Others have also brought out versions and at least one has a version aimed at scientific research. This technology is based on large language models and natural language processing, so these terms are explained in the article. Used sensibly this technology can be of great assistance such as in drug discovery, but in the wrong hands can do great harm. Research and education will certainly be impacted.

Finally in the last Issue 1 of 2023 the topic “Rechargeable Batteries and Fuel Cells” was not transcribed into the final document. I have included it in this Issue and indicated the relevant periods for that item and for that topic in the current Issue 2.

Two Institute Award winners, The David Brown Award for Inorganic Chemistry and the Post Graduate Award for Chemistry are covered in this. Prof Sylvia Draper TCD appointment to a new Personal Chair of Molecular Chemistry and her Inaugural Lecture is also featured. Two more awards will close in May and winners will be announced in due course.

**Editorial Notes:** In endeavouring to publish links to open access articles that readers can click on and read, American Chemical Society (ACS) articles general are not open access and readers have to buy, pay a subscription or access through a university or subscribed institution. As these ACS publications are very important, not including them would be a loss so a limited number of links are included. Probably most readers interested in these topics will have institutional access. Readers can read the abstract and supplementary material. The DOIs are provided. Some Nature articles come under this as well but generally Nature is very generous with open access.

Comments, Feedback and Responses are welcome and can be sent to the **Editor Email address:** -

**[editor@instituteofchemistry.org](mailto:editor@instituteofchemistry.org)**

[Institute of Chemistry of Ireland \(chemistryireland.org\)](http://chemistryireland.org)

**Patrick Hobbs MSc, FICI, CChem, CSci, MRSC.  
Editor  
Irish Chemical News**

24<sup>th</sup> April 2023

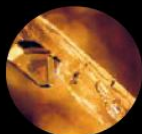
**Note: Opinions expressed in this Journal are those of the authors and not necessarily those of the Institute.**





# 9th EuChemS

CHEMISTRY CONGRESS  
Dublin, Ireland 7–11 July 2024



## Save the Date!

For regular e-updates  
about the 9th EuChemS  
2024 please sign-up at  
[www.EUCHEMS2024.org](http://www.EUCHEMS2024.org)



 **EuChemS**  
European Chemical Society





## 9th EuChemS

CHEMISTRY CONGRESS

Dublin, Ireland 7-11 July 2024

**The EuChemS Chemistry Congresses (ECCs) are the most prominent events for the European chemistry community. They constitute a joint endeavour of the national chemical societies and the EuChemS Professional Networks.**

Chemists from all parts of Europe and the wider world come together to present and discuss the latest achievements in cutting edge chemical sciences. There is no other occasion where chemists from different countries, different areas of chemistry and different professional backgrounds can converge in one place.

The ECCs are a unique forum to foster transnational collaboration, to encourage the dialogue between the different branches of chemistry, to bring academia, industry and decision-makers together and to emphasize the impact of chemistry and chemical research on our society. Special attention is given to all activities which help promote the careers of young scientists. A high level Scientific Committee ensures the highest possible quality of the scientific contributions with a regionally and thematically balanced programme of exciting cutting edge chemistry.

*We look forward to seeing you in Dublin for the 9th ECC!*

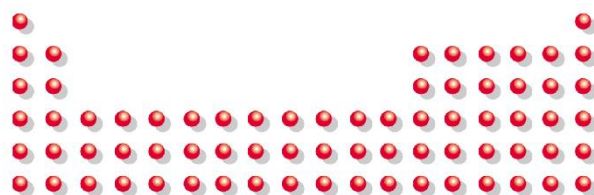
**Conference Secretariat:** Keynote PCO

**Tel:** +353 1 400 3626

**Email:** [info@euchems2024.org](mailto:info@euchems2024.org)



We wish to thank the following sponsors/exhibitors.



**CSCCB**

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## Royal Irish Academy

### PCMS submission to consultation on state supports for PhDs

25 April 2023

The Physical, Chemical and Mathematical Sciences submitted a response to the Department of Further and Higher Education, Research, Innovation and Science consultation on State supports for PhD researchers in March 2023.

The Physical, Chemical and Mathematical Sciences submitted a response to the Department of Further and Higher Education, Research, Innovation and Science consultation on State supports for PhD researchers in March 2023.

The committee's full response is in the [PDF document attached](#). These are the main points made:

#### Challenges faced

1. Cost of living crisis. The current standard (SFI and IRC) PhD Stipend is well below the minimum living wage.
2. Housing crisis. Postgraduate researchers struggle to find and afford housing near their institution.
3. Working conditions. PhD researchers have no mechanism for sick leave, pensions, maternity leave or other essential worker protections.
4. Limited funding options for PhDs in areas without immediate applications.
5. Additional challenges for international PhD researchers such as visa fees, relocation costs which are not covered by research grants.

#### Proposed solutions

1. Increase stipends to much the minimum living wage.
2. Incentivise universities to build postgraduate housing. In the short term, consider reallocating some of the existing undergraduate housing to PhD students.
3. Make PhD researchers entitled to worker rights.
4. Expand the number of grants in areas that have been under-represented in the last decade, including basic research, to attract and retain talented individuals.
5. Make provisions in research grants to cover costs that apply specifically to researchers coming from abroad.

The opinions expressed in this consultation response represent the opinions of the PCMS committee and are not necessarily the opinions of the Royal Irish Academy.

**SCIENCE COMMITTEESPHYSICAL, CHEMICAL AND MATHEMATICAL SCIENCES  
COMMITTEE**

# Watch the Hamilton Lecture 2022

10 March 2023

If you missed the 2022 annual Royal Irish Academy Hamilton Lecture given by Professor Avi Wigderson, Institute for Advanced Study, Princeton you can watch it now. Professor Wigderson spoke about 'Cryptography: secrets and lies, knowledge and trust.'



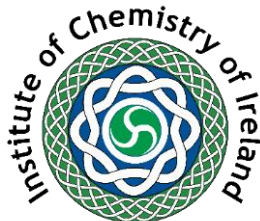
Video link here: <https://youtu.be/VkroiOiQxb0>

Professor Avi Wigderson is the Herbert H. Maass Professor of Mathematics at the Institute for Advanced Studies, Princeton University. His research interests include complexity theory, parallel algorithms, graph theory, cryptography, distributed computing, and neural networks. He has received numerous prizes including the Knuth Prize 2019, Gödel Prize in 2009, Nevanlinna Prize in 1994 and in 2021, Wigderson shared the Abel Prize with László Lovász “for their foundational contributions to theoretical computer science and discrete mathematics, and their leading role in shaping them into central fields of modern mathematics”.

The lecture was chaired by Maire O'Neill MRIA, Queen's University Belfast.

[SCIENCE COMMITTEES PHYSICAL, CHEMICAL AND MATHEMATICAL SCIENCES COMMITTEE HAMILTON DAY](#)





The Institute of Chemistry of Ireland

is delighted to announce the call for nominations for the following prestigious ICI award:

**The ICI Boyle Higgins Gold Medal and Lecture Award 2023**

**Deadline for receipt of nominations: Friday, 2<sup>nd</sup> June, 2023**

**The Boyle Higgins Gold Medal and Lecture Award 2023**

The Boyle Higgins Gold Medal and Lecture Award, instituted in 1985, is an award for research work carried out in chemistry under the headings: (a) Pure Chemistry, (b) Applied and Industrial Chemistry or (c) Chemical Education. The award recognizes a chemist **of any nationality working in Ireland or a chemist who is an Irish citizen working overseas** who has made **an outstanding and internationally recognized research contribution to the advancement of chemistry**. A person nominated for this award must be a member of the Institute at the time of nomination or upon receipt of the award.

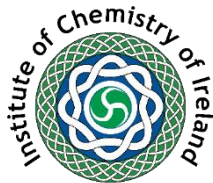
*Nomination process: The nominator shall indicate in writing to the President of the Institute the category which applies to their nominee and they shall submit by email one electronic copy which will include a brief statement outlining the reasons for the nomination, together with a CV (maximum 3 pages) of the nominee. Nominations will be externally reviewed by at least two independent referees, who are recognized experts in the category and who are not nominators.*

Nominations to be addressed to the ICI President, Professor Pat Guiry and sent by email to: [p.guiry@ucd.ie](mailto:p.guiry@ucd.ie) and [secretary@instituteofchemistry.org](mailto:secretary@instituteofchemistry.org)

ICI website: <http://www.chemistryireland.org/>

**Recent Past Recipients**

- **2022** Professor Grace Morgan (Pure Chemistry)
- **2021** Professor Tadhg Begley (Pure Chemistry)
- **2020** Professor Amilra P. de Silva (Applied Chemistry)
- **2019** Professor Suresh Pillai (Applied Chemistry)
- **2018** Professor John Kelly (Applied Chemistry)
- **2017** Professor Henry Curran (Applied Chemistry)
- **2016** Professor Kieran Hodnett (Applied Chemistry)
- **2015** Professor Dermot Diamond (Applied Chemistry)
- **2014** Professor Pat Guiry (Pure Chemistry)
- **2013** Doctor Sheila Willis (Applied Chemistry)
- **2012** Professor Malcolm R. Smyth (Applied Chemistry)
- **2011** Professor Frank Hegarty (Pure Chemistry)
- **2009** Professor Seán Corish (Pure Chemistry)
- **2008** Professor Albert Pratt (Pure Chemistry)
- **2007** Professor Rory More O’Ferrall (Pure Chemistry)
- **2005** Professor Donald Fitzmaurice (Pure Chemistry)
- **2002** Doctor John F. O’Sullivan (Applied Chemistry)
- **2000** Professor Dervilla M.X. Donnelly (Pure Chemistry)



## The Institute of Chemistry of Ireland

*is delighted to announce the call for nominations for the following prestigious ICI award:*

### **The ICI Annual Award for Chemistry (Eva Philbin Public Lecture Series) 2023**

**Deadline for receipt of nominations: Friday, 2<sup>nd</sup> June, 2023**

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This award is for a practising chemist, who has made a significant contribution to the advancement of chemistry and has considerably raised the profile of chemistry through both the excellence of their work and their ability to communicate in an effective and lucid manner. **The recipient must be a Chemist of any nationality working in Ireland.** They will present lectures in three locations in Ireland (including Dublin), which will be open to the public. A person nominated for this award must be a member of the Institute at the time of nomination or upon receipt of the award.

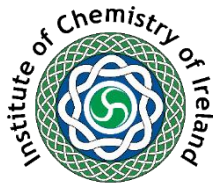
*Nomination process: The nominator shall send one electronic copy of their nomination by email to the President of the Institute, Professor Pat Guiry (p.guiry@ucd.ie), which will include a cover letter providing a brief statement outlining the reasons for the nomination, together with a CV (maximum 3 pages) of the nominee. Nominations for this award will be externally reviewed. Please note that self-nominations are also allowed.*

#### **Past Recipients**

- **2005** Professor David A. Leigh
- **2006** Professor A. Prasanna de Silva
- **2007** Dr Mary Archer
- **2008** Professor Peter Atkins
- **2009** Professor Martyn Poliakoff
- **2011** Dr Malachy McCann
- **2012** Professor Lesley Yellowlees
- **2013** Professor Herbert W. Roeskey
- **2014** Professor Thorfinnur Gunnlaugsson
- **2015** Professor Michael J. Zaworotko
- **2016** Professor John Sodeau
- **2017** Professor Donal O'Shea
- **2018** Professor Anita Maguire
- **2019** Professor Declan McCormack
- **2020** Professor Declan Gilheany
- **2021** Professor Paula Colavita
- **2022** Professor Carmel Breslin

ICI website: <http://www.chemistryireland.org/>

Nominations to be sent by email to the ICI President, Professor Pat Guiry at: [p.guiry@ucd.ie](mailto:p.guiry@ucd.ie) and [secretary@instituteofchemistry.org](mailto:secretary@instituteofchemistry.org)



## The Institute of Chemistry of Ireland

*is delighted to announce the call for nominations for the following prestigious ICI award:*

# The ICI Postgraduate Award for Chemistry 2023

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The nominee must be a **registered PhD student in any Chemistry discipline working in an Irish Higher Education Institution**. They must have demonstrated excellence in research through publications. They must also have demonstrated a commitment to supporting and promoting Chemistry within their Institution (e.g. through active participation in public engagement initiatives). A person nominated for this award must be a member of the Institute at the time of nomination or upon receipt of the award.

**The Winner of the 2023 Postgraduate Award for Chemistry is:  
Kris O'Dowd (Atlantic Technical University Sligo)**



His supervisor and nominator Prof Suresh C Pillai ATU states that Kris is an outstanding research student and has published over eight publications drawing more than 420 citations. He has published in various high impact journals such as *Journal of Environmental Chemical Engineering*, (impact factor 7.968); *Current Opinion in Green and Sustainable Chemistry*, (impact factor 8.843); *Materials Today Sustainability*, (impact factor 7.244). He also has presented his work at a number of international conferences. In addition to his research accomplishments, Kris has demonstrated significant commitment



to supporting and promoting Chemistry and research within ATU Sligo, and in the in the North-West region through active participation in public engagement initiatives.

### **Short CV Kris O'Dowd**

Kris obtained a B.Sc. (Hon) in Forensic investigation and analysis from I.T. Sligo, having previously completed a B.A. (Hon) in Geology at Trinity College Dublin. As part of his final year project, he investigated the use of Energy Dispersive X-Ray Fluorescence for the analysis of major, minor and trace elements in plastics and chemicals.

He was the winner of the Eurachem Analytical Measurement competition in 2017 representing I.T. Sligo as part of a two-person team.

### **Current PhD Student**

*The optimisation of the photo-Fenton Process for the removal of antimicrobial organisms from drinking water at neutral pH*

Kris O'Dowd joined I.T. Sligo as a postgraduate working on the optimisation of the Photo-Fenton process for the removal of antimicrobial-resistant organisms from water.

He is expected to finish in 2023 and in his fourth year of a PhD in Atlantic Technical University Sligo, having completed 3 years of research, based learning in the field of environmental and chemical sciences. He is part working as part of the PANIWATER consortium, a Horizon 2020 funded group that consists of 16 partners based in the EU and India. This research is focused on photo-irradiation and novel based innovations for water treatment. The project aims to develop and validate prototypes for the removal of contaminants from wastewater and drinking water in peri-urban and rural areas in India. The photo-Fenton process is an advanced oxidation process that uses hydrogen peroxide, iron and light to create a hydroxyl radical. This nonselective radical has been used extensively in the breakdown of organic chemicals and is now being investigated for its use in the elimination of microorganisms. The research will focus on optimizing a process that is traditionally used at an acidic pH, at a neutral pH to allow ease of use in rural communities.

### **ICI Postgraduate Awardees To Date:**

- 2022:** Dr Niamh O'Mahoney (UCC) (Supervisor: Dr Dara Fitzpatrick)
- 2021:** Dr Ioannis Mylonas Margaritis (NUIG) (Supervisor: Dr Constantina Papatriantafyllopoulou)
- 2020:** Dr Priyanka Ganguly (Sligo IT) (Supervisor: Professor Suresh Pillai)
- 2020:** Dr Conor Crawford (UCD) (Supervisor: Professor Stefan Oscarson)
- 2019:** Dr Saoirse Dervin (Sligo IT) (Supervisor: Professor Suresh Pillai)
- 2018:** Dr Adele Gabba (NUIG) (Supervisor: Professor Paul Murphy)

## The Institute of Chemistry of Ireland David Brown Award



This award was established in 2014 to honour Professor David Brown of University College Dublin in recognition of his enormous contribution to inorganic chemistry both nationally and internationally. Professor Brown, together with Professor Bill Davis (TCD), hosted the International Conference on Coordination Chemistry (ICCC) in UCD in 1974. With some funds remaining, Professor Brown set up what became known as the Greystones weekend meetings, which were held in the LaTouche Hotel in Greystones, co. Wicklow and later in a more formal setting, in Maynooth University, hosted by Dr Malachy McCann every three years until 2005. This was re-launched as a one-day Inorganic Ireland Symposium and has been held approximately every two years since then. A highlight of this symposium is the presentation of the Institute of Chemistry of Ireland (ICI) David Brown award to a **colleague who has made an outstanding contribution to inorganic chemistry**. Dr. Malachy McCann (then NUIM and now MU) received the inaugural ICI David Brown award in 2014. Professor Annie K. Powel (Karlsruhe Institut für Technologie, Germany) received the award in 2016. Professor Sylvia Draper (TCD) received the award in 2018 and Professor Nick Farrell, Virginia Commonwealth University, was the most recent recipient in 2021.

### Winner of the ICI David Brown Award for 2023 is: Prof Thorri Gunnlaugsson, TCD.

**Thorri delivered his award lecture during the Inorganic Ireland Symposium held in TCD, on May 19th 2023.**



Prof Thorri Gunnlaugsson being presented with his Award Plaque by Prof Celine Marmion, RCSI



Thorri with his TG Group, Supramolecular and Medicinal Chemistry Research Group after his award lecture

**PROFESSOR THORFINNUR (THORRI) GUNNLAUGSSON** MRSC, FTCD, MRIA; **DOB** 22.03.1967; **E-mail:** [gunnlaut@tcd.ie](mailto:gunnlaut@tcd.ie); **ADDRESS** School of Chemistry and Trinity Biomedical Sciences Institute, Trinity College, The University of Dublin, Dublin 2, Ireland. **Group Webpage:** <https://thorrigunnlaugsson.wordpress.com>

In his nomination letter Prof Donal OShea RCSI, described “Prof Gunnlaugsson as without doubt, one of the most influential and visionary scientists in the country and his contribution to inorganic chemistry over the past two decades has been nothing short of exemplary”.

## Short CV Prof Thorri Gunnlaugsson:

### CAREER AND EDUCATION

- 2008– Personal Chair; Professor of Chemistry (TCD).
- 2004-2008 Associate Professor in Organic Chemistry, School of Chemistry (TCD).
- 2000-2004 Lecturer in Organic Chemistry, Department of Chemistry (TCD).
- 1998-2000 Kinerton Lecturer in Medicinal Chemistry, Department of Chemistry ,Trinity College Dublin (TCD).
- 1996-1998 Postdoctoral Fellow Department of Chemistry, University of Durham (Prof. David Parker FRS).
- 1993-1996 PhD, Queen’s University of Belfast, Belfast, Northern Ireland (Supervisor: Prof. A. P. de Silva MRIA).

## DISSEMINATION and SYNERGISTIC ACTIVITIES (Selected)

- Author of **290 publications; H-Index of 84** (>33,000 total citations; Google Scholar. H-index 83 Scopus)
- 190 invited lectures/seminars since 2000.
- Graduated 51 PhD and 3 MSc. Current Research Group: 9 PhD Students and 5 Postdoctoral Fellows.
- Total research funding *ca.* 12;5 million Euro (excluding overheads and PRTLE, SSPC and AMBER funding).
- Covid-19 Coordinator (May 2020-May 2022)
- Director of Research, School of Chemistry and member of the Dean of Research Committee (2016-2022)
- Theme leader and member of Steering Committed for SSCP and Amber II applications SFI 2017 Centre Call
- Panel Member ERC Consolatory Grant Scheme 2024; 2022; 2020.
- Co-organiser of the 2023 ISMSC, Reykjavik, July 2023 Iceland.
- Editorial Board Member of *Smart Molecules* (Open access journal Wiley).
- Chairman and co-organiser of 8<sup>th</sup> MSMLG meeting in Dublin July 2022.
- Co-Chairperson of the Local Organising Committee and Member of the Scientific Organising Committee of the 9<sup>th</sup> EuChemS European Chemistry Congress to Dublin in 2024.
- Reviewer and Panel Member Romanian Research Council 2021
- Reviewer and Panel Member of the Severo Ochoa Centers (Spain) 2021 Programme
- External Panel Member for the EPSRC funded Molecular Robotics Programme Grant (Mid Term Review) September 16<sup>th</sup> 2020 (Full day)
- Founding Editor-in-Chief for *Results in Chemistry* (Elsevier Open Access Journal, established 2019).
- Member of the Royal Irish Academy Physics, Chemistry and Mathematics Committee (2016-2018)
- Member of the Finish Academy of Science (2016, 2017 and 2018) Review Panel for Organic, Inorganic and Material Chemistry (Meetings held in Helsinki).
- Guest Editor (with Professors Tony James (Bath, UK) and Chris Chang (Barkley, USA)); Special Theme Issues on Imaging and Sensing, *Chemical Society Reviews* (2015).
- Co-Chairman and organiser of CASE 2015 (July 9-10th 2015) TCD/RCSI (SFI funded ISCP-China).
- Chairman and main organiser of SFI funded ISCP-China Nanotechnology Symposium May 12-14, 2014, Trinity College Dublin.
- Chairman of the RSC Organising Committee for ISACS13 - Challenges in Inorganic and Materials Chemistry, 1-4 July 2014, Dublin.
- (Organic Executive Committee) Member of the RSC Organising Committee for ISACS 7, Supramolecular Chemistry, Kyoto, Japan June 2013.
- Organizer ChemChem-RSC Prizes and Awards Symposium: Supramolecular Chemistry, 24<sup>th</sup> May 2013.

## AWARDS AND HONORS (Selected)

- 2021 Molecular Sensors and Molecular Logic gates (MSMLG) Czarnik Award
- Fellow (by invitation) of The Institute of Chemistry of Ireland (FICI) 2020
- Editor in Chief of Results in Chemistry (Elsevier open access journal)
- The Institute of Chemistry of Ireland (ICI) Annual Award for Chemistry 2014
- Visiting Professor April 2013, University of Cagliari, Sardinia, Italy (had to be cut short).
- Elected Member of the Royal Irish Academy (MRIA) 16th March 2011.
- Visiting Erskine Fellowship, University of Canterbury, Christchurch, October 2009.



Trinity College Dublin  
Coláiste na Tríonóide, Baile Átha Cliath  
The University of Dublin

## New Personal Chair of Molecular Materials created in TCD Chemistry Department



In 2019 Prof Sylvia Draper was promoted to a “Personal Chair”, (Professor of Molecular Materials) in the School of Chemistry in Trinity College. Given the disruption of university life by the Covid-19 crisis it is only this year that it became possible for Sylvia to deliver her Inaugural Lecture. The lecture was titled: - **'The Magic of Making Molecules'**. It was held on the evening of Thursday April 27<sup>th</sup> in the Trinity Business School, McNabb Theatre.



Her lecture was very chemistry rich, covering a wide range of topics. Indeed, it was a very lively full capacity evening with a reception and a good opportunity for networking and catching up with colleagues. The presentation had some lovely personal touches including her family along with current and former students and colleagues.



### Short Biography

**Prof. Sylvia Draper** graduated in Chemistry from the University of Exeter (1:1) in 1988. She received her Ph.D. from the University of Cambridge in 1991, working with Prof. C. Housecroft on 'Boron Butterfly Clusters'. Since 1993, after a short PD research fellowship with Prof. D. Cardin, Sylvia has worked as a lecturer, fellow and now Personal Chair (Professor of Molecular Materials), in the discipline of Inorganic and Synthetic Materials Chemistry in Trinity College Dublin.

Sylvia's career represents many firsts. Her election in 2019 as Dean of the Faculty of Science, Technology, Engineering and Mathematics in Trinity College Dublin is one of these, as she is the first female to hold this position.

Sylvia is an active researcher and a founding member of CRANN and the AMBER SFI research centre. In 2018 Sylvia was awarded the Institute of Chemistry of Ireland's prestigious David Brown award 'in recognition of [her] outstanding contribution to inorganic chemistry both nationally and internationally'. She also became the proud supervisor of the Royal Irish Academy's Chemistry Ph.D. graduate of the year and spear-headed a successful Dublin bid to host the 47th Inorganic Coordination Chemistry Conference (in 2028).

A strong advocate of teaching innovation and outreach, Sylvia was the recipient of both a Provost Teaching Award and a National Award for the Integration of Research Teaching and Learning (NAIRTL) in 2008. In 2017 she was elected a Fellow of the Royal Society of Chemistry (RSC). This recognized her role as the sole Irish representative on the Society's Dalton Division Council and the RSC Heads of Chemistry UK standing committee. She is currently Chair of the RoI RSC local section with over 1000 members. In 2018 she concluded an 8-year stint on the European Research Council's starter and collaborator PE5 award panels.

She is passionate about the public promotion of science and continues to work closely with the Higher Education Authority and others, on matters of educational policy and outreach. She has a number of educational publications which include an extract in the Oireachtas report on Leaving Certificate Reform (May 2022). She is an active contributor to national broadcasts including RTE Brain Storm, a platform for public engagement in science, and currently co-leads the University's E3 Initiative: a multi-million euro transdisciplinary project. Sylvia has been an advocate for action in the area of gender, equality and diversity throughout her career and continues to support institutional change in this area.

## **Inaugural Talk Abstract**

The members of the Draper research team aim to make the syntheses of molecules smarter. They seek to understand the aspects of a molecule that give rise to its desirable properties. They demonstrate how to best modify these key features and, in the process, determine how the properties can be optimised. In essence they learn by doing.

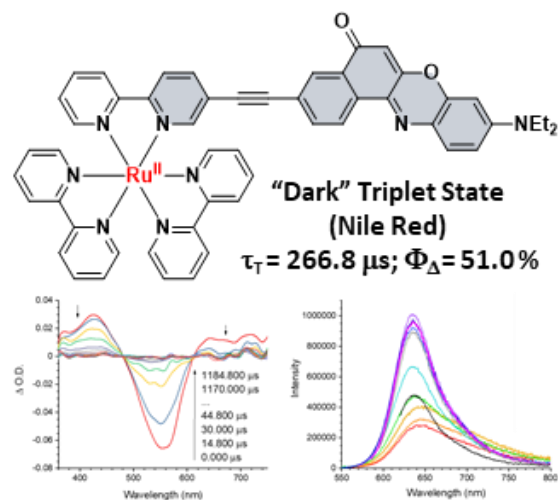
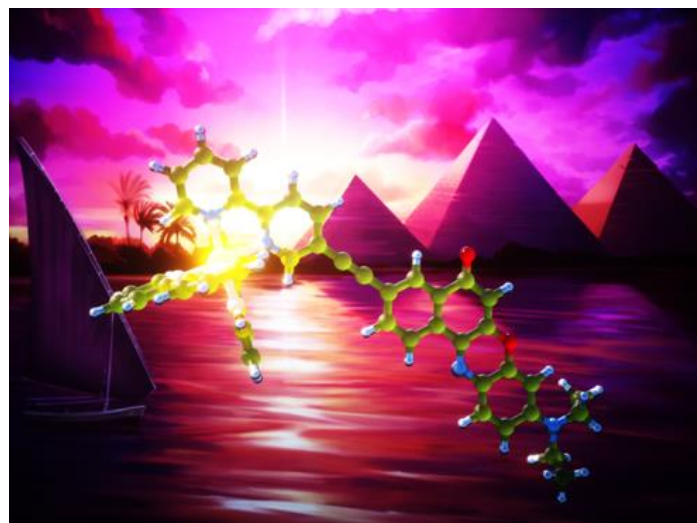
This presentation pays homage to the Ph.D. and postdoctoral fellows that have worked in the Draper team, and the fruitful collaborations both in Ireland and abroad that have pushed the research in many new directions. The talk explains how molecules interact with light. It thinks about how this influences our understanding of the world and it outlines the platform role that synthesis plays in creating the new materials that underpin advances in technology. At the end of the talk (whether you want to or not!) you will know how to make doped nanographenes (for application in optoelectronic devices such as OLEDs, PVs) and to design metal complexes as triplet photosensitisers (for photodynamic applications including the treatment of cancer).

## **The Sylvia Draper Group Recent Work**

The Draper team identifies new designs and explores novel synthetic routes to polyaromatic materials. Their goal is to create systems that demonstrate unusual and highly desirable photophysical properties. As a consequence of their work new strategies to develop strongly absorbing metal complexes with long-lived highly emissive excited states have emerged. These materials show improved performance in applications as triplet photosensitisers (PSs) in triplet-triplet annihilation upconversion (TTA-UC), singlet oxygen generation and photodynamic therapy (PDT).

Two recent highlights are complexes incorporating ethynyl Nile Red chromophores and non-symmetric bipyridines. The former possess non-emissive or 'dark' triplet states that can be utilised for singlet oxygen sensitising and cell death at very low concentrations and the latter exhibit solvent-dependent excited state behaviours. Both phenomena are extremely rare and open-up a myriad of new opportunities for exploitation e.g. as sensors or dual therapeutic agents.

[10.1039/D1TC02830H](https://doi.org/10.1039/D1TC02830H) (Communication: internal front cover) *J. Mater. Chem. C*, 2021, **9**, 14573-14577



TCD Retrospective Review 2011 – 2021 part11 New Professor Interviews Sylvia Draper:

[https://www.tcd.ie/provost/review/2021/new-professor-interviews/TCD\\_Retrospective\\_Review\\_2011%E2%80%932021\\_part11\\_New%20Professor%20Interviews\\_Sylvia\\_Draper.pdf](https://www.tcd.ie/provost/review/2021/new-professor-interviews/TCD_Retrospective_Review_2011%E2%80%932021_part11_New%20Professor%20Interviews_Sylvia_Draper.pdf)

## More about the Sylvia Draper Group

<https://chemistry.tcd.ie/staff/people/sd/Research.php>

## Sylvia Draper Publications

<https://chemistry.tcd.ie/staff/people/sd/Publications.php>

## Publications

- Colin J. Martin, Belen Gil, Sarath D. Perera and Sylvia M. Draper, Oxidative bond formation in di-thienyl polyphenylenes: the optical and electrochemical consequences, *European Journal of Organic Chemistry*, 10, 2011, p3491 - 3499
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- Metal-based molecular switches generated in, editor(s)Yarwood, Douthwaite and Duckett , *Spectroscopic Properties of Inorganic and Organometallic Compounds* , *Special Periodic Reports*, RSC, 2012, pp166 - 215, [Gearoid M. O" Maille, Sylvia M. Draper]

74th Irish Universities Chemistry Research Colloquium  
14th & 15th June 2023


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## Agenda

### June 14th

8.45 - 9.10 **Participant Registration**

9.10 - 9.30 **Conference Opening, Theatre IT250**

Professor Pat Guiry, President, Institute of Chemistry of Ireland Professor Paul Murphy, School of Biological and Chemical Sciences, University of Galway

9.30 - 10.30 **Prof Helen Blanchard, University of Galway, Theatre IT250**

Designing inhibitors that target disease-promoting carbohydrate-recognising proteins Plenary Lecture

10.30 - 11.00 **Tea/Coffee, Mounting of Posters**

11.00 - 12.15 **Organic Synthesis (Chair: XXX) | Materials 1 (Chair: XXX)**

Theatre D (Sponsored) Organic Synthesis (Chair: XXX) Speaker 1 Speaker 2 Speaker 3 Speaker 4  
Theatre E (Sponsored) Materials 1 (Chair: XXX) Speaker 1 Speaker 2 Speaker 3 Speaker 4

12.15 - 13.30 **Reaction Mechanism (Chair: XXX) | Materials 2 (Chair: XXX)**

Theatre D (Sponsored) Reaction Mechanism (Chair: XXX) Speaker 1 Speaker 2 Speaker 3 Speaker 4  
Theatre E (Sponsored) Materials 2 (Chair: XXX) Speaker 1 Speaker 2 Speaker 3 Speaker 4

13.30 - 14.30 *Lunch (Local Outlets)*

14.30 - 15.15 **Dr Miguel Manzano García, Universidad Complutense de Madrid, Theatre IT250**

Mesoporous Silica Nanoparticles for Nanomedicine Plenary Lecture

15.15 - 15.45 **Being a publisher in the digital era, Theatre IT250**

xxx Plenary Lecture "Round table" MacMillan Publishers, xxx?

15.45 - 17.00 **Biological Activity & Chemical Imaging**

Theatre D (Sponsored) Biological Activity (Chair: XXX) Speaker 1 Speaker 2 Speaker 3 Speaker 4  
Theatre E (Sponsored) Chemical Imaging (Chair: XXX) Speaker 1 Speaker 2 Speaker 3 Speaker 4

17.00 - 17.30 *Tea/Coffee, Viewing of Posters, Presentation by Almac about Careers*

17.30 - 19.00 **Poster Session with associated Drinks reception**

Sponsored by the Royal Society of Chemistry, Local Section 5.30 – 6.15 Even-Numbered Posters;  
6.15 – 17.00 Odd-Numbered Posters

19.00 - 22.00 **Dinner: BBQ at Sult** Sponsored

## June 15th

---

9.30 - 10.15 **Prof Carlo Cavallotti, Politecnico di Milano, Theatre IT250**

From Qualitative to Quantitative Predictions in Theoretical Gas Phase Chemical Kinetics:  
Fundamental Aspects and Examples Plenary Lecture

10.15 - 11.00 **Flow Chemistry (Chair: XXX) | Medicinal Chemistry (Chair: XXX)**

Theatre D (Sponsored) Flow Chemistry (Chair: XXX) Speaker 1 Speaker 2 Speaker 3 Speaker 4  
theatre E (Sponsored) Medicinal Chemistry (Chair: XXX) Speaker 1 Speaker 2 Speaker 3 Speaker 4

11.00 - 11.30 *Tea/Coffee*

11.30 - 13.15 **CO<sub>2</sub> Chemistry (Chair: XXX) | Therapeutic Agents (Chair: XXX)**

Theatre D (Sponsored) CO<sub>2</sub> Chemistry (Chair: XXX) Speaker 1 Speaker 2 Speaker 3 Speaker 4  
speaker 5 Theatre E (Sponsored) Therapeutic Agents (Chair: XXX) Speaker 1 Speaker 2 Speaker 3  
Speaker 4 Speaker 5

13.15 - 13.30 **Closing: Professor Paul Murphy**

Prize Giving: Professor Pat Guiry (Prizes - Sponsored)

**For Updates and to register go to the official web site below:**

**[74th Irish Universities Chemistry Research Colloquium | University of Galway School of Biological and Chemical Sciences \(clr.events\)](#)**



## The National Manufacturing & Supply Chain Conference & Exhibition

**23rd-24th May 2023 | RDS Simmonscourt, Dublin**

**Registration Free at:**

**<https://www.manufacturingevent.com/register>**

**Free registration** is now open for the **8<sup>th</sup> National Manufacturing & Supply Chain Conference and Exhibition** which will be held at the **RDS Simmonscourt, Dublin** on the **23<sup>rd</sup>** and **24<sup>th</sup>** of **May 2023**.

It has been a turbulent year with Economic activity in the manufacturing sector ascended to a new peak on the back of record rates of growth in output and new orders and another severe lengthening in suppliers' delivery times. The volume of new orders received by Irish manufacturers rose at the fastest in many decades. Companies have reported strong inflows of new work as customers reopened and lockdown restrictions began to loosen.

The event will cover various topical themes including:

Industry 4.0, 3D Printing, Digital Manufacturing, Smart Factory, Lean & Continuous Improvement, Robotics & Automation, Industrial Blockchain, Research & Development, Precision Engineering, QEHS, Supply Chain & Logistics, Sustainability, Food & Beverage Engineering, Pharmaceutical and Life Sciences, Reliability, Maintenance & Asset Management. Procurement, Government Policy and Industrial

Strategy, Exports, Skills & Training and much more. The manufacturing sector employs 260,000 people and plays pivotal role in global supply chain from engineering to computers and medical technologies.

In addition to Brexit and the global trading environment, other issues high on the agenda at the event include the challenges and opportunities provided by constantly changing customer demands, the rapid pace of technological advances in areas such as artificial intelligence, machine learning and robotics, along with heightening environmental concerns and intensifying competition both domestically and in international markets.

We have assembled an impressive line-up of manufacturing leaders, academics and government agencies who will engage in a stimulating blend of key note addresses and debates. The event will also feature an extensive exhibition showcasing the latest technological solutions and business services.

Visitors interested in improving the performance of their business can listen to case studies and technical presentations from leading global and local manufacturing experts, and meet with providers of cutting edge technology.

Economic activity in the manufacturing sector ascended to a new peak this year month on the back of record rates of growth in output and new orders and another severe lengthening in suppliers' delivery times, according to fresh data.

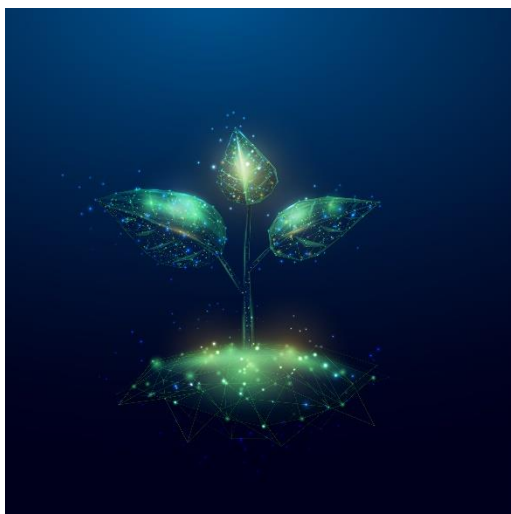
**Speakers:** <https://www.manufacturingevent.com/speakers>

**Co-Located Events:** <https://www.manufacturingevent.com/co-located-events>

**More Information:** <https://www.manufacturingevent.com>



## New Foundations



The New Foundations Scheme 2023 Strand Information Webinar will take place on Zoom at 9.30am next Wednesday, 3 May.

Please click on the link [here](#) to register.  
The agenda can be downloaded from the side bar at the top of this page.

More Details here: <https://research.ie/funding/new-foundations>

### Key dates

|                      |                                   |
|----------------------|-----------------------------------|
| Call open            | 25 April 2023 at 4pm (Irish time) |
| FAQ deadline         | 30 May 2023 at 4pm (Irish time)   |
| Applicant deadline   | 6 June 2023 at 4pm (Irish time)   |
| Endorsement deadline | 13 June 2023 at 4pm (Irish time)  |
| Outcome              | September 2023                    |
| Project start date   | 01 November 2023                  |



## New Foundations 2022 Awardees

14 February 2023

New Foundations awards help civic society organisations and Government departments to devise evidence-based strategies and policies. The **Irish Research Council** (IRC) is delighted to announce funding for 67 New Foundations projects that will reach communities across the country and beyond, focusing on diverse societal challenges and government policy issues.

Today's announcement represents a total investment of almost €875,000, inclusive of the **Department of An Taoiseach Shared Island awards** announced in December 2022, which form part of the New Foundations programme.

More Details here: <https://research.ie/2023/02/14/11824> and full list here: [https://research.ie/assets/uploads/2023/02/NF\\_2022\\_awardee\\_list\\_with\\_budget-1.pdf](https://research.ie/assets/uploads/2023/02/NF_2022_awardee_list_with_budget-1.pdf)

## Project Spotlight: World DNA Day – FIT-MIRS as Potential Therapeutics for Muscle Wasting

25 April 2023

Happy World DNA Day! Developments in the field of genetics have been some of the most important and ground-breaking in the last century. To celebrate DNA Day, we spoke to Dr Katarzyna Goljanek-Whysall about her Laureate project investigating the prospects for microRNA based interventions in minimising age-related muscle loss.

Read full report here: <https://research.ie/what-we-do/loveirishresearch/blog/project-spotlight-world-dna-day-fit-mirs-as-potential-therapeutics-for-muscle-wasting>



## **The Institute of Chemistry of Ireland** **Irish Young Chemists' Network (IYCN)**

After the ICI Postgraduate Chemistry Research Symposium held online in September 2020 was a success, an idea was put forward to establish an Irish Young Chemists' Network (IYCN) as part of the Institute of Chemistry of Ireland (ICI). This initiative was highly welcomed and encouraged by both the postgraduates in attendance of the online symposium and approved by the ICI Council Members during their Council meeting on the 1<sup>st</sup> October 2020.

The committee of the online research symposium was made up of postgraduate students from various institutions in Ireland. As this committee worked in great harmony together, and had already established connections while organising the symposium, it was suggested to keep this committee for the IYCN. The members were all happy and motivated to be part of the IYCN committee. Together, we have summarised some of the benefits of establishing the Irish Young Chemists' Network to include:

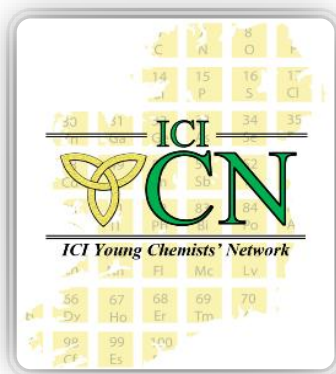
- 1) Community, network and connection of young chemists
- 2) More opportunities for collaboration between early stage researchers
- 3) Organisation of conferences and events for young chemists
- 4) Opportunity for postgraduate students to present and discuss their work
- 5) A platform to promote upcoming positions suited for young chemists

The committee feel strongly about the first benefit especially during these times. We feel that the mental health of young chemists, including postgraduate students, is critical and essential. A sense of community and closeness, particularly during moments like these, would surely be beneficial to their mental health. As the chair of the committee, I will work together with the wonderful team of postgraduate students to establish the IYCN, while liaising and updating the ICI Council periodically as well as continue to avail of their expertise and support.

**Mark Kelada, B.Sc. MICI Ph.D.**

*ICI Young Chemist Representative and Chair of Irish Young Chemists' Network*





Are you a chemist in Ireland aged between 18-35 years old? Want to be part of an exciting new network of young chemists and be part of a growing community? Join us today by emailing [youngchemists@instituteofchemistry.org](mailto:youngchemists@instituteofchemistry.org) with your name, age, and where you study or work. If your institution is not listed below, you could even be part of our incredible committee.

#### **New Committee 2023:**

| <b>Name</b>               | <b>Position</b>      | <b>Representation</b> |
|---------------------------|----------------------|-----------------------|
| <b>Colm McKeever</b>      | Chairperson          | MU                    |
| <b>Jessica O'Neill</b>    | Vice-Chairperson     | DCU                   |
| <b>Sean Byrne</b>         | Secretary            | UCD                   |
| <b>Liam Fitzgerald</b>    | Treasurer            | NUIG                  |
| <b>Cathal Kelly</b>       | PRO                  | QUB                   |
| <b>Siobhán O'Flaherty</b> | Committee member     | RCSI                  |
| <b>Hong Ann Gan</b>       | Committee member     | TUS                   |
| <b>Matthew McCole</b>     | Committee member     | ATU                   |
| <b>Wiktorja Brytan</b>    | Committee member     | UL                    |
| <b>Neil Curtis</b>        | Committee member     | UCC                   |
| <b>Joseph Byrne</b>       | Advisor (non-voting) | UCD                   |

#### **ICI-YCN Quiz**

On the 24<sup>th</sup> of November, teams from up and down the country competed in the first ICI-YCN Interdepartmental Quiz. This hybrid event featured 16 teams from MU, QUB, DCU, UL, AIT, NUIG and ATU, and covered topics ranging from bond angles to Heath Ledger films. With several competitive teams, the final round proved to be decisive, with UL's "Ion the Prize" scoring maximum points and

taking home the prize. The ICI-YCN would like to thank all our competitors for helping us make a thoroughly enjoyable event, and we look forward to next year's quiz!



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## Institute of Chemistry of Ireland as a Co-Owner Benefits when you publish in PCCP



**Physical Chemistry Chemical Physics**

21 March 2023, Issue 11,

Page 7553 to 8222

<https://pubs.rsc.org/en/journals/journalissues/cp#!issueid=cp025011&type=current&issnprint=1463-9076>

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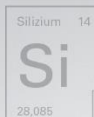
The journal has a broad scope which includes spectroscopy, dynamics, kinetics, statistical mechanics, thermodynamics, electrochemistry, catalysis, surface science, quantum mechanics and theoretical developments play an important part in the journal. Interdisciplinary research areas such as polymers and soft matter, materials, nanoscience, surfaces/interfaces, and biophysical chemistry are especially welcomed whenever they include a physico-chemical approach.

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## Chemistry and related Sciences around the World

### Physicists observe rare resonance in molecules for the first time

1 February

[Physicists observe rare resonance in molecules for the first time](#)

DOI: [10.1038/s41586-022-05635-8](https://doi.org/10.1038/s41586-022-05635-8)

### Degradation of 1-alkyl-3-methylimidazolium tetrafluoroborate in an ultrasonic zero-valent zinc and activated carbon micro-electrolysis system | Scientific Reports

2 February

<https://www.nature.com/articles/s41598-023-28237-4>

DOI <https://doi.org/10.1038/s41598-023-28237-4>

### An approach to stall oxygen evolution in high-voltage cathodes

1 February

[An approach to stall oxygen evolution in high-voltage cathodes \(techxplore.com\)](#)

DOI: [10.1038/s41560-022-01179-3](https://doi.org/10.1038/s41560-022-01179-3)

### Newly proposed strategy in chemistry sheds light on better applications in energy devices

2 February

<https://phys.org/news/2023-02-newly-strategy-chemistry-applications-energy.html>

DOI: [10.26599/POM.2023.9140019](https://doi.org/10.26599/POM.2023.9140019)

### Simple connections take the prize | Nature Materials

2 February

[Simple connections take the prize | Nature Materials](#)

DOI <https://doi.org/10.1038/s41563-023-01480-w>

### Carbon capture is here—it just isn't evenly distributed | Ars Technica

2 February

<https://arstechnica.com/science/2023/02/carbon-capture-is-here-it-just-isnt-evenly-distributed>

### Salt-rejecting microchannels help make seawater drinkable using the power of the sun

26 January

<https://techxplore.com/news/2023-01-salt-rejecting-microchannels-seawater-drinkable-power.html>

DOI: [10.1038/s41467-022-34528-7](https://doi.org/10.1038/s41467-022-34528-7)

### The surprising chemicals used to embalm Egyptian mummies

1 February

[The surprising chemicals used to embalm Egyptian mummies \(nature.com\)](https://doi.org/10.1038/d41586-022-04400-1)

doi: <https://doi.org/10.1038/d41586-022-04400-1>

## **Synthesis of Arynes via Formal Dehydrogenation of Arenes | Journal of the American Chemical Society**

2 February

<https://pubs.acs.org/doi/10.1021/jacs.2c13007>

<https://doi.org/10.1021/jacs.2c13007>

## **Breaking the temperature barrier of hydrothermal carbonization of lignocellulosic biomass**

30 January

[Breaking the temperature barrier of hydrothermal carbonization of lignocellulosic biomass \(phys.org\)](https://doi.org/10.1016/j.gee.2023.01.001)

DOI: [10.1016/j.gee.2023.01.001](https://doi.org/10.1016/j.gee.2023.01.001)

## **Postdocs need raises. But who will foot the bill? | Science | AAAS**

31 January

[Postdocs need raises. But who will foot the bill? | Science | AAAS](https://doi.org/10.1126/science.adg9453)

doi: [10.1126/science.adg9453](https://doi.org/10.1126/science.adg9453)

## **Molecular evolutionary insight of structural zinc atom in yeast xylitol dehydrogenases and its application in bioethanol production by lignocellulosic biomass | Scientific Reports**

2 February

<https://www.nature.com/articles/s41598-023-29195-7>

DOI <https://doi.org/10.1038/s41598-023-29195-7>

## **Scientists made a new kind of ice that might exist on distant moons**

2 February

[Scientists made a new kind of ice that might exist on distant moons \(nature.com\)](https://doi.org/10.1038/d41586-023-00293-w)

doi: <https://doi.org/10.1038/d41586-023-00293-w>

## **Theory sheds light on efficient hydrogen peroxide synthesis**

2 February

[Theory sheds light on efficient hydrogen peroxide synthesis \(phys.org\)](https://doi.org/10.1039/D2EE02734H)

DOI: [10.1039/D2EE02734H](https://doi.org/10.1039/D2EE02734H)

## **Catalytically Generated Meerwein's Salt-Type Oxonium Ions for Friedel–Crafts C(sp<sup>2</sup>)–H Methylation with Methanol | Journal of the American Chemical Society**

1 February

<https://pubs.acs.org/doi/10.1021/jacs.2c13341>

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### **Copper-catalyzed alkyne oxidation/Büchner-type ring-expansion to access benzo[6,7]azepino[2,3-b]quinolines and pyridine-based diones | Communications Chemistry**

20 February

[Copper-catalyzed alkyne oxidation/Büchner-type ring-expansion to access benzo\[6,7\]azepino\[2,3-b\]quinolines and pyridine-based diones | Communications Chemistry \(nature.com\)](https://www.nature.com/articles/s42004-023-00840-6)

DOI <https://doi.org/10.1038/s42004-023-00840-6>

### **Large-scale synthesis of functional single-atom catalysts**

22 February

[Large-scale synthesis of functional single-atom catalysts | Communications Chemistry \(nature.com\)](https://www.nature.com/articles/s42004-023-00834-4)

DOI <https://doi.org/10.1038/s42004-023-00834-4>

### **1,3a,6a-Triazapentalene derivatives as photo-induced cytotoxic small fluorescent dyes**

22 February

[1,3a,6a-Triazapentalene derivatives as photo-induced cytotoxic small fluorescent dyes | Communications Chemistry \(nature.com\)](https://www.nature.com/articles/s42004-023-00838-0)

DOI <https://doi.org/10.1038/s42004-023-00838-0>

## **Formation, stabilization and fate of acetaldehyde and higher aldehydes in an autonomously changing prebiotic system emerging from acetylene**

22 February

[Formation, stabilization and fate of acetaldehyde and higher aldehydes in an autonomously changing prebiotic system emerging from acetylene | Communications Chemistry \(nature.com\)](#)

DOI <https://doi.org/10.1038/s42004-023-00833-5>

## **A recyclable stereoauxiliary aminocatalyzed strategy for one-pot synthesis of indolizine-2-carbaldehydes**

23 February

[A recyclable stereoauxiliary aminocatalyzed strategy for one-pot synthesis of indolizine-2-carbaldehydes | Communications Chemistry \(nature.com\)](#)

DOI <https://doi.org/10.1038/s42004-023-00828-2>

## **Systematic screening of gas diffusion layers for high performance CO<sub>2</sub> electrolysis | Communications Chemistry**

24 February

[https://www.nature.com/articles/s42004-023-00836-2?utm\\_source=commschem\\_etoc&utm\\_medium=email&utm\\_campaign=toc\\_42004\\_6\\_1&utm\\_content=20230227](https://www.nature.com/articles/s42004-023-00836-2?utm_source=commschem_etoc&utm_medium=email&utm_campaign=toc_42004_6_1&utm_content=20230227)

DOI <https://doi.org/10.1038/s42004-023-00836-2>

## **Atroposelective desymmetrization of 2-arylresorcinols via Tsuji-Trost allylation | Communications Chemistry**

25 February

[Atroposelective desymmetrization of 2-arylresorcinols via Tsuji-Trost allylation | Communications Chemistry \(nature.com\)](#)

DOI <https://doi.org/10.1038/s42004-023-00839-z>

## **Novel quantum entanglement lets researchers spy on atomic nuclei**

22 February

[Novel quantum entanglement lets researchers spy on atomic nuclei \(osu.edu\)](#)

## **When material goes quantum, electrons slow down and form a crystal**

24 February

[When material goes quantum, electrons slow down and form a crystal \(phys.org\)](#)

DOI: [10.1038/s41586-020-2092-4](https://doi.org/10.1038/s41586-020-2092-4)

## **A monofluoride ether-based electrolyte solution for fast-charging and low-temperature non-aqueous lithium metal batteries | Nature Communications**

25 February

<https://www.nature.com/articles/s41467-023-36793-6>

DOI <https://doi.org/10.1038/s41467-023-36793-6>

## **Cobalt(III)-catalyzed asymmetric ring-opening of 7-oxabenzonorbornadienes via indole C–H functionalization | Nature Communications**

25 February

[Cobalt\(III\)-catalyzed asymmetric ring-opening of 7-oxabenzonorbornadienes via indole C–H functionalization | Nature Communications](#)

DOI <https://doi.org/10.1038/s41467-023-36723-6>

## **Atroposelective desymmetrization of 2-arylresorcinols via Tsuji-Trost allylation | Communications Chemistry**

25 February

[Atroposelective desymmetrization of 2-arylresorcinols via Tsuji-Trost allylation | Communications Chemistry \(nature.com\)](https://doi.org/10.1038/s42004-023-00839-z)

DOI <https://doi.org/10.1038/s42004-023-00839-z>

## **Frontal Polymerizations: From Chemical Perspectives to Macroscopic Properties and Applications | Chemical Reviews**

24 February

[Frontal Polymerizations: From Chemical Perspectives to Macroscopic Properties and Applications | Chemical Reviews \(acs.org\)](https://doi.org/10.1021/acs.chemrev.2c00686)

<https://doi.org/10.1021/acs.chemrev.2c00686>

## **Catalyst Stability Considerations for Electrochemical Energy Conversion with Non-Noble Metals: Do We Measure on What We Synthesized? | ACS Energy Letters**

24 February

[Catalyst Stability Considerations for Electrochemical Energy Conversion with Non-Noble Metals: Do We Measure on What We Synthesized? | ACS Energy Letters](https://doi.org/10.1021/acsenergylett.3c00021)

<https://doi.org/10.1021/acsenergylett.3c00021>

## **A catalyst for change in the chemicals sector**

26 February

[A catalyst for change in the chemicals sector | McKinsey & Company](#)

## **Researchers discover new superacid**

27 February

[Researchers discover new superacid \(phys.org\)](#) and

## **Chemists Develop New Technique to Synthesize Lewis Superacids**

27 February

[Chemists Develop New Technique to Synthesize Lewis Superacids | Sci.News](#)

## **Boron-Centered Lewis Superacid through Redox-Active Ligands: Application in C–F and S–F Bond Activation**

9 January

[Boron-Centered Lewis Superacid through Redox-Active Ligands: Application in C–F and S–F Bond Activation - Kőring - Angewandte Chemie International Edition - Wiley Online Library](#)

DOI: [10.1002/anie.202216959](https://doi.org/10.1002/anie.202216959)

## **Shape-shifting experiment challenges interpretation of how cadmium nuclei move**

27 February

[Shape-shifting experiment challenges interpretation of how cadmium nuclei move \(phys.org\)](#)

DOI: [10.1016/j.physletb.2022.137446](https://doi.org/10.1016/j.physletb.2022.137446)

## **Advancing the science of synthesis**

10 February

[Advancing the science of synthesis | Nature Computational Science](#)

DOI <https://doi.org/10.1038/s43588-023-00408-3>

## **Polyfunctionalization of vicinal carbon centers and synthesis of unsymmetric 1,2,3,4-tetracarbonyl compounds | Nature Communications**

27 February

[Polyfunctionalization of vicinal carbon centers and synthesis of unsymmetric 1,2,3,4-tetracarbonyl compounds | Nature Communications](#)

DOI <https://doi.org/10.1038/s41467-023-36757-w>

## **Defluoroalkylation of Trifluoromethylarenes with Hydrazones: Rapid Access to Benzylic Difluoroarylethylamines | Organic Letters**

27 February

[Defluoroalkylation of Trifluoromethylarenes with Hydrazones: Rapid Access to Benzylic Difluoroarylethylamines | Organic Letters \(acs.org\)](#)

<https://doi.org/10.1021/acs.orglett.3c00126>

## **A catalyst for change in the chemicals sector (McKKinsey series of articles & more)**

26 February

[A catalyst for change in the chemicals sector \(mckinsey.com\)](#)

## **Chemists in Ukraine revisited: Olha Konshyna**

28 February (5 articles about chemists in Ukraine and extra. Registration or RSC membership needed)

[Chemistry World Daily Newsletter \(rsc.org\)](#)

## **Electrode-electrolyte interfaces - Minerva Fast-Track Group**

? February

[Monteiro Minerva Fast Track | Fritz Haber Institute of the Max Planck Society \(mpg.de\)](#)

## **Unlocking the Mystery of Unconventional Superconductivity: A Breakthrough Experiment**

28 February

[Unlocking the Mystery of Unconventional Superconductivity: A Breakthrough Experiment \(scitechdaily.com\)](#)

DOI: [10.1038/s41586-022-05437-y](https://doi.org/10.1038/s41586-022-05437-y)

## **Remote Site-Selective C(sp<sup>3</sup>)-H Monodeuteration of Unactivated Alkenes via Chain-Walking Strategy | ACS Catalysis**

28 February

<https://pubs.acs.org/doi/10.1021/acscatal.3c00559>

<https://doi.org/10.1021/acscatal.3c00559>

## **Direct Synthesis of Thioesters from Feedstock Chemicals and Elemental Sulfur | Journal of the American Chemical Society**

28 February

<https://pubs.acs.org/doi/10.1021/jacs.2c13157>

<https://doi.org/10.1021/jacs.2c13157>

## **Chemistry to Circular Economy | Research | Queen's University Belfast**

1 March

[Chemistry to Circular Economy | Research | Queen's University Belfast \(qub.ac.uk\)](#)

## **New purification method could make protein drugs cheaper | MIT News | Massachusetts Institute of Technology**

28 February

<https://news.mit.edu/2023/new-purification-method-could-make-protein-drugs-cheaper-0228>

## **Green and efficient approach to synthesizing esters for flavorings, fragrances**

28 February

<https://phys.org/news/2023-02-green-efficient-approach-esters-flavorings.html>

DOI: [10.1016/j.jclepro.2022.134772](https://doi.org/10.1016/j.jclepro.2022.134772)

## **Quantum Chemistry Breakthrough: Molecules Caught Tunnelling for the First Time**

1 March

[Quantum Chemistry Breakthrough: Molecules Caught Tunnelling for the First Time \(scitechdaily.com\)](https://scitechdaily.com/quantum-chemistry-breakthrough-molecules-caught-tunnelling-for-the-first-time/)

DOI: [10.1038/s41586-023-05727-z](https://doi.org/10.1038/s41586-023-05727-z)

## **eFluorination Using Cheap and Readily Available Tetrafluoroborate Salts | Organic Letters**

1 March

<https://pubs.acs.org/doi/full/10.1021/acs.orglett.2c04305>

<https://doi.org/10.1021/acs.orglett.2c04305>

## **Catalytic asymmetric synthesis of cannabinoids and menthol from neral | Nature**

1 March

<https://www.nature.com/articles/s41586-023-05747-9>

DOI <https://doi.org/10.1038/s41586-023-05747-9>

## **The Materials Science behind Sustainable Metals and Alloys | Chemical Reviews**

27 February

<https://pubs.acs.org/doi/10.1021/acs.chemrev.2c00799>

<https://doi.org/10.1021/acs.chemrev.2c00799>

## **A closer look at the nanoscale and beyond | MIT News | Massachusetts Institute of Technology**

2 March

<https://news.mit.edu/2023/closer-look-nanoscale-and-beyond-0302>

## **Developing a catalyst that purifies herbicide-tainted water and produces hydrogen**

2 March

[Developing a catalyst that purifies herbicide-tainted water and produces hydrogen \(phys.org\)](https://phys.org/news/2023-03-developing-catalyst-purifies-herbicide-tainted-water-produces-hydrogen.html)

DOI: [10.1021/acscatal.3c00265](https://doi.org/10.1021/acscatal.3c00265)

## **One-pot conversion of engineered poplar into biochemicals and biofuels using biocompatible deep eutectic solvents**

3 March

[One-pot conversion of engineered poplar into biochemicals and biofuels using biocompatible deep eutectic solvents \(phys.org\)](https://phys.org/news/2023-03-one-pot-conversion-engineered-poplar-biochemicals-biofuels-biocompatible-deep-eutectic-solvents.html)

DOI: [10.1039/D2GC02774G](https://doi.org/10.1039/D2GC02774G)

## **Researchers propose a simple, inexpensive approach to fabricating carbon nanotube wiring on plastic films**

2 March

[Researchers propose a simple, inexpensive approach to fabricating carbon nanotube wiring on plastic films \(phys.org\)](https://phys.org/news/2023-03-researchers-propose-simple-inexpensive-approach-fabricating-carbon-nanotube-wiring-plastic-films.html)

DOI: [10.1038/s41598-023-29578-w](https://doi.org/10.1038/s41598-023-29578-w)

## **Researchers prepare ethylene by single-atom catalytic electroreduction of CO<sub>2</sub>**

3 March

<https://phys.org/news/2023-03-ethylene-single-atom-catalytic-electroreduction-co2.html>

DOI: [10.1038/s41467-022-35630-6](https://doi.org/10.1038/s41467-022-35630-6)

## **Zn(II)-Catalyzed Multicomponent Sustainable Synthesis of Pyridines in Air | The Journal of Organic Chemistry**

28 February

[Zn\(II\)-Catalyzed Multicomponent Sustainable Synthesis of Pyridines in Air | The Journal of Organic Chemistry \(acs.org\)](https://doi.org/10.1021/acs.joc.2c02867)

<https://doi.org/10.1021/acs.joc.2c02867>

## **Threading Rows of Metal Atoms Into Nanofiber Bundles To Create Flexible Nanowires**

5 March

<https://scitechdaily.com/threading-rows-of-metal-atoms-into-nanofiber-bundles-to-create-flexible-nanowires>

DOI: [10.1021/acsnano.2c10997](https://doi.org/10.1021/acsnano.2c10997)

## **Horizon: Scientists warn Sunak on EU research programme - BBC News**

3 March

[Horizon: Scientists warn Sunak on EU research programme - BBC News](https://www.bbc.com/news/science-environment-62888888)

## **3D-snapshots of nanoparticles**

3 March

[3D-snapshots of nanoparticles \(phys.org\)](https://phys.org/news/2023-03-3d-snapshots-nanoparticles.html)

DOI: [10.1126/sciadv.ade5839](https://doi.org/10.1126/sciadv.ade5839)

## **Molecular atlas of spider silk production could help bring unparalleled material to market**

3 March

[Molecular atlas of spider silk production could help bring unparalleled material to market \(phys.org\)](https://phys.org/news/2023-03-molecular-atlas-spider-silk-production.html)

DOI: [10.1038/s41467-023-36545-6](https://doi.org/10.1038/s41467-023-36545-6)

## **Ligand vacancy channels in pillared inorganic-organic hybrids for electrocatalytic organic oxidation with enzyme-like activities | Nature Communications**

2 March

[Ligand vacancy channels in pillared inorganic-organic hybrids for electrocatalytic organic oxidation with enzyme-like activities | Nature Communications](https://doi.org/10.1038/s41467-023-36830-4)

DOI <https://doi.org/10.1038/s41467-023-36830-4>

## **Abiotic peptides as carriers of information for the encoding of small-molecule library synthesis | Science**

2 March

<https://www.science.org/doi/10.1126/science.adf1354>

DOI: [10.1126/science.adf1354](https://doi.org/10.1126/science.adf1354)

## **A Surprising New Method for Converting Light Into Electricity**

2 March

<https://scitechdaily.com/a-surprising-new-method-for-converting-light-into-electricity>

DOI: [10.1038/s41567-022-01898-0](https://doi.org/10.1038/s41567-022-01898-0)

**Organogel delivery vehicles for the stabilization of organolithium reagents | Nature Chemistry**

16 February

[Organogel delivery vehicles for the stabilization of organolithium reagents | Nature Chemistry](https://doi.org/10.1038/s41557-023-01136-x)

DOI <https://doi.org/10.1038/s41557-023-01136-x>

**Biomimetic Cationic Cyclopropanation Enables an Efficient Chemoenzymatic Synthesis of 6,8-Cycloeudesmanes | Journal of the American Chemical Society**

28 February

<https://pubs.acs.org/doi/10.1021/jacs.2c13116>

<https://doi.org/10.1021/jacs.2c13116>

**Experimental study on evaluation and optimization of heavy metals adsorption on a novel amidoximated silane functionalized *Luffa cylindrica* | Scientific Reports**

4 March

<https://www.nature.com/articles/s41598-023-30634-8>

DOI <https://doi.org/10.1038/s41598-023-30634-8>

**Brønsted Acids Promote Olefin Oxidations by Bioinspired Nonheme CoIII(PhIO)(OH) Complexes: A Role for Low-Barrier Hydrogen Bonds | Journal of the American Chemical Society**

3 March

<https://pubs.acs.org/doi/10.1021/jacs.2c12307>

<https://doi.org/10.1021/jacs.2c12307>

**Molecular Tetris by sequence-specific stacking of hydrogen bonding molecular clips**

28 December 2022

[Molecular Tetris by sequence-specific stacking of hydrogen bonding molecular clips | Communications Chemistry \(nature.com\)](https://doi.org/10.1038/s42004-022-00802-4)

DOI <https://doi.org/10.1038/s42004-022-00802-4>

**Infrared radiative switching with thermally and electrically tunable transition metal oxides-based plasmonic grating | Scientific Reports**

6 March

[Infrared radiative switching with thermally and electrically tunable transition metal oxides-based plasmonic grating | Scientific Reports \(nature.com\)](https://doi.org/10.1038/s41598-023-30959-4)

DOI <https://doi.org/10.1038/s41598-023-30959-4>

**$\phi$ -Aromaticity in prismatic {Bi<sub>6</sub>}-based clusters | Nature Chemistry**

22 December 2022

[\$\phi\$ -Aromaticity in prismatic {Bi<sub>6</sub>}-based clusters | Nature Chemistry](https://doi.org/10.1038/s41557-022-01099-5)

DOI <https://doi.org/10.1038/s41557-022-01099-5>

**Red light-driven electron sacrificial agents-free photoreduction of inert aryl halides via triplet-triplet annihilation | Nature Communications**

27 February

<https://www.nature.com/articles/s41467-023-36679-7>

DOI <https://doi.org/10.1038/s41467-023-36679-7>



## **Infrared radiative switching with thermally and electrically tunable transition metal oxides-based plasmonic grating | Scientific Reports**

6 March

[Infrared radiative switching with thermally and electrically tunable transition metal oxides-based plasmonic grating | Scientific Reports \(nature.com\)](#)

DOI <https://doi.org/10.1038/s41598-023-30959-4>

## **Hydrogen atom collisions with a semiconductor efficiently promote electrons to the conduction band | Nature Chemistry**

21 November 2022

[Hydrogen atom collisions with a semiconductor efficiently promote electrons to the conduction band | Nature Chemistry](#)

DOI <https://doi.org/10.1038/s41557-022-01085-x>

## **Ligand-Enabled Gold-Catalyzed C(sp<sup>2</sup>)-O Cross-Coupling Reactions | ACS Catalysis**

3 March

[Ligand-Enabled Gold-Catalyzed C\(sp<sup>2</sup>\)-O Cross-Coupling Reactions | ACS Catalysis](#)

<https://doi.org/10.1021/acscatal.3c00338>

## **Bending 2D nanomaterial could 'switch on' future technologies**

6 March

[Bending 2D nanomaterial could 'switch on' future technologies \(phys.org\)](#)

DOI: [10.1021/acsnano.3c00492](https://doi.org/10.1021/acsnano.3c00492)

## **Counterintuitive Chemistry: Carbene Stabilization of Zero-Oxidation State Main Group Species | Journal of the American Chemical Society**

6 March

<https://pubs.acs.org/doi/10.1021/jacs.2c13574>

<https://doi.org/10.1021/jacs.2c13574>

## **Unlocking the Secrets of Water-Ion Interactions in Layered Materials**

6 March

[Unlocking the Secrets of Water-Ion Interactions in Layered Materials \(scitechdaily.com\)](#)

DOI: [10.1038/s41467-022-34124-9](https://doi.org/10.1038/s41467-022-34124-9)

## **Scientists Identify One of the Causes of Aggressive Liver Cancer – A “Molecular Staple”**

6 March

[Scientists Identify One of the Causes of Aggressive Liver Cancer – A “Molecular Staple” \(scitechdaily.com\)](#)

DOI: [10.1016/j.celrep.2022.111917](https://doi.org/10.1016/j.celrep.2022.111917)

## **New method to synthesize menthol**

7 March

<https://phys.org/news/2023-03-method-menthol.html>

DOI: [10.1038/s41586-023-05747-9](https://doi.org/10.1038/s41586-023-05747-9)

## **Nobel scientist says 'UK research is in jeopardy'**

7 March

[Nobel scientist says 'UK research is in jeopardy' - BBC News](#)

## **Highly efficient, near-infrared-featured CO<sub>2</sub> reduction by surface plasmon**

6 March

[Highly efficient, near-infrared-featured CO2 reduction by surface plasmon \(phys.org\)](#)

[DOI: 10.1038/s41467-023-35860-2](#)

## **Ground-state cooling of a nanoparticle along two directions of motion**

6 March

<https://phys.org/news/2023-03-ground-state-cooling-nanoparticle-motion.html>

[DOI: 10.1038/s41567-023-01956-1](#)

## **The Rarest Natural Element On Earth Will Vaporize Itself If You Collect Too Much Of It | IFLScience**

7 March

[The Rarest Natural Element On Earth Will Vaporize Itself If You Collect Too Much Of It | IFLScience](#)

## **International Women's Day: Twelve women from chemistry history – pt. 5 – Compound Interest**

7 March

<https://www.compoundchem.com/2023/03/07/iwd2023>

## **Celebrating Female Scientists on International Women's Day**

8 March

[Celebrating Female Scientists on International Women's Day Video | Technology Networks](#)

## **Displaying The Time Is Elemental With This Periodic Table Clock | Hackaday**

7 March

<https://hackaday.com/2023/03/07/displaying-the-time-is-elemental-with-this-periodic-table-clock>

## **Astronomers Find Evidence for Dark Matter Density Spikes around Stellar-Mass Black Holes | Sci.News**

6 March

<https://www.sci.news/astromy/dark-matter-density-spikes-stellar-mass-black-holes-11716.html>

## **Food Is Being Contaminated by PFAS From Wrappers**

8 March

[Food Is Being Contaminated by PFAS From Wrappers | Technology Networks](#)

doi:[10.1021/acs.estlett.3c00094](https://doi.org/10.1021/acs.estlett.3c00094)

## **Trillionth of a Second Shutter Speed Allows "Camera" To See Through Atomic Disorder**

8 March

[Trillionth of a Second Shutter Speed Allows "Camera" To See Through Atomic Disorder | Technology Networks](#)

doi:[10.1038/s41563-023-01483-7](https://doi.org/10.1038/s41563-023-01483-7)

## **A Bionic - Gill 3D Hydrogel Evaporator with Multidirectional Crossflow Salt Mitigation and Aquaculture Applications - Zhang - Advanced Functional Materials - Wiley Online Library**

8 March

<https://onlinelibrary.wiley.com/doi/10.1002/adfm.202300318>

<https://doi.org/10.1002/adfm.202300318>

## **Heteronuclear Dual Single-Atom Catalysts for Ambient Conversion of CO<sub>2</sub> from Air to Formate | ACS Catalysis**

7 March

<https://pubs.acs.org/doi/10.1021/acscatal.2c06033>

<https://doi.org/10.1021/acscatal.2c06033>

## **New Forms of Exotic Superconductivity by Stacking Layers of Graphene**

8 March

[New Forms of Exotic Superconductivity by Stacking Layers of Graphene \(scitechdaily.com\)](https://scitechdaily.com/new-forms-of-exotic-superconductivity-by-stacking-layers-of-graphene)

DOI: [10.1103/PhysRevB.107.104502](https://doi.org/10.1103/PhysRevB.107.104502)

## **Researchers Unveil New Platform for Catalytic Syngas Conversion**

9 March

[Researchers Unveil New Platform for Catalytic Syngas Conversion \(scitechdaily.com\)](https://scitechdaily.com/researchers-unveil-new-platform-for-catalytic-syngas-conversion)

DOI: [10.1016/j.chempr.2023.01.004](https://doi.org/10.1016/j.chempr.2023.01.004)

## **Scientists Have Discovered an Enzyme That Converts Air Into Electricity**

8 March

[Scientists Have Discovered an Enzyme That Converts Air Into Electricity \(scitechdaily.com\)](https://scitechdaily.com/scientists-have-discovered-an-enzyme-that-converts-air-into-electricity)

DOI: [10.1038/s41586-023-05781-7](https://doi.org/10.1038/s41586-023-05781-7)

## **Powder Handling: Identify Key Experiments For Solids Scale-Up**

8 March

[Powder Handling: Identify Key Experiments For Solids Scale-Up | Chemical Processing](https://chemprocess.com/powder-handling-identify-key-experiments-for-solids-scale-up)

## **High-efficiency gold recovery by additive-induced supramolecular polymerization of $\beta$ -cyclodextrin | Nature Communications**

9 March

<https://www.nature.com/articles/s41467-023-36591-0>

DOI <https://doi.org/10.1038/s41467-023-36591-0>

## **Nanoscale 'diamond rings' provide unconventional giant 'magnetoresistance' for the development of new quantum devices.**

9 March

[Nanoscale 'diamond rings' provide unconventional giant 'magnetoresistance' for the development of new quantum devices \(phys.org\)](https://phys.org/news/2022-03-nanoscale-diamond-rings-provide-unconventional-giant-magnetoresistance-for-the-development-of-new-quantum-devices.html)

DOI: [10.1002/adma.202211129](https://doi.org/10.1002/adma.202211129)

## **Bacterial enzyme traps and breaks down PFAS molecules**

9 March

[Bacterial enzyme traps and breaks down PFAS molecules \(phys.org\)](https://phys.org/news/2022-03-bacterial-enzyme-traps-and-breaks-down-pfas-molecules.html)

DOI: [10.1038/s41467-023-36604-y](https://doi.org/10.1038/s41467-023-36604-y)

## **New direct air capture device three times more efficient than current approaches**

9 March

[New direct air capture device three times more efficient than current approaches \(techxplore.com\)](https://techxplore.com/news/2022-03-new-direct-air-capture-device-three-times-more-efficient-than-current-approaches.html)

DOI: [10.1126/sciadv.adg1956](https://doi.org/10.1126/sciadv.adg1956)

## **A general highly efficient synthesis of biocompatible rhodamine dyes and probes for live-cell multicolor nanoscopy | Nature Communications**

9 March

[A general highly efficient synthesis of biocompatible rhodamine dyes and probes for live-cell multicolor nanoscopy | Nature Communications](#)  
DOI <https://doi.org/10.1038/s41467-023-36913-2>

### **Knots smaller than human hair make materials unusually tough**

9 March

[Knots smaller than human hair make materials unusually tough \(phys.org\)](#)  
DOI: [10.1126/sciadv.ade6725](https://doi.org/10.1126/sciadv.ade6725)

### **Unexpected Behavior – Bending 2D Nanomaterial Could “Switch On” Future Technologies**

9 March

[Unexpected Behavior – Bending 2D Nanomaterial Could “Switch On” Future Technologies \(scitechdaily.com\)](#)  
DOI: [10.1021/acsnano.3c00492](https://doi.org/10.1021/acsnano.3c00492)

### **Scientists Create “Reddmatter” – Game-Changing Room-Temperature Superconductor**

9 March

[Scientists Create “Reddmatter” – Game-Changing Room-Temperature Superconductor \(scitechdaily.com\)](#)  
DOI: [10.1038/s41586-023-05742-0](https://doi.org/10.1038/s41586-023-05742-0)

### **Room-Temperature Superconductor Discovery Meets With Resistance**

8 March

[Room-Temperature Superconductor Discovery Meets With Resistance | Quanta Magazine](#)  
DOI <https://doi.org/10.1038/s41586-023-05742-0>

### **Solid natural gas: An avenue to a safer, cleaner and brighter future (Gas Hydrates)**

9 March

[Solid natural gas: An avenue to a safer, cleaner and brighter future \(techxplore.com\)](#)  
DOI: [10.1039/D2EE01968J](https://doi.org/10.1039/D2EE01968J)

### **A safe synthesis of hydrogen peroxide inspired by nature**

9 March

[A safe synthesis of hydrogen peroxide inspired by nature \(phys.org\)](#)  
DOI: [10.1021/jacs.2c13149](https://doi.org/10.1021/jacs.2c13149)

### **Researchers Unveil New Platform for Catalytic Syngas Conversion**

9 March

[Researchers Unveil New Platform for Catalytic Syngas Conversion \(scitechdaily.com\)](#)  
DOI: [10.1016/j.chempr.2023.01.004](https://doi.org/10.1016/j.chempr.2023.01.004)

### **Embedding Peptides into Synthetic Polymers: Radical Ring-Opening Copolymerization of Cyclic Peptides | Journal of the American Chemical Society**

10 March

<https://pubs.acs.org/doi/10.1021/jacs.2c12517>  
<https://doi.org/10.1021/jacs.2c12517>

### **Physicists explore mysteries of strange metals**

11 March

[Physicists explore mysteries of strange metals](#)  
DOI: [10.1126/science.abc4787](https://doi.org/10.1126/science.abc4787)

## Scientists twist chemical bonds beyond their limits - Durham University

6 March

[Scientists twist chemical bonds beyond their limits - Durham University](#)

## New biosensor reveals activity of elusive metal that's essential for life

9 March

<https://phys.org/news/2023-03-biosensor-reveals-elusive-metal-essential.html>

DOI: [10.1073/pnas.2212723119](https://doi.org/10.1073/pnas.2212723119)

## Scientists reveal 'magic boron clusters' on monolayer borophene

9 March

[Scientists reveal 'magic boron clusters' on monolayer borophene \(phys.org\)](#)

DOI: [10.1073/pnas.2215131120](https://doi.org/10.1073/pnas.2215131120)

DOI: [10.1073/pnas.2215131120](https://doi.org/10.1073/pnas.2215131120)

## Fluid mixing enables scalable manufacturing of soft polymer structures

10 March

[Fluid mixing enables scalable manufacturing of soft polymer structures \(phys.org\)](#)

DOI: [10.1002/adma.202211438](https://doi.org/10.1002/adma.202211438)

## What is Ceramic Nanotechnology?

8 March

[What is Ceramic Nanotechnology? \(azonano.com\)](#)

## General Strategy for Incorporation of Functional Group Handles into Covalent Organic Frameworks via the Ugi Reaction | Journal of the American Chemical Society

9 March

[General Strategy for Incorporation of Functional Group Handles into Covalent Organic Frameworks via the Ugi Reaction | Journal of the American Chemical Society \(acs.org\)](#)

<https://doi.org/10.1021/jacs.2c12440>

## Scientists identify substance that may have sparked life on Earth

10 March

[Scientists identify substance that may have sparked life on Earth \(phys.org\)](#)

DOI: [10.1126/sciadv.abq1990](https://doi.org/10.1126/sciadv.abq1990). [www.science.org/doi/10.1126/sciadv.abq1990](http://www.science.org/doi/10.1126/sciadv.abq1990)

## Amgen to scale back plan for €1bn Waterford campus | Business Post

12 March

[Amgen to scale back plan for €1bn Waterford campus | Business Post](#)

## Company aiming to create oxygen on moon finds process to make steel plants cleaner

12 March

[Company aiming to create oxygen on moon finds process to make steel plants cleaner | The Times of Israel](#)

## Tuning thermoelectric materials for efficient power generation

9 March

[Tuning thermoelectric materials for efficient power generation \(techxplore.com\)](#)

DOI: [10.1002/aenm.202204321](https://doi.org/10.1002/aenm.202204321)

## Nickel substituted polyoxometalates in layered double hydroxides as metal-based nanomaterial of POM-LDH for green catalysis effects | Scientific Reports

13 March

<https://www.nature.com/articles/s41598-023-31356-7>

DOI <https://doi.org/10.1038/s41598-023-31356-7>

## **Releasing Valuable Plant Fibers From Their Lignin Prison**

13 March

[Releasing Valuable Plant Fibers From Their Lignin Prison | Technology Networks](#)

doi:[10.1038/s41564-023-01336-8](https://doi.org/10.1038/s41564-023-01336-8)

## **A step forward in the quest to replace silicon with 2D chips**

8 March

[A step forward in the quest to replace silicon with 2D chips \(techxplore.com\)](#)

DOI: [10.1103/PhysRevLett.130.087001](https://doi.org/10.1103/PhysRevLett.130.087001)

## **European Commission awards €7.7 million to mechanochemistry project**

16 February

[EC awards €7.7 million to mechanochemistry project \(europeanpharmaceuticalreview.com\)](#)

## **Study identifies a new synthesis technique to attain monolayer honeycomb SiC**

13 March

[Study identifies a new synthesis technique to attain monolayer honeycomb SiC \(phys.org\)](#)

DOI: [10.1103/PhysRevLett.130.076203](https://doi.org/10.1103/PhysRevLett.130.076203)

## **Engineering Metal–Organic Frameworks for Selective Separation of Hexane Isomers Using 3-Dimensional Linkers | Journal of the American Chemical Society**

10 March

<https://pubs.acs.org/doi/10.1021/jacs.2c13715>

<https://doi.org/10.1021/jacs.2c13715>

## **Up to 1,000,000 Times Faster: A Switch Made From a Single Molecule**

12 March

[Up to 1,000,000 Times Faster: A Switch Made From a Single Molecule \(scitechdaily.com\)](#)

DOI: [10.1103/PhysRevLett.130.106204](https://doi.org/10.1103/PhysRevLett.130.106204)

## **Bottom-Up Synthesis of Covalent Organic Frameworks with Quasi-Three-Dimensional Integrated Architecture via Interlayer Cross-Linking | Journal of the American Chemical Society**

12 March

[Bottom-Up Synthesis of Covalent Organic Frameworks with Quasi-Three-Dimensional Integrated Architecture via Interlayer Cross-Linking | Journal of the American Chemical Society \(acs.org\)](#)

<https://doi.org/10.1021/jacs.3c00550>

## **Shape and Dynamic Nature of Carbon-Based Molecules Are Different Than Scientists Thought**

14 March

<https://scitechdaily.com/shape-and-dynamic-nature-of-carbon-based-molecules-are-different-than-scientists-thought>

DOI: [10.1038/s41557-023-01156-7](https://doi.org/10.1038/s41557-023-01156-7)

## **The Curious Etymology Of The Elements | Hackaday** (Interesting video on origin of element names)

13 March

[The Curious Etymology Of The Elements | Hackaday](#)

### **MXene interlayers: New proton hydration structure determined**

13 March

[MXene interlayers: New proton hydration structure determined \(phys.org\)](#)

DOI: [10.1038/s41467-023-36842-0](https://doi.org/10.1038/s41467-023-36842-0)

### **Covalent Organic Framework as a Metal-Free Photocatalyst for Dye Degradation and Radioactive Iodine Adsorption | Langmuir**

11 March

<https://pubs.acs.org/doi/10.1021/acs.langmuir.2c03379>

<https://doi.org/10.1021/acs.langmuir.2c03379>

### **Homogeneous Catalysis for the Conversion of CO<sub>2</sub>, CO, CH<sub>3</sub>OH, and CH<sub>4</sub> to C<sub>2</sub>+ Chemicals via C–C Bond Formation | ACS Catalysis**

13 March

[Homogeneous Catalysis for the Conversion of CO<sub>2</sub>, CO, CH<sub>3</sub>OH, and CH<sub>4</sub> to C<sub>2</sub>+ Chemicals via C–C Bond Formation | ACS Catalysis](#)

<https://doi.org/10.1021/acscatal.2c05517>

### **Nanoarchitecture factors of solid electrolyte interphase formation via 3D nano-rheology microscopy and surface force-distance spectroscopy | Nature Communications**

10 March

<https://www.nature.com/articles/s41467-023-37033-7>

DOI <https://doi.org/10.1038/s41467-023-37033-7>

### **MOF-Based 3D Ion-Conducting Network Enables High-Voltage All-Solid-State Lithium Metal Batteries at Room Temperature | ACS Materials Letters**

13 March

[MOF-Based 3D Ion-Conducting Network Enables High-Voltage All-Solid-State Lithium Metal Batteries at Room Temperature | ACS Materials Letters](#)

<https://doi.org/10.1021/acsmaterialslett.3c00077>

### **Too hot to handle: Study tests the thermal conductivity of metal organic frameworks**

13 March

<https://phys.org/news/2023-03-hot-thermal-metal-frameworks.html>

DOI: [10.1038/s41524-022-00961-x](https://doi.org/10.1038/s41524-022-00961-x)

### **Hidden Danger in Your Groundwater? Widely Used Chemical Linked to 500% Increased Risk of Parkinson's - Neuroscience News**

14 March

<https://neurosciencenews.com/chemical-tce-parkinsons-22788>

### **Breakthrough discovery in materials science challenges current understanding of photoemission**

14 March

<https://phys.org/news/2023-03-breakthrough-discovery-materials-science-current.html>

DOI: [10.1038/s41586-023-05900-4](https://doi.org/10.1038/s41586-023-05900-4)

## **Quantum chemistry simulations on a quantum computer**

14 March

<https://phys.org/news/2023-03-quantum-chemistry-simulations.html>

DOI: [10.1126/sciadv.abo7484](https://doi.org/10.1126/sciadv.abo7484)

## **Cleaning up the atmosphere with quantum computing**

14 March

<https://phys.org/news/2023-03-atmosphere-quantum.html>

DOI: [10.1116/5.0137750](https://doi.org/10.1116/5.0137750)

## **More Efficient Carbon Capture: Cleaning Up the Atmosphere With Quantum Computing**

14 March

[More Efficient Carbon Capture: Cleaning Up the Atmosphere With Quantum Computing \(scitechdaily.com\)](https://www.scitechdaily.com/more-efficient-carbon-capture-cleaning-up-the-atmosphere-with-quantum-computing/)

DOI: [10.1116/5.0137750](https://doi.org/10.1116/5.0137750)

## **Study uncovers the fundamental mechanisms underlying the formation of polarons in 2D atomic crystals**

16 March

[Study uncovers the fundamental mechanisms underlying the formation of polarons in 2D atomic crystals \(phys.org\)](https://phys.org/news/2023-03-study-uncovers-the-fundamental-mechanisms-underlying-the-formation-of-polarons-in-2d-atomic-crystals/)

DOI: [10.1038/s41567-023-01953-4](https://doi.org/10.1038/s41567-023-01953-4)

## **First molecular images of olfaction open door to creating novel smells**

15 March

[First molecular images of olfaction open door to creating novel smells \(phys.org\)](https://phys.org/news/2023-03-first-molecular-images-of-olfaction-open-door-to-creating-novel-smells/)

DOI: [10.1038/s41586-023-05798-y](https://doi.org/10.1038/s41586-023-05798-y). [www.nature.com/articles/s41586-023-05798-y](https://www.nature.com/articles/s41586-023-05798-y)

## **Control of stereogenic oxygen in a helically chiral oxonium ion | Nature**

15 March

[Control of stereogenic oxygen in a helically chiral oxonium ion | Nature](https://www.nature.com/articles/s41586-023-05719-z)

DOI <https://doi.org/10.1038/s41586-023-05719-z>

## **Surface Reduced Manganese States as a Source of Oxygen Reduction Activity in BaMnO<sub>3</sub> - Hughes - Advanced Functional Materials - Wiley Online Library**

15 March

[Surface Reduced Manganese States as a Source of Oxygen Reduction Activity in BaMnO<sub>3</sub> - Hughes - Advanced Functional Materials - Wiley Online Library](https://onlinelibrary.wiley.com/doi/10.1002/adfm.202214883)

<https://doi.org/10.1002/adfm.202214883>

## **The Best Sources of Graphene**

14 March

[The Best Sources of Graphene \(azonano.com\)](https://www.azonano.com/the-best-sources-of-graphene/)

## **A method for chemically tailoring layered nanomaterials**

16 March

[A method for chemically tailoring layered nanomaterials \(phys.org\)](https://phys.org/news/2023-03-a-method-for-chemically-tailoring-layered-nanomaterials/)

DOI: [10.1126/science.add5901](https://doi.org/10.1126/science.add5901). [www.science.org/doi/10.1126/science.add5901](https://www.science.org/doi/10.1126/science.add5901)

## **Acidic graphene organocatalyst for the superior transformation of wastes into high-added-value chemicals | Nature Communications**

12 March 2023



<https://www.nature.com/articles/s41467-023-36602-0>

DOI <https://doi.org/10.1038/s41467-023-36602-0>

## **Self-driven laboratory speeds chemical discovery**

15 March

[Self-driven laboratory speeds chemical discovery \(phys.org\)](#)

DOI: [10.1038/s41467-023-37139-y](https://doi.org/10.1038/s41467-023-37139-y). [www.nature.com/articles/s41467-023-37139-y](https://www.nature.com/articles/s41467-023-37139-y)

## **Heterostrain and temperature-tuned twist between graphene/h-BN bilayers | Scientific Reports**

16 March

<https://www.nature.com/articles/s41598-023-31233-3>

DOI <https://doi.org/10.1038/s41598-023-31233-3>

## **Electroactive bacterium generates well-defined nanosized metal catalysts with remarkable water-splitting performance**

16 March

<https://phys.org/news/2023-03-electroactive-bacterium-generates-well-defined-nanosized.html>

DOI: [10.1021/acssuschemeng.2c06143](https://doi.org/10.1021/acssuschemeng.2c06143)

## **Scientists Warn: Common Cleaning Chemical Linked to 500% Increased Risk of Parkinson's Disease**

14 March

[Scientists Warn: Common Cleaning Chemical Linked to 500% Increased Risk of Parkinson's Disease \(scitechdaily.com\)](#)

DOI: [10.3233/JPD-225047](https://doi.org/10.3233/JPD-225047)

## **Chemical scissor-mediated structural editing of layered transition metal carbides | Science**

16 March

[Chemical scissor-mediated structural editing of layered transition metal carbides | Science](#)

DOI: [10.1126/science.add5901](https://doi.org/10.1126/science.add5901)

## **Unlocking the Mysteries of Quantum Materials: How Magnetism Sparks Unusual Electronic Order**

17 March

[Unlocking the Mysteries of Quantum Materials: How Magnetism Sparks Unusual Electronic Order \(scitechdaily.com\)](#)

DOI: [10.1038/s41567-023-01985-w](https://doi.org/10.1038/s41567-023-01985-w)

## **Unexpected Effect: Nanorippled Graphene Becomes a Powerful Catalyst**

16 March

[Unexpected Effect: Nanorippled Graphene Becomes a Powerful Catalyst \(scitechdaily.com\)](#)

DOI: [10.1073/pnas.2300481120](https://doi.org/10.1073/pnas.2300481120)

## **Toxic BPA-Like Chemicals Found To Contaminate Fresh Produce**

17 March

[Toxic BPA-Like Chemicals Found To Contaminate Fresh Produce | Technology Networks](#)

doi: [10.1021/acs.est.2c09390](https://doi.org/10.1021/acs.est.2c09390)

## **Light and milling balls for greener chemical processes**

14 March

[Light and milling balls for greener chemical processes \(phys.org\)](#)

[DOI: 10.1002/ange.202218719](#)

### **Carbon dioxide electrolysis as an alternative to coal**

17 March

[Carbon dioxide electrolysis as an alternative to coal \(techxplore.com\)](#)

[DOI: 10.1021/acssuschemeng.2c05539](#)

### **Identifying organic compounds with visible light**

17 March

<https://phys.org/news/2023-03-compounds-visible.html>

[DOI: 10.1021/acs.jpca.2c07955](#)

### **Novel catalyst for highly selective photoelectroreduction of carbon dioxide to ethanol**

17 March

[Novel catalyst for highly selective photoelectroreduction of carbon dioxide to ethanol \(phys.org\)](#)

[DOI: 10.1002/anie.202218664](#)

### **Electrochemical oxidative difunctionalization of diazo compounds with two different nucleophiles | Nature Communications**

17 March

[Electrochemical oxidative difunctionalization of diazo compounds with two different nucleophiles | Nature Communications](#)

DOI <https://doi.org/10.1038/s41467-023-37032-8>

### **Modular Access to meta-Substituted Benzenes via Mo-Catalyzed Intermolecular Deoxygenative Benzene Formation | Journal of the American Chemical Society**

17 March

[Modular Access to meta-Substituted Benzenes via Mo-Catalyzed Intermolecular Deoxygenative Benzene Formation | Journal of the American Chemical Society \(acs.org\)](#)

<https://doi.org/10.1021/jacs.3c01330>

### **Modular Access to meta-Substituted Benzenes via Mo-Catalyzed Intermolecular Deoxygenative Benzene Formation | Journal of the American Chemical Society**

17 March

[Modular Access to meta-Substituted Benzenes via Mo-Catalyzed Intermolecular Deoxygenative Benzene Formation | Journal of the American Chemical Society \(acs.org\)](#)

<https://doi.org/10.1021/jacs.3c01330>

### **Asymmetric Total Synthesis of Illisimonin A | Journal of the American Chemical Society**

16 March

<https://pubs.acs.org/doi/10.1021/jacs.3c01262>

<https://doi.org/10.1021/jacs.3c01262>

### **Durable superhydrophobic/superoleophilic melamine foam based on biomass-derived porous carbon and multi-walled carbon nanotube for oil/water separation | Scientific Reports**

18 March

[Durable superhydrophobic/superoleophilic melamine foam based on biomass-derived porous carbon and multi-walled carbon nanotube for oil/water separation | Scientific Reports \(nature.com\)](#)

DOI <https://doi.org/10.1038/s41598-023-31770-x>

## **Structure–Activity Relationship Insights for Organophosphonate Hydrolysis at Ti(IV) Active Sites in Metal–Organic Frameworks | Journal of the American Chemical Society**

15 March

[Structure–Activity Relationship Insights for Organophosphonate Hydrolysis at Ti\(IV\) Active Sites in Metal–Organic Frameworks | Journal of the American Chemical Society \(acs.org\)](#)

<https://doi.org/10.1021/jacs.2c13887>

## **Unexpected Effect: Nanorippled Graphene Becomes a Powerful Catalyst**

16 March

<https://scitechdaily.com/unexpected-effect-nanorippled-graphene-becomes-a-powerful-catalyst>

DOI: [10.1073/pnas.2300481120](https://doi.org/10.1073/pnas.2300481120)

## **Strife at eLife: inside a journal’s quest to upend science publishing**

17 March

[Strife at eLife: inside a journal’s quest to upend science publishing \(nature.com\)](#)

doi: <https://doi.org/10.1038/d41586-023-00831-6>

## **Modular Diazo Compound for the Bioreversible Late-Stage Modification of Proteins | Journal of the American Chemical Society**

15 March

[Modular Diazo Compound for the Bioreversible Late-Stage Modification of Proteins | Journal of the American Chemical Society \(acs.org\)](#)

<https://doi.org/10.1021/jacs.2c11325>

## **Chemistry to Circular Economy | Research | Queen's University Belfast**

19 March (Received)

[Chemistry to Circular Economy | Research | Queen's University Belfast \(qub.ac.uk\)](#)

## **“Cosmic Concrete” Made From Extra-Terrestrial Dust Is Twice As Strong as Regular Concrete**

18 March

[“Cosmic Concrete” Made From Extra-Terrestrial Dust Is Twice As Strong as Regular Concrete \(scitechdaily.com\)](#)

DOI: [10.1515/eng-2022-0390](https://doi.org/10.1515/eng-2022-0390)

## **The Future of Recycling? New Catalyst Transforms Waste into Valuable and Eco-Friendly Products**

18 March

[The Future of Recycling? New Catalyst Transforms Waste into Valuable and Eco-Friendly Products \(scitechdaily.com\)](#)

DOI: [10.1021/jacs.2c11056](https://doi.org/10.1021/jacs.2c11056)

## **Strong synergy between gold nanoparticles and cobalt porphyrin induces highly efficient photocatalytic hydrogen evolution | Nature Communications**

18 March

[Strong synergy between gold nanoparticles and cobalt porphyrin induces highly efficient photocatalytic hydrogen evolution | Nature Communications](#)

DOI <https://doi.org/10.1038/s41467-023-37271-9>

## **Switching Type I/Type II Reactions by Turning a Photoredox Catalyst into a Photo-Driven Artificial Metalloenzyme | ACS Catalysis**

16 March

[Switching Type I/Type II Reactions by Turning a Photoredox Catalyst into a Photo-Driven Artificial Metalloenzyme | ACS Catalysis](https://doi.org/10.1021/acscatal.2c05946)

<https://doi.org/10.1021/acscatal.2c05946>

## **Applications of Mass Spectrometry in Biopharmaceutical Analysis**

17 March

[Applications of Mass Spectrometry in Biopharmaceutical Analysis | Technology Networks](#)

## **A photocatalyst that can produce hydrogen peroxide from oxygen and water**

20 March

[A photocatalyst that can produce hydrogen peroxide from oxygen and water \(techxplore.com\)](#)

DOI: [10.1038/s41560-023-01218-7](https://doi.org/10.1038/s41560-023-01218-7)

## **The science behind dioxins, vinyl chloride, and proven remediations**

17 March

[The science behind dioxins, vinyl chloride, and proven remediations | CAS](#)

## **What Is Tesla's Mystery Magnet?**

17 March

[What Is Tesla's Mystery Magnet? - IEEE Spectrum](#)

## **DNA origami boosts electrochemical biosensor performance**

14 March

[DNA origami boosts electrochemical biosensor performance \(phys.org\)](#)

DOI: [10.1021/acssensors.2c02469](https://doi.org/10.1021/acssensors.2c02469)

## **ECHA Updates Recommendations to Improve REACH Registrations - REACHblog™**

1 March

[ECHA Updates Recommendations to Improve REACH Registrations | REACHblog™](#)

## **Gold Nanoparticle Catalyst Helps Turn Plastic Waste Into Useful Compounds**

20 March

[Gold Nanoparticle Catalyst Helps Turn Plastic Waste Into Useful Compounds \(scitechdaily.com\)](#)

DOI: [10.1021/jacs.2c12311](https://doi.org/10.1021/jacs.2c12311)

## **Trends and Prospects of Bulk and Single - Atom Catalysts for the Oxygen Evolution Reaction - Iqbal - Advanced Energy Materials - Wiley Online Library**

20 March

[Trends and Prospects of Bulk and Single-Atom Catalysts for the Oxygen Evolution Reaction - Iqbal - Advanced Energy Materials - Wiley Online Library](https://doi.org/10.1002/aenm.202203913)

<https://doi.org/10.1002/aenm.202203913>

## **CHEMISTRY TO CIRCULAR ECONOMY – Case Studies**

[Chemistry to Circular Economy | Research | Queen's University Belfast \(qub.ac.uk\)](#)

## Researchers reveal structure-property relationship of two-dimensional amorphous carbon

14 March

[Researchers reveal structure-property relationship of two-dimensional amorphous carbon \(phys.org\)](#)

DOI: [10.1038/s41586-022-05617-w](https://doi.org/10.1038/s41586-022-05617-w)

## Landmark Solid Material Changes How We Use Sunlight

20 March

<https://scitechdaily.com/landmark-solid-material-changes-how-we-use-sunlight>

DOI: [10.1039/D2TC04578H](https://doi.org/10.1039/D2TC04578H)

## US award could put Skibbereen scientist in line for Nobel Prize | Southern Star

21 March

[US award could put Skibbereen scientist in line for Nobel Prize | Southern Star](#)

## Researchers separate cotton from polyester in blended fabric

20 March

[Researchers separate cotton from polyester in blended fabric \(phys.org\)](#)

DOI: [10.1016/j.resenv.2023.100118](https://doi.org/10.1016/j.resenv.2023.100118)

## How not to chatter like a toddler when giving a scientific presentation

21 March

[How not to chatter like a toddler when giving a scientific presentation \(nature.com\)](#)

DOI: <https://doi.org/10.1038/d41586-023-00832-5>

## New catalyst helps turn plastic waste into useful organosilane compounds

20 March

[New catalyst helps turn plastic waste into useful organosilane compounds \(phys.org\)](#)

DOI: [10.1021/jacs.2c12311](https://doi.org/10.1021/jacs.2c12311)

## 'Inkable' nanomaterial promises big benefits for bendable electronics

21 March

['Inkable' nanomaterial promises big benefits for bendable electronics \(phys.org\)](#)

DOI: [10.1021/acs.chemrev.2c00456](https://doi.org/10.1021/acs.chemrev.2c00456)

## PhD researchers call for recognition as 'workers'

26 March

[PhD researchers call for recognition as 'workers' \(rte.ie\)](#)

## ECHA Identifies Certain Brominated Flame Retardants as Candidates for Restriction | REACHblog™

21 March

[ECHA Identifies Certain Brominated Flame Retardants as Candidates for Restriction | REACHblog™](#)

## Synthesis of an aqueous, air-stable, superconducting 1T' -WS2 monolayer ink | Science Advances

22 March

[Synthesis of an aqueous, air-stable, superconducting 1T'-WS2 monolayer ink | Science Advances](#)

DOI: [10.1126/sciadv.add6167](https://doi.org/10.1126/sciadv.add6167)

## **Chemists synthesize and characterize novel helically chiral oxonium ion with a stereogenic oxygen atom center**

22 March

[Chemists synthesize and characterize novel helically chiral oxonium ion with a stereogenic oxygen atom center \(phys.org\)](#)

[DOI: 10.1038/s41586-023-05719-z](#)

## **Synthesis and Reactivity of an Anti-van't Hoff/Le Bel Compound with a Planar Tetracoordinate Silicon(II) Atom | Journal of the American Chemical Society**

21 March

[Synthesis and Reactivity of an Anti-van't Hoff/Le Bel Compound with a Planar Tetracoordinate Silicon\(II\) Atom | Journal of the American Chemical Society \(acs.org\)](#)

<https://doi.org/10.1021/jacs.3c00722>

## **Researchers develop portable color-changing food spoilage sensor**

21 March

[Researchers develop portable color-changing food spoilage sensor \(phys.org\)](#)

[DOI: 10.1016/j.foodchem.2022.134317](#)

## **UBC engineers find permanent solution for removing 'forever chemicals' from drinking water | Globalnews.ca**

22 March

[UBC engineers find permanent solution for removing 'forever chemicals' from drinking water | Globalnews.ca](#)

## **Excess mercury in atmosphere found to be coming from the world's oceans**

22 March

[Excess mercury in atmosphere found to be coming from the world's oceans \(phys.org\)](#)

[DOI: 10.1016/j.oneear.2023.02.004](#)

## **Using chemical exfoliation to produce superconducting tungsten disulfide ink**

23 March

[Using chemical exfoliation to produce superconducting tungsten disulfide ink \(phys.org\)](#)

[DOI: 10.1126/sciadv.add6167](#)

## **How do superconductors work? A physicist explains what it means to have resistance-free electricity**

24 March

[How do superconductors work? A physicist explains what it means to have resistance-free electricity \(theconversation.com\)](#)

## **Using high-precision quantum chemistry to study super-efficient energy transfer in photosynthesis**

24 March

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## **A Crystalline Monomeric Phosphaborene | Journal of the American Chemical Society**

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### Protein with anti-aging action combats inflammation and avoids death of neurons

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### Knife that ‘smells tumours’ can detect womb cancer within seconds

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16 March

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## A shape-shifting nuclease unravels structured RNA

23 February

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20 March

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20 March

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[Molecular Compounds in Maternal Blood Linked to Autism Risk | Technology Networks](https://www.technology-networks.com/news/2023/04/13/molecular-compounds-in-maternal-blood-linked-to-autism-risk/)

DOI: [10.1038/s41380-023-02051-w](https://doi.org/10.1038/s41380-023-02051-w)

## **Plastic Particles Can Alter Sex Hormones**

26 April

[Gene Therapy Improvements Made Through Adeno-Associated Virus Vector Bioengineering | Technology Networks](#)

doi: [10.1186/s12989-023-00525-x](https://doi.org/10.1186/s12989-023-00525-x)

## **Safer Blood Thinners: Innovative Treatment Prevents Blood Clots Without Increased Bleeding Risk**

26 April

[Safer Blood Thinners: Innovative Treatment Prevents Blood Clots Without Increased Bleeding Risk \(scitechdaily.com\)](#)

<https://www.nature.com/articles/s41467-023-37709-0>

## **New Study: Common Artificial Sweetener Has an “Unexpected Effect” on the Immune System**

25 April

[New Study: Common Artificial Sweetener Has an “Unexpected Effect” on the Immune System \(scitechdaily.com\)](#)

<https://www.nature.com/articles/s41586-023-05801-6>

## **Computational approaches streamlining drug discovery | Nature**

26 April

[Computational approaches streamlining drug discovery | Nature](#)

DOI <https://doi.org/10.1038/s41586-023-05905-z>

## **Revolutionizing the Protein Landscape: MIT Researchers Harness AI to Engineer Unprecedented Bio-Molecules – MarkTechPost**

25 April

[Revolutionizing the Protein Landscape: MIT Researchers Harness AI to Engineer Unprecedented Bio-Molecules - MarkTechPost](#)

## **Remodeling qPCR as a Tool for Molecular Diagnostics**

27 April

[Remodeling qPCR as a Tool for Molecular Diagnostics Webinar | Technology Networks](#)

## **Active ingredient vs excipient debate for nanomedicines | Nature Nanotechnology**

27 April

[Active ingredient vs excipient debate for nanomedicines | Nature Nanotechnology](#)

DOI <https://doi.org/10.1038/s41565-023-01371-w>

## **Newly discovered electrical activity within cells could change the way researchers think about biological chemistry**

28 April

[Newly discovered electrical activity within cells could change the way researchers think about biological chemistry \(phys.org\)](#)

<https://dx.doi.org/10.1016/j.chempr.2023.04.001>

## **Caltech’s Enzyme Discovery Enables New Mechanism for Crossing the Blood–Brain Barrier**

29 April

[Caltech’s Enzyme Discovery Enables New Mechanism for Crossing the Blood–Brain Barrier \(scitechdaily.com\)](#)

<https://doi.org/10.1126/sciadv.adg6618>

## **No Sweat: Superhydrophobic Biosensor Reads Your Body's Invisible Signals**

29 April

[No Sweat: Superhydrophobic Biosensor Reads Your Body's Invisible Signals \(scitechdaily.com\)  
https://doi.org/10.1021/acsnano.2c11267](https://doi.org/10.1021/acsnano.2c11267)

## **“Mirror Image” Molecules Identify Potential Cancer Drug Targets**

28 April

[“Mirror Image” Molecules Identify Potential Cancer Drug Targets | Technology Networks  
https://doi.org/10.1016/j.molcel.2023.03.026](https://doi.org/10.1016/j.molcel.2023.03.026)

## **Capsule Developed That May One Day Replace Insulin Injections**

20 April

[Capsule Developed That May One Day Replace Insulin Injections | Technology Networks  
DOI: 10.1016/j.bioadv.2023.213368](https://doi.org/10.1016/j.bioadv.2023.213368)

## **Ingestible “Electroceutical” Capsule Boosts Appetite Hormone Levels**

26 April

[Ingestible “Electroceutical” Capsule Boosts Appetite Hormone Levels | Technology Networks  
http://dx.doi.org/10.1126/scirobotics.ade9676](http://dx.doi.org/10.1126/scirobotics.ade9676)

## **A Vaccine for Breast Cancer?**

29 April

[A Vaccine for Breast Cancer? | RealClearScience](#)

## **One small molecule may transform osteoporosis treatment**

27 April

[One small molecule may transform osteoporosis treatment | Drug Discovery News](#)

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## ChemistryViews - The Magazine of Chemistry Europe

### **Chemistry Views Monthly Newsletter**

February

[ChemistryViews - The Magazine of Chemistry Europe](#)

### **Chemistry Views: Monthly Organic Alert**

14 February

[Monthly Organic Alert \(wiley.com\)](#)

### **Chemistry Views**

16 February

[Weekly Alert \(wiley.com\)](#)

### **Chemistry Views: Monthly Nanotechnology Alert**

21 February

[Monthly Nanotechnology Alert \(wiley.com\)](#)

### **Chemistry Views**

23 February

[Weekly Alert \(wiley.com\)](#)

### **ChemistryViews – Monthly Pharma and Healthcare Alert**

22 February

[Monthly Pharma and Healthcare Alert \(wiley.com\)](#)

### **ChemistryViews – Monthly Catalysis Alerts**

26 February

[Monthly Catalysis Alert \(wiley.com\)](#)

### **Chemistry Views – Weekly Alert**

3 March

[Weekly Alert \(wiley.com\)](#)

### **ChemistryViews Monthly Newsletter**

7 March

[Monthly Newsletter \(wiley.com\)](#)

### **Chemistry Views Weekly Alert**

9 March

[Weekly Alert \(wiley.com\)](#)

### **Chemistry Views Monthly Organic Alert**

14 March

[Monthly Organic Alert \(wiley.com\)](#)

### **Chemical Views Weekly Alert**

16 March

[Weekly Alert \(wiley.com\)](#)

### **Chemistry Views Monthly Nanotechnology Alert**

20 March

[Monthly Nanotechnology Alert \(wiley.com\)](#)

### **Chemistry Views Weekly Alert**

23 March

[Weekly Alert \(wiley.com\)](#)

### **Chemical Views Monthly Catalysis Alert**

23 March

[Monthly Catalysis Alert \(wiley.com\)](#)

### **Chemical Views monthly Pharma and Healthcare Alert**

27 March

[Monthly Pharma and Healthcare Alert \(wiley.com\)](#)

### **Chemistry Views Monthly Newsletter**

4 April

[Monthly Newsletter \(wiley.com\)](#)





## **OPCW'S Centre for Chemistry and Technology opened**

EuChemS President Floris Rutjes was present at the inauguration ceremony of the Organisation for the Prohibition of Chemical Weapons (OPCW)'s Centre for Chemistry and Technology. EuChemS was one of the organisations providing funding for the realisation of the centre.

Read more here: [OPCW'S Centre for Chemistry and Technology opened - EuChemS magazine](#)

## **EuChemS to participate in IUPAC CHAINS 2023**

The International Union of Pure and Applied Chemistry will hold the 11th edition of its CHAINS World Chemistry Congress in the Hague, Netherlands this year. EuChemS will participate in the congress.

Read more here: [EuChemS to participate in IUPAC CHAINS 2023 - EuChemS magazine](#)

## **Transition pathway for the chemical industry: EuChemS contributes to Commission's task force on Circularity.**

The task force met for the first time on 24 April. At the meeting, EuChemS introduced its initiatives related to circularity and examined their potential to contribute to the goals of the task force.

Read more here: [EuChemS contributes to Commission's task force on Circularity - EuChemS magazine](#)

## **European Conference on Computational and Theoretical Chemistry (CompChem 2023) 27/08/2023 - 31/08/2023 Thessaloniki, Greece**

The European Conference on Computational and Theoretical Chemistry (EuChemS CompChem), established in 1994, and previously known as EUACO-CTC, is a platform for scientists in academia, industry and governmental institutions to showcase recent advances, developments and trends in molecular modelling, simulation, and related areas. The EuCo series of conferences is organized by the EuChemS Division of Computational and Theoretical Chemistry (DCTC). The 14th EuCo-CTC, now renamed as EuChemS CompChem 2023, will take place as a physical meeting in Thessaloniki (Greece) on August 27-31, 2023.

More details here: [European Conference on Computational and Theoretical Chemistry \(CompChem 2023\) - EuChemS magazine](#)

## EuChemS at Zero Pollution Stakeholder Conference

Dec 15, 2022

The [Zero Pollution Stakeholder Conference](#) was held in Brussels at the European Commission's Berlaymont Building on 14 December. Representatives of the European Chemical Society, Executive Board member Ioannis Katsogiannis and Secretary General Nineta Hrastelj were invited to the conference, as EuChemS is a member of the [Zero Pollution Stakeholder Platform](#).

## Open calls:

- [EuChemS Gold Medal 2024](#)  
19 September 2022 – 19 December 2022
- [EuChemS Lecture Award 2022](#)  
19 September 2022 – 19 December 2022
- [EuChemS Award for Service 2022](#)  
19 September 2022 – 19 December 2022
- [EuChemS Historical Landmarks 2022](#)  
19 September 2022 – 19 December 2022

## EuChemS at High Level Roundtable on Sustainable Chemicals

The 4th meeting of the High Level Roundtable on the implementation of the Chemicals Strategy was held on 1 February. EuChemS, an invited stakeholder, contributed by raising an open question on science, knowledge and education's role in the Safe and Sustainable by Design (SSbD) principle.

Marton Kottmayer,

EuChemS February 3, 2023

More details here: [EuChemS at High Level Roundtable on Sustainable Chemicals - EuChemS magazine](#)

## Science & Truth – Special Topic (Incl. Peritia Project)

This topic was initially intended to draw attention to papers in the scientific press and in the general press about reproducibility, accuracy, retractions and fake academic papers by both journals and authors. I have posted some such articles in previous Issues of Irish Chemical News. It seems there is increasing concerns about these topics in feeds I receive regularly, so I decided to have a special topic on the issues being raised. I titled it Science and Truth. It is intended to be presented as an occasional topic rather than a topic in each Issue of ICN.

With a word like “Truth” in the title we are immediately entering the subject of philosophy which has its own language and many of these words have definitions chemists may not be familiar with, so I added some definitions at the end of the article.

By chance during gestation of this special topic I heard about Horizon 2020 project **PERITIA** with the subtitle **Policy, Expertise and Trust**. Peritia had a predecessor project “The **ALLEA Working Group Truth, Trust and Expertise**, which interrogated and explored current and past dynamics of public trust in expertise and the contested norms of what constitutes truth, facts and evidence in scientific research and beyond. The group was inspired by the initiative of the British Academy and developed its activities during 2017-2019. This was per-Covid Pandemic, where we saw so much denial and misinformation disseminated. Peritia’s endeavours are timely and will make a significant contribution to this subject of trust, trust, wordiness and expertise. The last academic conference took in UCD in late March which I attended. The final wrap will be in May in Brussels and reports will be published in due course.

In the last two weeks of March a revolution unfolded in AI with the launch of ChatGPT by Open AI. This took the world and especially Google and Microsoft by surprise who quickly have tried to catch up. This technology is potentially very harmful if misused but also can have great potential for good such as drug discovery. It has been demonstrated that this technology can write fake papers with reference which look legitimate, and this has ramifications for scientific truth. I have in this Issue produced a second special topic covering the extensive publications resulting from the launch of ChatGPT.

Given its relevance, immediately below is a summary of what Peritia is and its history.



PERITIA is an EU-funded project that investigates public trust in expertise. Our multi-disciplinary team seeks to help citizens and policymakers understand trust in science and identify trustworthy expertise. We aim to enhance trust in a better democratic governance for the future of Europe.

PERITIA’s key hypothesis is that affective and normative factors play a central role in decisions to trust. This applies even in cases where judgements of trustworthiness may seem to be grounded in epistemic considerations, such as professional reputation, reliability or objectivity. Our team explores this hypothesis conceptually and tests it empirically.

The project uses climate change and climate science as a test case. Ultimately, it seeks to design and provide practical tools and indicators which can be applied to measure and establish the trustworthiness of the agents and institutions involved in social and political decision-making.

## Why Trust Experts

Experts have been omnipresent since the onset of the COVID-19 pandemic, but why should we trust them? And why not? The video “Why Trust Experts?” asks us to reflect on the role expertise plays in our daily lives. We have all seen the involvement experts have had in advising citizens and politicians during the pandemic. Now is an opportune time for us to ask questions about the nature of trust in expertise. How does trust in experts’ function? How is trust in science related to trust in media? Why is trust in expertise important for democracies? How can we learn to trust trustworthy experts?



In March UCD hosted the final PERITIA academic conference under the leadership of Professor Maria Baghramian. Currently, she co-ordinates the Horizon 2020 research project Policy, Expertise and Trust in Action (PERiTIA)

### **Rethinking Policy, Expertise and Trust**

**23–25 March 2023**

University College Dublin, Ireland

### **PERITIA's Final Academic Conference**

In May PERITIA's [closing event](#) in Brussels will be on 4–5 May 2023 at the European Parliament in Brussels, the **UCD O'Brien Centre for Science** hosted the project's [final academic conference](#). A breadth of topics encompassed by PERITIA's investigation of public trust in expertise was examined by scholars from a wide range of disciplines. Researchers from the fields of **philosophy, sociology, political science, media studies, public policy** and **science communication** presented their most recent findings on questions related to key themes of the project, including:

- The scope and nature of public (dis)trust
- Factors contributing to (dis)trust toward experts
- Critical assessments of the role of experts in policy decisions.
- The role of social media in establishing (dis)trust.
- The key indicators of experts' trustworthiness.
- Psychological, affective, and cognitive mechanisms relevant to (dis)trust.
- Empirical studies of trust and trustworthiness.

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**Here follows an interview with Professor Maria by science journalist Nat das Neves Rodrigues Lopes along with background on the ALL European Academies (ALLEA) from 2017, resulting in a Horizon 2020 grant of €3 million for the PERITIA project**

[Prof. Maria Baghramian: Policy, Expertise and Trust in Action – Crastina](#)

Prof. Maria Baghramian: Policy, Expertise and Trust in Action

*Maria Baghramian is a Full Professor of Philosophy at University College Dublin and a member of the Royal Irish Academy. She was the Principal Investigator, with the [astrophysicist Luke Drury](#) as a co-investigator, of the Irish Research Council project [When Experts Disagree](#). Currently, she co-ordinates the Horizon 2020 research project [Policy, Expertise and Trust in Action](#) (PERITIA). The project received a grant of 3 million euro from the European Commission and will be running from 2020-2023.*

**Thank you very much for accepting this interview, Prof. Baghramian. To give the readers some context, you are part of the ALLEA (All European Academies) working group that produced a number of reports on “Truth, Trust and Expertise”. Could you please tell me what prompted this report? Why was it important to look into this issue, and why now?**

The “Truth, Trust and Expertise” (TTE) working group, a joint initiative of the British Academy and ALLEA, began its work in **2017** when The Oxford English Dictionary had designated “post-truth” as the word of the year and soon after Michael Gove, a pro-Brexit British minister, had claimed that “*the British people have had enough of the experts*”, while Donald Trump had announced that he had “*always wanted to say this... the experts are terrible*”.

There was a sense in the academia, one that has not yet abated, that the very idea of truth and knowledge were under attack and that some concrete counter-measures were needed. Our response to what is often characterised as a crisis of both truth and trust, was to produce three [working papers](#)\* on themes of trust, trustworthiness in science and the role of social media in enhancing or undermining truth and trust.

\* **TRUTH, TRUST AND EXPERTISE (ALLEA)** [Truth, Trust and Expertise - ALLEA](#) and video [\(185\) Is there a loss of trust\(worthiness\) in science? - YouTube](#)

### **What would you say is the main finding of this report?**

As it befits their subject matter, the reports were detailed and nuanced. The TTE working group started its deliberations by arguing that trust involves deferring to others, with some level of confidence, on matters that are beyond our knowledge or power. Trust is essential to our social and interpersonal interactions, but it also involves a risk because in trusting we make ourselves vulnerable to betrayal. Establishing and renewing trust in science are of paramount importance in two distinct ways: trust within science gives researchers the confidence to rely on each other's results and methods and to collaborate more effectively.

Warranted trust in science by the general public is also needed because science it is increasingly playing a central role in policy decisions, for instance on matters related to health, the environment, and food production. Trust in the practices and the findings of scientists by the general public and policy makers is crucial for implementing public policies informed by scientific advice. This dual requirement of trust in science is nowhere more obvious than in the post-Covid19 world, where scientists are working at great speed and under conditions of uncertainty to combat the virus and policy makers are proposing draconian public measures based on expert advice.

The TTE working group also investigated the role of the media, particularly the new forms of it, in the changing patterns of trust and distrust and how radical shifts in the context and modes of communication have undermined traditional patterns of trust. Our new project, PErTiA, with participation from members of the original working group and many others, is following these topics in greater detail. One event that may be of interest to your readers is a major online [conference](#) on Trust in Expertise in a Changing Media Context, took place in March 18th and 19th, 2021.



*The “Truth, Trust and Expertise” (TTE) working group at their initial meeting.*

**I noticed the report makes a point of distinguishing between and highlighting both *trust* and *trustworthiness*. Would you say these are different things, and why is it important that we consider them separately?**

The question of who we should trust is often posed as the main dilemma facing us in times of social crisis and extreme upheaval. But the answer to the question “who to trust?” is quite simple: we should only trust the trustworthy and distrust the untrustworthy. Both misplaced trust and unwarranted distrust can pose serious societal and interpersonal problems. The real challenge then is to find measures and criteria for who is worthy of the risk of trust. We should not place trust where none is warranted but, at the same time, we need to avoid what Baroness Onora O’Neill, the co-chair of TTE, has called the Cassandra Problem: the problem of misplaced distrust where, as in the case of vaccine hesitancy or climate scepticism, an attitude of distrust can lead to a great deal of harm. The question “who is trustworthy?” is of course complex and the response will vary with contexts, but fortunately, when it comes to science and expertise, there are some clear criteria that can help us distinguish the trustworthy scientists from the untrustworthy.



*The “Truth, Trust and Expertise” (TTE) working group during one of the workshops that created the final reports.*

Should society trust expertise and in particular, science? Do you see trust in science as a benefit or a threat to democracy? Are there lines that separate these two things that society should be wary of crossing? Scientific expertise is increasingly woven into the fabric of our lives. Science, indirectly through technology and directly through policy advice, shapes our life choices. Despite a common misperception, **scientists and medical doctors** are among the most trusted professionals. Experts are deemed trustworthy based on their track record of competence and training, as well as their honesty and integrity. Good will is a further important constraint on the trustworthy scientist. Trusted experts are expected to ensure, to the best of their abilities, that their work and advice leads to more good than harm.

Science impinges on politics directly when it becomes an instrument of policy decisions. It is the use made of science that can be of benefit or a threat to democratic values. So, I don't think science itself can be anti-democratic, but how it is supported, and its results put into effect, may be supportive of or detrimental to democratic values. I would also like to add that the ideals of science are in themselves a good model of how democracy can be conducted. Science at its best, is meritocratic and ready to admit its fallibility. Its results are provisional and (self-)criticism is essential to its conduct. These core features of the scientific method, and they are also useful tools for democratic discourse.

**Personally, I think “Truth, Trust and Expertise” is a fascinating topic of great importance to society. I was glad to see that the report not only analyses the issue but also makes suggestions going forward. However, do you think this discussion is getting ‘stuck’ in academic circles? How do we bring these debates around trust and trustworthiness to mainstream discourse?**

I believe there are clear benefits to conducting purely academic studies of the ideas of trust, truth and expertise. Without a firm and clear grasp of these concepts, and the contour of the problems surrounding



them, we cannot have adequate resolutions of the crisis of truth and trust. Having said that, I think research on such momentous topics should not remain ‘stuck’ in academic circles and this is exactly what our new project, PErTiA, attempts to avoid. The project runs in three stages: the first focuses on theoretical questions about expertise and trust drawing on the work of philosophers, psychologists, sociologists and media experts. The second will start next year and relies on surveys and laboratory experiments to investigate how the general population across seven European countries thinks about trust in experts. The final phase is where we are hoping to establish a direct linkage between our theoretical and empirical findings and public discourse about trust in experts. To that end, we are organising encounters and open discussions between ordinary citizens, experts and policy makers through so-called mini publics or small scale citizen assemblies. In this way, we hope that our findings will be enhanced by the views of the general public and may also be directly of use to them.



*Group photo taken at the launch of the PErTiA H2020 Project in March 2020, taken at the Newman House, St Stephens Green, Dublin. Photograph*

*Nick Bradshaw.*

### **What do you think is the main challenge the science community faces today in attempting to earn people’s trust?**

Currently the greatest challenge to the science community I think is the spread of disinformation and conspiracy theories, aided and encouraged by populist strongman politicians, and made possible by various social media channels and the algorithms they use in spreading both information and misinformation. Conspiracy theories, fake news, propaganda have been constant features of public life, particularly at times of crises and uncertainty, but social media have created unparalleled opportunities for their organised and systematic dissemination and have turned them into powerful tools against science and knowledge.

## **Do you have any tips for early career scientists who may be considering embarking on their own science communication initiatives? How can they develop a trustworthy relationship with their audience?**

As the response to an earlier question signalled, I am a great believer in establishing direct contacts between scientists and the general public. Early career scientists increasingly work in large clusters and labs; these working arrangements can provide opportunities to organise “science cafes” and open science fora where scientists explain their research and address questions from the public. The proceedings of such encounters could then be made available through videos and podcasts and thus become further occasions for opening science to public scrutiny. Openness and accountability are proven markers of trustworthiness.



### **About Nat das Neves Rodrigues Lopes**

Nat das Neves Rodrigues Lopes did both her undergraduate degree and Ph.D. in Chemistry, in the UK: “My research explored the interactions between light and matter, something I have always been fascinated by! I did a lot of teaching during my Ph.D. and that’s when I first got interested in communicating my research to audiences beyond my immediate peers. Recently, I have been thinking a lot about public perceptions of science and public trust in scientists. I think it is urgent that we fix the public-expert relationship and I want to do my bit to help that!”

+++++

### **TRUTH, TRUST AND EXPERTISE (Fact/Fake) [Truth, Trust and Expertise - ALLEA](#)**

Public trust in evidence-based social institutions is a central pillar of a democracy. In recent times, however, both a dismissal of journalism and scientific facts, and a stronger scepticism in political institutions are apparently growing across Europe. This worrisome trend has been frequently related to, among other factors, a changing digital communication landscape. The impact of digitalisation may require new responses and mechanisms to sustain common ground and common sense in our public discourse.

At the core of European academies’ priorities is the promotion of the values of science and research, as well as the benefits of including scientific reasoning in public discourse. To comprehend the challenges ahead in a wider context of major social, political and cultural transformations, ALLEA (All European Academies, or “The European Federation of Academies of Sciences and Humanities”), seeks to provide a

transnational platform for perspectives on the nature of and relationship between truth, trust and expertise in the field of science.

Central Themes include:

- the alleged loss of trust in science and evidence,
- how valid knowledge can and should be acquired and communicated,
- the challenges posed by an increasingly digital society, and
- how academic disciplines and institutions should be dealing with these challenges.

ALLEA represents more than 50 academies from about 40 EU and non-EU countries. Since its foundation in 1994, ALLEA speaks out on behalf of its members on the European and international stages, promotes science as a global public good, and facilitates scientific collaboration across borders and disciplines.

Jointly with its members, ALLEA seeks to improve the conditions for research, to provide the best independent and interdisciplinary science advice available, and to strengthen the role of science in society. In doing so, ALLEA channels the expertise of European academies for the benefit of the research community, decision-makers and the public. Outputs include science-based advice in response to societally relevant topics, as well as activities to encourage scientific cooperation, scientific reasoning and values through public engagement.

Website: <https://allea.org/allea-in-brief>

## **ALLEA Working Group on Truth, Trust and Expertise**

ALLEA and its Member Academies have developed a series of publications, workshops and conferences to reflect and build upon the available expertise and find new responses to uphold the principles and values of science in times of contested expertise.

The ALLEA Working Group Truth, Trust and Expertise interrogated and explored current and past dynamics of public trust in expertise and the contested norms of what constitutes truth, facts and evidence in scientific research and beyond. The group was inspired by the [initiative](#) of the [British Academy](#) and developed its activities during 2017-2019.

Members of the Working Group:

- Baroness Onora O’Neill (Co-Chair) – British Academy and Royal Society
- Ed Noort (Co-Chair) – Royal Netherlands Academy of Arts and Sciences (KNAW)
- Maria Baghramian – Royal Irish Academy
- José van Dijck- Royal Netherlands Academy of Arts and Sciences (KNAW)
- Luke Drury – Royal Irish Academy (RIA)
- Göran Hermerén – Royal Swedish Academy of Letters, History and Antiquities (KVHAA)

- Gloria Origgi – Institut Jean Nicod
- Christiane Woopen – Köln University

#### Contributing Experts

- Ash Amin – British Academy
- Yesim Arat – Science Academy Istanbul
- David Boucher – Learned Society of Wales
- Boris Grozdanoff – Bulgarian Academy of Sciences
- Katherine Hawley – Royal Society of Edinburgh
- Lisa Herzog – Global Young Academy
- Cathrine Holst – University of Oslo
- Vassil Kirov – Bulgarian Academy of Sciences
- Stephan Lewandowsky – University of Bristol
- Antonio Loprieno – Swiss Academies of Arts and Sciences
- Susan Owens – British Academy
- Mike Schäfer – University of Zurich
- Judith Simon – University of Hamburg
- Günter Stock – Berlin-Brandenburg Academy of Sciences and Humanities
- Nikolay Vitanov – Bulgarian Academy of Sciences
- Helen Wallace – British Academy
- Erika Widegren – Re-Imagine Europa
- Milena Žic Fuchs – Croatian Academy of Sciences and Arts

Video: <https://youtu.be/r7f0OcYcB8I> Is there a loss of trust(worthiness) in science?



Democracy in a Digital Society: Trust, Evidence and Public Discourse

A full day conference co-organised with [Re-Imagine Europa](#) celebrated in Berlin on 24 January aimed to address some of the most pressing questions around the impact of digital transformations on democratic institutions in Europe and beyond. Considering recent events and the urgency to understand this complex relationship, renowned speakers from policy, academia, journalism and civil society came together to reflect on different aspects of political legitimisation, societal trust, scientific evidence and public discourse in a rapidly changing media environment.

[Learn more](#)



### **ALLEA Contact**

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### **Peritia: Policy, Expertise, and Trust in Action (PERiTIA) (Policy, Expertise, and Trust in Action)**

#### **Public trust in expert opinion put to the test.**

Trust is the glue that binds our social interactions. Philosophers, social and natural scientists, policy experts, ethicists, psychologists, media specialists and civil society organisations will come together to investigate the nature and conditions of public trust. The EU-funded PERiTIA project will review the role of science in policy decision-making and the conditions under which people should trust and rely on expert opinion that shapes public opinion. The key hypothesis explored conceptually and tested empirically is that affective and normative factors play a central role in decisions to trust, even in cases where judgements of trustworthiness may seem to be grounded in epistemic considerations, such as professional reputation, reliability and objectivity. The project will use climate change and climate science as a test case.

Peritia runs from 1 February 2020 to 31 May 2023 and funded under HORIZON 2020 grant agreement No 870883.

[Policy, Expertise, and Trust in Action | PERITIA Project | Fact Sheet | H2020 | CORDIS | European Commission \(europa.eu\)](#)

Ireland partakes in this European project through the UCD Centre for Ethics in Public Life ([UCD Centre for Ethics in Public Life](#))



**UCD Centre for Ethics in Public Life (CEPL)** was delighted to announce that the *Policy, Expertise, and Trust in Action* project, led by Prof Maria Baghramian of CEPL and the UCD School of Philosophy and Prof Luke Drury from the Dublin Institute of Advanced Study, has been funded by the EU's Horizon 2020 fund. This project brought together 20 philosophers, social scientist, and people who work in public policy to study the effects of the erosion of trust in experts on contemporary politics.

Prof Rowland Stout and Dr Danielle Petherbridge, the director and co-director of CEPL, are also major participants in this project. The work on PERiTia in UCD is based in CEPL and in the UCD Geary Institute.

PERiTia is a follow-up on Profs Baghramian and Drury's previous project [When Expert's Disagree](#), which investigated the drivers and effects of peer disagreement among experts. For more information, please visit [the PERiTia webpage](#).

In a world increasingly relying on knowledge and scientific evidence, trust in expertise is crucial to achieve progress and wellbeing. We need experts to help policymakers and citizens take the correct decisions in important matters such as health or climate change.

### **Project Title:**

[PERITIA - Policy, Expertise, and Trust in Action - Acopian Center for the Environment \(aua.am\)](#)

PERITIA – Policy, Expertise, and Trust in Action

### **Project time period**

2020 – 2023

### **Partners**

The international consortium comprises 11 institutions:

- [University College Dublin](#) (Ireland), project leader
- [All European Academies](#), ALLEA (Netherlands/Germany)
- [University of Oslo](#) (Norway)
- [Institut Jean Nicod](#), Ecole normale supérieure (ENS) and the Ecole des hautes études en sciences sociales (EHESS) (France)

- [Vita-Salute San Raffaele University](#) (Italy)
- American University of Armenia's [Acopian Center for the Environment](#) (Armenia)
- [Sense about Science](#) (UK)
- [King's College London](#) (UK)
- [Polish Academy of Sciences](#) (Poland)
- [Utrecht University](#) (Netherlands)
- [Strane Innovation](#) (France)

## Project Description

The project brings together over 20 philosophers, social and natural scientists, policy experts, ethicists, psychologists, media specialists, and civil-society organizations to study trust in and the trustworthiness of policy-related expert opinion. Using climate change as a test case, PERITIA will carry out multidisciplinary and integrative research to understand the factors that contribute to the enhancement or breakdown of trust in experts involved in social and political decision-making. Since trust in experts and expert advisory bodies is a fundamental condition of good governance, the project will contribute to improving the measures of trust for sustainable and legitimate governance.

PERITIA's investigation will be carried out in three phases: theoretical, empirical and ameliorative.

- The first phase carries out a foundational – theoretical and normative – investigation into the concept and conditions of trust and trustworthiness. The key goal here is to enhance the knowledge base on the topic of public trust in social and political contexts by providing an analysis of trust in experts from social, philosophical, psychological and ethical perspectives.
- The second phase of the project will adopt an empirical approach. It will analyse existing data on the changing levels of trust in experts and generating a longitudinal overview of the subject matter through surveys on trust in experts in seven countries, including Armenia. There will also be lab-based behavioural studies that will investigate the determinants of judgments of trust and trustworthiness by the general public.
- The third phase is the action/intervention phase of the project, known as the ameliorative phase, will involve public engagements addressing issues related to trust in experts. The core action planned will be encounters among representative groups from the general public and experts, policymakers and journalists specializing in the area of climate change. These “citizen forums,” which will also be organized in Armenia, will test and give critical insights into how deliberative democracy can be strengthened. The project will engage youth through essay competitions on trust and governance. The final outcome of this phase is the construction and testing of a trustworthiness toolkit for policymakers.

Sense about Science ([Sense about Science joins PErITiA – Sense about Science](#)) is pleased to be part of a new Europe-wide project to look into how people weigh up expertise, the [PErITiA](#) (Policy, expertise and trust in action) project, which has just been awarded funding from the EU's Horizon 2020 programme.

PErITiA will investigate how people – members of the public and politicians in particular – make decisions about evidence and expertise using a variety of research methods. The research team is going to produce a toolkit to guide experts communicating evidence to the public, using climate change as a case study. Sense about Science is bringing our experience from 17 years working with and for the public to engage members of the public in testing, developing and shaping the toolkit. With partners in the project [Allea](#), we will also produce a paper on our approach to engaging citizens in collaborative workshops.

The project is coordinated by [University College Dublin](#) and other partners include [Kings College London](#), [University of Oslo](#), [Polish Academy of Sciences](#), [Utrecht University](#), [American University of Armenia](#), [Vita-Salute San Raffaele University](#) in Italy and [Institute Jean Nicod](#) from France. The advisory group for this work includes Professors Onora O'Neill, Cass Sunstein, Luke Drury, Susan Owens and Dan Sperber.

The Horizon 2020 programme has awarded this project €3 million, and work will begin in February 2020.

**Objectives** ([PERiTIA- Policy, Expertise and Trust in Action - Department of Sociology and Human Geography \(uio.no\)](#))

To investigate:

- and compare the existing systems through which experts assume an advisory role in policy-making decisions in some selected European countries.
- the role of digital media in establishing, enhancing or diminishing the levels of trust in experts.
- the psychological mechanisms of trust in experts, social indicators of experts' trustworthiness, and the emotional and cognitive components of trusting behaviour.
- the ethical requirements of trustworthy expertise
- the extent to which Citizen's Fora of deliberation where representative groups from the general public and experts, policymakers and journalists meet can generate trust and trustworthiness.

Also see: Project Design: [Project Plan • \(peritia-trust.eu\)](#)

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**PERITIA • Policy, Expertise and Trust**

- **Research Insights for European Policymaking**

In a world in which policy decisions are increasingly reliant upon scientific knowledge and evidence, trust in trustworthy expertise is crucial to the achievement of progress as well as to our well-being. We need experts to help policymakers and citizens take the correct decisions in such important matters as our health or climate change. Likewise, we need to empower policymakers and citizens to be able to recognise trustworthy expertise.

**PERITIA is an EU-funded project that investigates public trust in expertise.**

In a world that is increasingly reliant on knowledge and scientific evidence, trust in expertise is crucial to the achievement of progress as well as to our well-being. We need experts to help policymakers and citizens take the correct decisions when it comes to such important areas as our health or climate change.

This project has received funding from the **European Union's Horizon 2020** research and innovation programme under grant agreement No 870883. The information and opinions on this website and other



communications materials are those of the authors and do not necessarily reflect the opinion of the European Commission.

From 2020 to 2023, the PERITIA team produced research outputs to investigate the conditions under which people trust expertise used for informing public policy.

## **PERITIA in a Nutshell**

More content at: [About • \(peritia-trust.eu\)](https://peritia-trust.eu)

PERITIA is an EU-funded project that investigates public trust in expertise. Our multi-disciplinary team seeks to help citizens and policymakers understand trust in science and identify trustworthy expertise. We aim to enhance trust in a better democratic governance for the future of Europe.

PERITIA's key hypothesis is that affective and normative factors play a central role in decisions to trust. This applies even in cases where judgements of trustworthiness may seem to be grounded in epistemic considerations, such as professional reputation, reliability or objectivity. Our team explores this hypothesis conceptually and tests it empirically.

The project uses climate change and climate science as a test case. Ultimately, it seeks to design and provide practical tools and indicators which can be applied to measure and establish the trustworthiness of the agents and institutions involved in social and political decision-making. Find out more about the project by looking through our Project Plan or our News or Events pages.

## **Why Trust Experts**

Experts have been omnipresent since the onset of the COVID-19 pandemic, but why should we trust them? And why not? The video “Why Trust Experts?” asks us to reflect on the role expertise plays in our daily lives. We have all seen the involvement experts have had in advising citizens and politicians during the pandemic. Now is an opportune time for us to ask questions about the nature of trust in expertise. How does trust in experts function? How is trust in science related to trust in media? Why is trust in expertise important for democracies? How can we learn to trust trustworthy experts?

For the past three years, [PERITIA](https://peritia-trust.eu) has raised and addressed questions regarding the complex interrelationship of truth, trust, policy, and expertise. PERITIA and its project partners from nine European countries are now issuing an invitation to the final presentation of their research insights for European policymaking, to be held at the European Parliament InfoHUB in Brussels.

## **Why Trust in Expertise Matters**

[Understanding trust in expertise and science](#)  
[Is there a crisis of trust in expertise and science?](#)

**Want to learn more?**

Read:

- [“Trust in Experts: Why and Why Not?”](#) – Maria Baghramian
- [Special issue on Vulnerability and Trust](#)

Watch:

- [“What we don’t understand about trust” – Onora O’Neill](#)

**Expertise, Media and Policy**

**[How is trust in science and expertise related to trust in media?](#)**

**[How should science inform policymakers?](#)**

**Want to learn more?**

Read:

- [“Trust in Science and Changing Landscapes of Communication” – ALLEA Discussion Paper](#)
- Special Issue [Governing Trust in European Platform Societies](#)
- [Experts, Public Policy and the Question of Trust](#)

Watch:

- [“Governing trust in a digital platform society” – José van Dijck](#)
- [Trust in Expertise in a Changing Media Landscape](#)

The PERITIA project will conclude with a closing conference at the [European Parliament Info Hub](#) in Brussels on 4–5 May 2023, with a focus on ‘Research Insights for European Policymaking’. Co-hosted by the [European Parliament’s Panel for the Future of Science and Technology \(STOA\)](#) and the [European Science Media Hub](#), this event will provide a space where experts on trust from the spheres of research and policy can gather to discuss the project’s results with an audience of European policymakers and other stakeholders in the field of science-driven policy.

["Why do we need public trust in times of crisis?" | Royal Irish Academy \(ria.ie\)](#)

More articles & Interviews with principles:

[PERiTIA | European Science-Media Hub \(sciencemediahub.eu\)](#)

**Why was Peritia Project set up and where did the idea originate? See interview with Prof. Maria Baghramian: Policy, Expertise and Trust in Action for insights. Currently, she co-ordinates the Horizon 2020 research project Policy, Expertise and Trust in Action (PERiTIA):**

[Prof. Maria Baghramian: Policy, Expertise and Trust in Action – Crastina](#)

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18 March 2020

[How to spot bogus science stories and read the news like a scientist \(theconversation.com\)](https://theconversation.com/how-to-spot-bogus-science-stories-and-read-the-news-like-a-scientist)

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30 March 2017

[How scientists should communicate their work in a post-truth era \(theconversation.com\)](https://theconversation.com/how-scientists-should-communicate-their-work-in-a-post-truth-era)

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22 March 2022

[Fake news: people with greater emotional intelligence are better at spotting misinformation \(theconversation.com\)](https://theconversation.com/fake-news-people-with-greater-emotional-intelligence-are-better-at-spotting-misinformation)

## **Do the Public Need To Be More Scientifically Literate? With Dr. Hilary Jones**

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[Do the Public Need To Be More Scientifically Literate? With Dr. Hilary Jones Video | Technology Networks](https://www.technologynetworks.com/do-the-public-need-to-be-more-scientifically-literate-with-dr-hilary-jones-video)

## **How to Bring the Public into the Scientific Process**

14 March 2022

[How to Bring the Public into the Scientific Process | TS Digest | The Scientist \(the-scientist.com\)](https://the-scientist.com/how-to-bring-the-public-into-the-scientific-process)

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17 March

[Strife at eLife: inside a journal's quest to upend science publishing \(nature.com\)](https://www.nature.com/articles/d41586-023-00831-6)

doi: <https://doi.org/10.1038/d41586-023-00831-6>

## **Octopus and ResearchEquals aim to break the publishing mould**

22 March

[Octopus and ResearchEquals aim to break the publishing mould \(nature.com\)](https://www.nature.com/articles/d41586-023-00861-0)

doi: <https://doi.org/10.1038/d41586-023-00861-0>

## **A critical look at the practice and culture of science with calls to action | Communications Chemistry**

20 March

[A critical look at the practice and culture of science with calls to action | Communications Chemistry \(nature.com\)](https://www.nature.com/articles/s42004-023-00855-z)

DOI <https://doi.org/10.1038/s42004-023-00855-z>

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20 March

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24 March

[The Cape Town Statement on fairness, equity and diversity in research \(nature.com\)](#)

doi: <https://doi.org/10.1038/d41586-023-00855-y>

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28 March

[Pandemic productivity loss: how scientific institutions should support academic mothers \(nature.com\)](#)

doi: <https://doi.org/10.1038/d41586-023-00888-3>

## **It's time to rethink what citizen science really is**

28 March

[It's time to rethink what citizen science really is \(theconversation.com\)](#)

## **How Scientists Respond to Science Deniers**

?

[Watch Edge Of Knowledge | How Scientists Respond to Science Deniers | Ars Technica Video | CNE](#)

## **He Wanted to Unclog Cities. Now He's 'Public Enemy No. 1.'**

28 March

[Carlos Moreno Created the 15-Minute City. Conspiracy Theorists Are Coming for Him. - The New York Times \(nytimes.com\)](#)

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<https://doi.org/10.1371/journal.pone.0278169>

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[Can We Trust Peer Review Journals? | Skeptical Inquirer](#)

## **Most methods for squashing conspiracy theories don't work, study finds. Here's what does**

6 April

[Most methods for squashing conspiracy theories don't work, study finds. Here's what does. | Live Science](#)

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## **A guide to ontology, epistemology, and philosophical perspectives for interdisciplinary researchers – Integration and Implementation Insights**

2 May 2017

[A guide to ontology, epistemology, and philosophical perspectives for interdisciplinary researchers – Integration and Implementation Insights \(i2insights.org\)](#)

Epistemic Definition & Meaning - Merriam-Webster

<https://www.merriam-webster.com/dictionary/epistemic>

**PERITIA Lectures | [Un]Truths: Trust in an Age of Disinformation •**

<https://peritia-trust.eu/peritia-lectures/#video>

[PERITIA Lectures | \[Un\]Truths: Trust in an Age of Disinformation • \(peritia-trust.eu\)](#)

**Congratulations to Professor Maria Baghramian of University College Dublin's School of Philosophy on her election to the Academia Europea!**

6 months ago

[\(25\) Post](#) | [Feed](#) | [LinkedIn](#)

**Watch "PERiTia: Trust in a Changing World" on YouTube**

30 March 2020

[\(227\) PERiTia: Trust in a Changing World - YouTube](#)

**Climate communication: How researchers navigate between scientific truth and media publics**

17 November 2022

[Climate communication: How researchers navigate between scientific truth and media publics - Donya Alinejad, José Van Dijck, 2023 \(sagepub.com\)](#)

Conference paper provided by author Donya

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**Philosophy, Philosophy of Science, Truth and Scientific Truth**

These topics are not normally subjects taught at undergraduate level in our HEA institutions and like most major subjects' philosophy has its own language and technical terms. Below is some attempt to explain some of these terms and what philosophers mean by them.

**Truth:**

The quality or state of being true.

That which is true or in accordance with fact or reality.

A fact or belief that is accepted as true: - "the emergence of scientific truths"

**What is the real explanation of truth?**

Truth, in metaphysics and the philosophy of language, the property of sentences, assertions, beliefs, thoughts, or propositions that are said, in ordinary discourse, to agree with the facts or to state what is the case. Truth is the aim of belief; falsity is a fault.

**What does truth mean in life?**

'Truth' has a variety of meanings, but the most common definitions refer to the state of being in accordance with facts or reality. There are various criteria, standards and rules by which to judge the truth that statements profess to claim. The problem is how can there be assurance that we are in accordance with facts or realities when the human mind perceives, distorts and manipulates what it wants to see, hear or decipher. Perhaps a better definition of truth could be, *an agreement of a judgment by a body of people on the facts and realities in question*. See:

[What Is Truth? | Issue 86 | Philosophy Now](#) September/ October 2011

**Truth** is the [property](#) of being in accord with [fact](#) or [reality](#).<sup>[1]</sup> In everyday language, truth is typically ascribed to things that aim to represent reality or otherwise correspond to it, such as [beliefs](#), [propositions](#), and [declarative sentences](#). ([Truth - Wikipedia](#))

**Truth**, in [metaphysics](#) and the [philosophy of language](#), the property of sentences, assertions, [beliefs](#), thoughts, or propositions that are said, in ordinary discourse, to agree with the facts or to state what is the case. ([Truth | Definition, Importance, Theories, & Facts | Britannica](#))

**Truth:** Stanford Encyclopedia of Philosophy:

**Truth** is one of the central subjects in philosophy. It is also one of the largest. Truth has been a topic of discussion in its own right for thousands of years. Moreover, a huge variety of issues in philosophy relate to truth, either by relying on theses about truth, or implying theses about truth. . . . . The problem of truth is in a way easy to state what truths are, and what (if anything) makes them true. But this simple statement masks a great deal of controversy. Whether there is a metaphysical problem of truth at all, and if there is, what kind of theory might address it, are all standing issues in the theory of truth.

([Truth \(Stanford Encyclopedia of Philosophy\)](#))

### **New Bing with AI:**

**Truth** is a property not so much of thoughts and ideas but more properly of beliefs and assertions. But to believe or assert something is not enough to make it true, or else the claim that ‘to believe that p is to make it true that p’ would be correct. [Truth is a proven or verified principle or statement: fact.](#)

It used the following sources:

#### **Learn more:**

[1. thefreedictionary.com](#) [2. psychologytoday.com](#) [3. ligonier.org](#) [4. gty.org.](#)

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## **Science & Truth**

### **The many meanings of truth**

[The many meanings of truth - Understanding Science \(berkeley.edu\)](#)

### **Scientific truth - Philosophy of science**

[philosophy of science](#)

[Philosophy of science - Scientific truth | Britannica](#)

What is the relationship between science and truth?

**The aim of science is to build true and accurate knowledge about how the world works.**

The word “truth” is sometimes used to refer to spiritual truths or other topics that science cannot investigate. To be interested in scientific truth, one doesn't have to reject other sources of meaning.

## **Scientific truth**

Louis A. Girifalco

<https://doi.org/10.1093/acprof:oso/9780199228966.003.0023>

Pages 267–275. **Published:** September 2007

## Abstract

Scientific truth is based on facts. Philosophy, religion, feelings, and prejudice have nothing to do with science. Only facts matter. Verified, reproducible facts are the bedrock of scientific truth. The facts are used to construct theories which describe the detailed relations among large numbers of facts and their origin from common roots. Each element of a theory corresponds to some part of nature, and, in this sense, scientific theories describe nature.

What is truth in science?

But what is truth in science? Should this not be easier to establish and be more clear cut since facts can be tested and proved by replication? One would like to think so, and it is this issue that Roger Newton, an emeritus professor of physics at Indiana University in the US, addresses in this book.

[What is truth in science? – Physics World](#)

**Book: Science, Truth, and Meaning - From Wonder to Understanding.**

[Science, Truth, and Meaning \(worldscientific.com\)](http://worldscientific.com)

*Science, Truth, and Meaning* presents a scientific and philosophical examination of our place in the world. It also celebrates how diverse, scientific knowledge is interconnected and reducible to common foundations.

The book focuses on aspects of scientific truth that relate to our understanding of reality, and confronts whether truth is absolute or relative to what we are. Hence, it assesses the meaning of the scientific deductions we have made and how they have profoundly influenced our conception of life and existence.

The subtitle is 'From Wonder to Understanding', which is a paraphrased quote from Einstein, who said that the search for scientific truth is " ... a continual flight from wonder to understanding".

In addressing the goal of advancing our understanding of our place in the world, this book also reveals the development and details of diverse sciences, their connections and achievements, and that while perhaps the same fundamental questions exist, they are seen in the light of an ever-refined scientific perspective on reality.

**Book: What is truth – in science and beyond**

### Summary

Truth is threatened in our societies, and one might wish that scientists should stand up for truth, but in order to do so, one needs to know what truth is and how it can be recognized. The oldest and most widely accepted concept of truth is the Correspondence Theory requesting a fit of propositions and reality. In the Coherence Theory truth is a consistent property of a whole system of propositions. In the Pragmatic Theory truth works in practical terms. Scientists have defined criteria to verify true statements by experiments and by the simplicity of theories. Aristotle proposed parsimony claiming the superiority of theories which derive from fewer hypotheses. David Hume suggested probability arguments to assess the force of evidence. Nicolai Hartmann elaborated a model based on the congruence of *a priori* logical arguments with *a posteriori* empirical observations. Karl Popper introduced the falsification of testable theories as a way to better theories. The analysis shows that scientific and medical research uses classical philosophical criteria of truth in their daily work. Humanities use different, hermeneutic criteria of truth. Finally, societies need for their coherence a dialectic approach to truth based on honest discussion of opposing views.

First published: 05 June 2022 <https://doi.org/10.1111/1462-2920.16080> Citations: 2

## The Nature of Scientific Truth

### Extract:

Implicit in the idea of empirical science is a question: What is truth anyway, and how is it determined? Replication studies attempt to answer this question by seeking to show if the original finding can be obtained again under similar experimental conditions. In science, truth, whatever its content, is said to exist to the extent that it is theoretically and empirically supported. Accordingly, a successful replication of an original finding is taken to mean that a truth exists, while a failure to replicate supposedly indicates the absence of the presumed truth. This fundamental axiom rests on the assumption that a scientific truth exists in the first place, and that it would reveal itself on researchers' empirical demands again and again. However, if an effect does not respond to replicators' call, the weight of evidence shifts against it or, worse, its existence is cast in doubt and void, as has recently been done with regard to ego depletion, social priming, bystander effect, actor-observer asymmetry in attributions, loss aversion, delay of gratification, and other phenomena ([Malle, 2006](#); [Doyen et al., 2012](#); [Carter et al., 2015](#); [Gerber et al., 2016](#)).

And [Frontiers | Replication and the Establishment of Scientific Truth \(frontiersin.org\)](#)

REVIEW article

Front. Psychol., 16 September 2020

Sec. Theoretical and Philosophical Psychology

Volume 11 - 2020 | <https://doi.org/10.3389/fpsyg.2020.02183>

Chapter 5 :Epistemology [Truth and Science \(cuny.edu\)](#) and [2.5.8: Truth and Science - Humanities LibreTexts](#)

### SCIENTIFIC TRUTH

For logical, semantic and systemic claims there are methods to determine their truth. It is with regard to the empirical claims about the universe, events and properties of it that is the main concern of the theories about Truth. Perhaps the best that humans have been able to do with regard to getting at the truth concerning empirical claims is the development of a method for doing it.

In Science there are a number of views that are operative in its various phases.

#### 1. Instrumentalist View - Pragmatist Theory

The scientific theory makes predictions, the predictions are verified and so it works, and it satisfies the community of inquirers (the scientists).

#### 2. The Realist View - Correspondence Theory

The scientific theory provides true explanations because its predictions are verified through empirical testing.

#### 3. The Conceptual Relativist - Coherence Theory

The scientific theory is coherent within a given framework, what coheres or fits in with a system of beliefs



-true theory is that which is accepted by the community of working scientists with its own  
CONCEPTUAL FRAMEWORK

-independent checks are not possible because all observations are theory laden

So, in the end perhaps the truth concerning empirical claims is that claim which:

- corresponds to fact and
- coheres with and is consistent with other established truths and
- has useful consequences for those concerned.

Perhaps what is the most useful consequence of a belief concerning an empirical claim is to correspond to reality (facts) and to cohere (be consistent) with what has already been accepted as true by the same means.

Philosophers shall continue to spend time arriving at a more certain foundation for claims of truth.

For now, what do we have? What is knowledge?

To claim to know and to have that claim accepted by others as being correct is to satisfy the criteria that the claim be warranted. What supplies the warrant is that the claim be justified and true. how is that accomplished or established? Well, that depends on the type of claim that it is:

Semantic claim: Supported by references to dictionaries or lexicons.

Systemic claim: supported by the rules of the system in which the claim is being made.

Logical claim: supported by and consistent with the rules of logic.

Empirical claim: supported by a process of verification that establishes that the empirical claim:

- corresponds to fact and
- coheres with and is consistent with other established truths and
- has useful consequences for those concerned.

Science can deal with empirical claims that are TESTABLE, VERIFIABLE and REFUTABLE

This may be the best explanation that humans have for what and how they know what they claim to know. It is not totally satisfying to all critical inquirers, but it is more well founded within human experience than the position that there is no knowledge at all or that there is no knowledge that is objective or that there is no knowledge that is certain. There are types or forms of knowledge and within each there are the means to establish the justification for making and accepting claims.

**Or a better presentation at:** [2.5.8: Truth and Science - Humanities LibreTexts](#)

For logical, semantic and systemic claims there are methods to determine their truth. It is with regard to the empirical claims about the universe, events and properties of it that is the main concern of the theories about Truth. Perhaps the best that humans have been able to do with regard to getting at the truth

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The scientific theory is coherent within a given framework, what coheres or fits in with a system of beliefs

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- Systemic claim: supported by the rules of the system in which the claim is being made.
- Logical claim: supported by and consistent with the rules of logic.

Empirical claim: supported by a process of verification that establishes that the empirical claim:

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## What Do We Mean by 'Scientific Truth'?

.By Peter Ellerton

**Editor's Note: This article was provided by The Conversation. The original can be found: [The truth, the whole truth and ... wait, how many truths are there? \(theconversation.com\)](https://theconversation.com/the-truth-the-whole-truth-and-wait-how-many-truths-are-there/)**

## What Do We Mean by 'Scientific Truth'? By Peter Ellerton

*Editor's Note: This article was provided by [The Conversation](https://theconversation.com/). The original can be found [here](#).*

Calling something a “scientific truth” is a double-edged sword. On the one hand it carries a kind of **epistemic** (how we know) credibility, a quality assurance that a truth has been arrived at in an understandable and verifiable way.

On the other, it seems to suggest science provides one of many possible categories of truth, all of which must be equal or, at least, non-comparable. Simply put, if there’s a “scientific truth” there must be other truths out there. Right?

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## Philosophy of science

Philosophy of science is a branch of philosophy concerned with the foundations, methods, and implications of science. The central questions of this study concern what qualifies as science, the reliability of scientific theories, and the ultimate purpose of science. This discipline overlaps with metaphysics, ontology, and epistemology, for example, when it explores the relationship between science and truth. Philosophy of science focuses on metaphysical, epistemic and semantic aspects of science. Ethical issues such as bioethics and scientific misconduct are often considered ethics or science studies rather than the philosophy of science.

[Philosophy of science - Wikipedia](https://en.wikipedia.org/wiki/Philosophy_of_science)

## What is philosophy of science called?

### Logical Positivism

Philosophy of science emerged as a distinct area of professional philosophy in the first half of the twentieth century. Its rise was fueled and deeply influenced by a movement known as logical positivism, which originated in Europe, principally Vienna and Berlin, in the 1920s.

[philosophy of science - Google Search](https://www.google.com/search?q=philosophy+of+science)

**Philosophy of Science**, the study, from a philosophical perspective, of the elements of scientific inquiry. This article discusses metaphysical, epistemological, and ethical issues related to the practice and

goals of modern science. For treatment of philosophical issues raised by the problems and concepts of specific sciences, see biology, philosophy of; and physics, philosophy of.

[Philosophy of science | Definition, History, Books, Importance, & Facts | Britannica](#)

**Philosophy of Science** explores questions about the nature and practice of science. Some approaches pay close attention to the practices of scientists working on particular problems, while others aim at a philosophical understanding of the nature of science as a whole.

One set of core issues concerns the aims and methods of science. Science is typically thought of as our most developed form of enquiry into the empirical world. Is this true? Do scientific theories provide an accurate description of a mind-independent reality? Or are theories merely tools for making reliable predictions about the future course of experience? How do we decide which scientific theories to adopt? Is there a general method that scientists all follow, perhaps one that makes scientific enquiry importantly distinct from other forms of enquiry, such as history or philosophy?

[Philosophy of Science - Philosophy - Trinity College Dublin \(tcd.ie\)](#)

### **Why science need's philosophy**

Complementary to its role in conceptual clarification, philosophy can contribute to the critique of scientific assumptions—and can even be proactive in formulating novel, testable, and predictive theories that help set new paths for empirical research.

[Why science needs philosophy | PNAS](#)

### **The philosophy of science**

Despite its straightforward name, the field is complex and remains an area of current inquiry. Philosophers of science actively study such questions as:

What is a law of nature? Are there any in non-physical sciences like biology and psychology?  
 What kind of data can be used to distinguish between real causes and accidental regularities?  
 How much evidence and what kinds of evidence do we need before we accept hypotheses?  
 Why do scientists continue to rely on models and theories which they know are at least partially inaccurate (like Newton's physics)?

Though they might seem elementary, these questions are actually quite difficult to answer satisfactorily. Opinions on such issues vary widely within the field (and occasionally part ways with the views of scientists themselves — who mainly spend their time *doing* science, not analysing it abstractly). Despite this diversity of opinion, philosophers of science can largely agree on one thing: there is no single, simple way to define science!



Though the field is highly specialized, a few touchstone ideas have made their way into the mainstream. Here's a quick explanation of just a few concepts associated with the philosophy of science, which you might (or might not) have encountered.

- **Epistemology** — branch of philosophy that deals with what knowledge is, how we come to [accept](#) some things as true, and how we justify that acceptance.
- **Empiricism** — set of philosophical approaches to building knowledge that emphasizes the importance of [observable](#) evidence from the [natural world](#).
- **Induction** — method of reasoning in which a generalization is argued to be true based on individual examples that seem to fit with that generalization. For example, after observing that trees, bacteria, sea anemones, fruit flies, and humans have cells, one might *inductively* [infer](#) that all organisms have cells.
- **Deduction** — method of reasoning in which a conclusion is logically reached from premises. For example, if we know the current relative positions of the moon, sun, and Earth, as well as exactly how these move with respect to one another, we can [deduce](#) the date and location of the next solar eclipse.
- **Parsimony/Occam's razor** — idea that, all other things being equal, we should prefer a simpler explanation over a more complex one.
- **Demarcation problem** — the problem of reliably distinguishing science from non-science. Modern philosophers of science largely agree that there is no single, simple criterion that can be used to demarcate the boundaries of science.
- **Falsification** — the view, associated with philosopher Karl Popper, that evidence can only be used to rule out ideas, not to support them. Popper proposed that scientific ideas can only be [tested](#) through [falsification](#), never through a search for supporting evidence.
- **Paradigm shifts and scientific revolutions** — a view of science, associated with philosopher Thomas Kuhn, which suggests that the history of science can be divided up into times of normal science (when scientists add to, elaborate on, and work with a central, accepted scientific theory) and briefer periods of revolutionary science. Kuhn asserted that during times of revolutionary science, anomalies refuting the accepted theory have built up to such a point that the old theory is broken down and a new one is built to take its place in a so-called “paradigm shift.”

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Are you a talented early-career scientist who has already produced excellent supervised work, is ready to work independently and shows potential to be a research leader? The ERC Starting Grant could be for you.

See Here: <https://erc.europa.eu/apply-grant/starting-grant>

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## **‘It can be done. It must be done’: IPCC delivers definitive report on climate change, and where to now**

20 March

[‘It can be done. It must be done’: IPCC delivers definitive report on climate change, and where to now \(theconversation.com\)](https://theconversation.com/it-can-be-done-it-must-be-done-ipcc-delivers-definitive-report-on-climate-change-and-where-to-now)

## **Imagine newsletter – a weekly synthesis of academic insight on solutions to climate change, brought to you by The Conversation by Jack Marley, energy and environment editor:**

“The Intergovernmental Panel on Climate Change (IPCC) has published comprehensive reviews of scientific knowledge on global heating for more than three decades. The latest report from the world's foremost body of experts has been described as "a final warning", and that's no empty threat.

At the current rate of greenhouse gas emissions, the world will use up its remaining carbon budget for limiting global temperature rises to 1.5°C before the next IPCC report is due in 2030. Beyond the 1.5°C warming threshold, damage to the climate is expected to rapidly escalate and become irreversible.”

To read more go to: <https://theconversationuk.cmail19.com/t/r-e-ttlklykd-bjiltujkyh-p>

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21 March

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25 March

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18 April

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## **Green Hydrogen & Fuel Cells Chemistry & Technology (Including “Green Ammonia”)**

### **New Pininfarina with Swappable Hydrogen Bottles Which Threaten Tesla’s Electric Vehicles are Set for Production - Hydrogen Central**

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## **University of Surrey researchers make ‘game-changing’ findings for hydrogen production**

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18 April

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## **Will German gas grids switch to hydrogen by 2035, as new clean heating law requires? Not a chance, say gas distributors**

20 April

[Will German gas grids switch to hydrogen by 2035, as new clean heating law requires? Not a chance, say gas distributors | Hydrogen news and intelligence \(hydrogeninsight.com\)](#)

## **Hydrogen in homes is 'a dangerous pipe dream' — the leaky US gas grid will not be able to safely handle H2: report**

20 April

[Hydrogen in homes is 'a dangerous pipe dream' — the leaky US gas grid will not be able to safely handle H2: report | Hydrogen news and intelligence \(hydrogeninsight.com\)](#)

## **Researchers in Japan develop a new ultra-high-density sulfonic acid polymer electrolyte membrane for fuel cells**

19 April

[Researchers in Japan develop a new ultra-high-density sulfonic acid polymer electrolyte membrane for fuel cells \(phys.org\)](#)

<https://dx.doi.org/10.1021/acsapm.3c00150>

## **Researchers discover a way to produce hydrogen and purify water at the same time**

24 April

[Researchers discover a way to produce hydrogen and purify water at the same time \(phys.org\)](#)

## **Newly developed hydrogel nanocomposite for the mass production of hydrogen**

27 April

[Newly developed hydrogel nanocomposite for the mass production of hydrogen \(phys.org\)](#)

<https://dx.doi.org/10.1038/s41565-023-01385-4>

## **Green Ammonia as a Fuel Source**

### **Highly efficient ammonia-based systems for climate-friendly energy supply**

15 February

[Highly efficient ammonia-based systems for climate-friendly energy supply \(techxplore.com\)](#)

## **Green ammonia import terminal to open in Liverpool**

3 March

[Green ammonia import terminal to open in Liverpool \(h2-view.com\)](https://www.h2-view.com)



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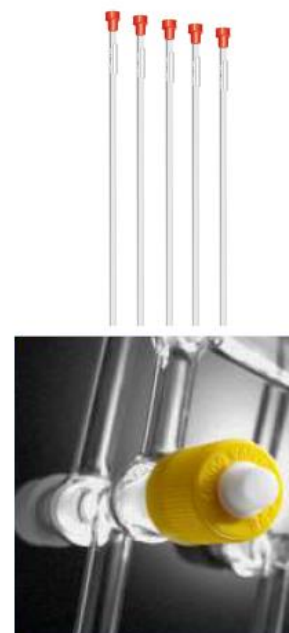
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## Solar Cell Chemistry & Technology

### **Win-win: how solar farms can double as havens for our wildlife**

2 February

[Win-win: how solar farms can double as havens for our wildlife \(theconversation.com\)](https://theconversation.com/win-win-how-solar-farms-can-double-as-havens-for-our-wildlife)

### **Reflective membrane to increase albedo, power yield in bifacial PV projects – pv magazine International**

3 February

[Reflective membrane to increase albedo, power yield in bifacial PV projects – pv magazine International \(pv-magazine.com\)](https://pv-magazine.com/reflective-membrane-to-increase-albedo-power-yield-in-bifacial-pv-projects)

### **Inverted perovskite solar cell with 24.1% efficiency – pv magazine International**

2 February

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### **New type of solar cell is being tested in space**

31 January

[New type of solar cell is being tested in space \(techxplore.com\)](https://techxplore.com/new-type-of-solar-cell-is-being-tested-in-space)

DOI: [10.1016/j.mtener.2022.101050](https://doi.org/10.1016/j.mtener.2022.101050)

### **Two/quasi-two-dimensional perovskite-based heterostructures: Construction, properties and applications**

3 January

[Two/quasi-two-dimensional perovskite-based heterostructures: Construction, properties and applications \(phys.org\)](https://phys.org/two-quasi-two-dimensional-perovskite-based-heterostructures)

DOI: [10.1088/2631-7990/acab40](https://doi.org/10.1088/2631-7990/acab40)

### **Photovoltaic-thermal system based on PCM cooling – pv magazine International**

6 February

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8 February

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### **Revolutionizing the Future of Energy: Advancement in Halide Perovskite Solar Cell Technology**

11 February

[Revolutionizing the Future of Energy: Advancement in Halide Perovskite Solar Cell Technology \(scitechdaily.com\)](https://scitechdaily.com/revolutionizing-the-future-of-energy-advancement-in-halide-perovskite-solar-cell-technology)

DOI: [10.1002/adma.202204726](https://doi.org/10.1002/adma.202204726)

### **Researchers propose titanium-based perovskite for water activation and lower-temperature hydrolysis of organic sulphur**

14 February

[Researchers propose titanium-based perovskite for water activation and lower-temperature hydrolysis of organic sulfur \(phys.org\)](https://phys.org/researchers-propose-titanium-based-perovskite-for-water-activation-and-lower-temperature-hydrolysis-of-organic-sulfur)

DOI: [10.1073/pnas.2217148120](https://doi.org/10.1073/pnas.2217148120)



## **Perovskites, a 'dirt cheap' alternative to silicon, just got a lot more efficient**

16 February

[Perovskites, a 'dirt cheap' alternative to silicon, just got a lot more efficient \(phys.org\)](#)

DOI: [10.1038/s41566-022-01151-3](https://doi.org/10.1038/s41566-022-01151-3)

## **An extensive study on multiple ETL and HTL layers to design and simulation of high-performance lead-free CsSnCl<sub>3</sub>-based perovskite solar cells | Scientific Reports**

13 February

<https://www.nature.com/articles/s41598-023-28506-2>

DOI <https://doi.org/10.1038/s41598-023-28506-2>

## **US scientists improve photoresponsivity in solar perovskite by 250% – pv magazine International**

17 February

[US scientists improve photoresponsivity in solar perovskite by 250% – pv magazine International \(pv-magazine.com\)](#)

## **MIT team makes a case for direct carbon capture from seawater, not air**

17 February

<https://newatlas.com/environment/mit-carbon-capture-seawater>

DOI: [10.1039/D2EE03804H](https://doi.org/10.1039/D2EE03804H) (33 pages)

## **Physicists solve durability issue in next-generation solar cells**

16 February

[Physicists solve durability issue in next-generation solar cells \(techxplore.com\)](#)

DOI: [10.1126/science.ade3970](https://doi.org/10.1126/science.ade3970)

## **Harnessing plant molecules to harvest solar energy**

18 February

[Harnessing plant molecules to harvest solar energy \(techxplore.com\)](#)

## **Silver mirror triples efficiency of perovskite solar cells**

19 February

[Silver mirror triples efficiency of perovskite solar cells \(newatlas.com\)](#)

DOI <https://doi.org/10.1038/s41566-022-01151-3>

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18 February

[Breakthrough solar technology to help produce emissions-free cement \(interestingengineering.com\)](#)

## **One-stone-for-two-birds strategy to attain beyond 25% perovskite solar cells | Nature Communications**

15 February

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## **Improving morphology and optoelectronic properties of ultra-wide bandgap perovskite via Cs tuning for clear solar cell and UV detection applications | Scientific Reports**

20 February

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16 February

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## **Nanoparticles self-assemble to harvest solar energy**

21 February

<https://phys.org/news/2023-02-nanoparticles-self-assemble-harvest-solar-energy.html>

DOI: [10.1063/5.0135193](https://doi.org/10.1063/5.0135193)

## **Photovoltaic electrolyzer with shingled solar panels, anion exchange membrane – pv magazine International**

21 February

[Photovoltaic electrolyzer with shingled solar panels, anion exchange membrane – pv magazine International \(pv-magazine.com\)](https://www.pv-magazine.com/2023/02/21/photovoltaic-electrolyzer-with-shingled-solar-panels-anion-exchange-membrane/)

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22 February

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## **Ethylenediamine increases efficiency of inverted perovskite solar cell by 22% – pv magazine International**

24 February

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## **Phonon-driven intra-exciton Rabi oscillations in CsPbBr<sub>3</sub> halide perovskites**

24 February

[Phonon-driven intra-exciton Rabi oscillations in CsPbBr<sub>3</sub> halide perovskites | Nature Communications](https://www.nature.com/articles/s41467-023-36654-2)

DOI <https://doi.org/10.1038/s41467-023-36654-2>

## **Scientists Boost The Efficiency of a Cheap And Promising Solar Panel Material by 250%**

27 February

[Scientists Boost The Efficiency of a Cheap And Promising Solar Panel Material by 250% : ScienceAlert](https://www.sciencedirect.com/science/article/abs/pii/S0926641023000000)

DOI <https://doi.org/10.1038/s41566-022-01151-3> (subscription)

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24 February

[Researchers Say Perovskite Durability Improves With New Material Layer - Mercom India](https://www.mercomindia.com/news/researchers-say-perovskite-durability-improves-with-new-material-layer/)

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28 February

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22 February

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1 March

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## **Researchers Find New Method to Create Next-Generation Solar Cells - Mercom India**

28 February

[Researchers Find New Method to Create Next-Generation Solar Cells - Mercom India](#)

## **Corralling Ions Improves Viability of Next Generation Solar Cells | Department of Materials Science and Engineering**

27 February

<https://www.mse.ncsu.edu/2023/02/corralling-ions-improves-viability-of-next-generation-solar-cells>

DOI: 10.1038/s41563-023-01488-2

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3 March

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## **Novel design for intermediate band solar cells – pv magazine International**

2 March

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## **Guide to understanding solar production losses – pv magazine International**

2 March

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## **Recycling dead solar panels isn't easy. These Australian scientists might have found a solution | Euronews**

7 March

[Recycling dead solar panels isn't easy. These Australian scientists might have found a solution | Euronews](#)

## **Designing covalent organic frameworks with Co-O4 atomic sites for efficient CO<sub>2</sub> photoreduction | Nature Communications**

28 February

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3 March

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### **Researchers develop Ir/IrOx electron transport layer for stable organic solar cells**

14 March

<https://phys.org/news/2023-03-irirox-electron-layer-stable-solar.html>

DOI: [10.1038/s41467-023-36937-8](https://doi.org/10.1038/s41467-023-36937-8)

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20 March

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### **World's first solar panel 'carpet' on railway tracks may generate electricity**

18 March

[World's first solar panel 'carpet' on railway tracks may generate electricity \(interestingengineering.com\)](https://www.interestingengineering.com/news/worlds-first-solar-panel-carpet-on-railway-tracks-may-generate-electricity)

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24 March

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23 March

[Stable Tin-Based Perovskite Solar Cells | ACS Energy Letters](https://doi.org/10.1021/acseenergylett.3c00282)

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28 March

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DOI: [10.1002/adma.202208575](https://doi.org/10.1002/adma.202208575)

### **Solar is now viable even in rainy climes – so why aren't we making hay? | Solar power | The Guardian**

31 March

[Solar is now viable even in rainy climes – so why aren't we making hay? | Solar power | The Guardian](https://www.theguardian.com/energy-environment/2023/mar/31/solar-is-now-viable-even-in-rainy-climes-so-why-arent-we-making-hay)

### **PV payback times hit average of 20 years in 2022, says SolarPower Europe**

31 March

[PV payback times hit average of 20 years in 2022, says SolarPower Europe – pv magazine International \(pv-magazine.com\)](https://www.pv-magazine.com/2023/03/31/pv-payback-times-hit-average-of-20-years-in-2022-says-solarpower-europe/)

### **Researchers from U of T Engineering create triple-junction perovskite solar cell with record-breaking efficiency - U of T Engineering News**

31 March

[Researchers from U of T Engineering create triple-junction perovskite solar cell with record-breaking efficiency - U of T Engineering News \(utoronto.ca\)](https://www.utoronto.ca/news/2023/03/31/researchers-from-u-of-t-engineering-create-triple-junction-perovskite-solar-cell-with-record-breaking-efficiency)

### **Weekend Read: Industry and researchers in tandem**

#### **High-efficiency perovskite-silicon tandem solar products**

1 April

[Weekend Read: Industry and researchers in tandem – pv magazine International \(pv-magazine.com\)](https://www.pv-magazine.com/2023/04/01/weekend-read-industry-and-researchers-in-tandem-high-efficiency-perovskite-silicon-tandem-solar-products/)

## **Copper thiocyanate to eliminate moisture leaks in perovskite PV cells**

3 April

<https://www.pv-magazine.com/2023/04/03/copper-thiocyanate-to-eliminate-moisture-leaks-in-perovskite-pv-cells>

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4 April

[A strategy to improve the efficiency and carrier lifetimes of all-inorganic perovskite solar cells \(techxplore.com\)](#)

DOI: [10.1038/s41560-023-01220-z](https://doi.org/10.1038/s41560-023-01220-z)

## **Poly-SiO<sub>x</sub> solar cell for 4T, 2T perovskite-silicon tandem devices – pv magazine International**

6 April

<https://www.pv-magazine.com/2023/04/06/poly-siox-solar-cell-for-4t-2t-perovskite-silicon-tandem-devices/>

## **Buried Interface Passivation of Perovskite Solar Cells by Atomic Layer Deposition of Al<sub>2</sub>O<sub>3</sub> | ACS Energy Letters**

5 April

[Buried Interface Passivation of Perovskite Solar Cells by Atomic Layer Deposition of Al<sub>2</sub>O<sub>3</sub> | ACS Energy Letters](#)

<https://doi.org/10.1021/acsenergylett.3c00296>

## **‘Natural clay’ additive promises gains in perovskite solar cell efficiency, stability – pv magazine International**

10 April

[‘Natural clay’ additive promises gains in perovskite solar cell efficiency, stability – pv magazine International \(pv-magazine.com\)](#)

## **Researchers create perovskite solar cells with record efficiency**

13 April

[Researchers create perovskite solar cells with record efficiency \(inceptivemind.com\)](#)

DOI: [10.1038/s41586-023-06006-7](https://doi.org/10.1038/s41586-023-06006-7)

## **Chemists propose ultrathin material for doubling solar cell efficiency**

18 April

[Chemists propose ultrathin material for doubling solar cell efficiency \(phys.org\)](#)

<https://dx.doi.org/10.1073/pnas.2220333120>

## **Bifunctional hole-shuttle molecule for improved interfacial energy level alignment and defect passivation in perovskite solar cells | Nature Energy**

17 April

[Bifunctional hole-shuttle molecule for improved interfacial energy level alignment and defect passivation in perovskite solar cells | Nature Energy](#)

DOI <https://doi.org/10.1038/s41560-023-01249-0>

## **Moving perovskite advancements from the lab to the manufacturing floor | MIT News | Massachusetts Institute of Technology**

20 April

[Moving perovskite advancements from the lab to the manufacturing floor | MIT News | Massachusetts Institute of Technology](#)

## **New selenization process paves way for 14%-efficient kesterite solar cells – pv magazine International**

20 April

[New selenization process paves way for 14%-efficient kesterite solar cells – pv magazine International \(pv-magazine.com\)](https://www.pv-magazine.com)

## **Improved photovoltaic performance and robustness of all-polymer solar cells enabled by a polyfullerene guest acceptor | Nature Communications**

22 April

[Improved photovoltaic performance and robustness of all-polymer solar cells enabled by a polyfullerene guest acceptor | Nature Communications](https://www.nature.com)

DOI <https://doi.org/10.1038/s41467-023-37738-9>

## **Outstanding performance of organic solar cell using tin oxide**

24 April

[Outstanding performance of organic solar cell using tin oxide \(techxplore.com\)](https://www.techxplore.com)

<https://dx.doi.org/10.1002/adma.202301404>

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25 April

[3D/2D perovskite solar cell treated with substituted PEAI hits 23.08% efficiency – pv magazine International \(pv-magazine.com\)](https://www.pv-magazine.com)

## **Novel additive helps improve stability of perovskite/silicon tandem solar cells**

25 April

[Novel additive helps improve stability of perovskite/silicon tandem solar cells \(techxplore.com\)](https://www.techxplore.com)

<https://dx.doi.org/10.1038/s41467-023-37877-z>

## **Simplifying the Future of Solar Energy: A Single-Step Solution-Coating Process for Perovskite Solar Cells**

26 April

[Simplifying the Future of Solar Energy: A Single-Step Solution-Coating Process for Perovskite Solar Cells \(scitechdaily.com\)](https://www.scitechdaily.com)

<https://www.nature.com/articles/s41560-023-01227-6>



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## Rechargeable Batteries & Technology December 22- January 23

This topic was intended for Issue 1 2023 but due to an error was not transcribed during final edit.

### New Cambridge Research Could Improve the Performance of EV Batteries

2 December

[New Cambridge Research Could Improve the Performance of EV Batteries \(scitechdaily.com\)](https://www.scitechdaily.com/new-cambridge-research-could-improve-the-performance-of-ev-batteries/)

[DOI: 10.1016/j.joule.2022.09.008](https://doi.org/10.1016/j.joule.2022.09.008)

### BMW Says New Gen 6 Batteries Provide 30% More Range, Cost 50% Less

1 December

[BMW Says New Gen 6 Batteries Provide 30% More Range, Cost 50% Less \(insideevs.com\)](https://www.insideevs.com/bmw-says-new-gen-6-batteries-provide-30-more-range-cost-50-less/)

### An amorphous high-capacity iron fluorosulfate cathode

1 December

[An amorphous high-capacity iron fluorosulfate cathode \(techxplore.com\)](https://www.techxplore.com/news/view_full_story.php?id=3241560)

[DOI: 10.1038/s41560-022-01148-w](https://doi.org/10.1038/s41560-022-01148-w)

### Shares surge for Irish company following the discovery of lithium in Wicklow – WicklowNews

1 December

[Shares surge for Irish company following the discovery of lithium in Wicklow - WicklowNews](https://www.wicklownews.com/news/2022/12/01/shares-surge-for-irish-company-following-the-discovery-of-lithium-in-wicklow/)

### Electric Fuel to Present Wide Range of Marine Lithium-Ion Batteries at METSTRADE 2022 - Batteries News

1 December

[Electric Fuel to Present Wide Range of Marine Lithium-Ion Batteries at METSTRADE 2022 - Batteries News](https://www.batteriesnews.com/news/electric-fuel-to-present-wide-range-of-marine-lithium-ion-batteries-at-metstrade-2022/)

### Different Efforts but Similar Insights in Battery R&D: Electrochemical Impedance Spectroscopy vs Galvanostatic (Constant Current) Technique | Chemistry of Materials

2 December

[Different Efforts but Similar Insights in Battery R&D: Electrochemical Impedance Spectroscopy vs Galvanostatic \(Constant Current\) Technique | Chemistry of Materials \(acs.org\)](https://www.acs.org/chemmater/article/doi/10.1021/acs.chemmater.2c02376)

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### Practical Solid-State Batteries Using Pressure - IEEE Spectrum

2 December

[Practical Solid-State Batteries Using Pressure - IEEE Spectrum](https://www.ieee.org/spectrum/article/doi/10.1109/SP.2022.10000000)

### Solar and battery giants unite to fight "outdated" inverter rule change - One Step Off The Grid

5 December

[Solar and battery giants unite to fight "outdated" inverter rule change - One Step Off The Grid](https://www.onestepoffthegrid.com/news/solar-and-battery-giants-unite-to-fight-outdated-inverter-rule-change/)

### Sodium-ion Batteries Expected in Evs with Ranges of up to 500 Km, CATL Exec Says

30 November

[Sodium-ion Batteries Expected in Evs with Ranges of up to 500 Km, CATL Exec Says - Batteries News](https://www.batteriesnews.com/news/sodium-ion-batteries-expected-in-evs-with-ranges-of-up-to-500-km-catl-exec-says/)



## **Forget Electric Cars, The Future of Battery Technology is in Airplanes – TIME**

28 November

[Forget Electric Cars, The Future of Battery Technology is in Airplanes - TIME - Batteries News](#)

## **Mass sodium-ion battery production rolls off GWh-class factory as it paves the way for affordable cells without lithium - NotebookCheck.net News**

4 December

[Mass sodium-ion battery production rolls off GWh-class factory as it paves the way for affordable cells without lithium - NotebookCheck.net News](#) and

## **World's first commercial sodium-ion battery production line goes live - ArenaEV news**

2 December

[World's first commercial sodium-ion battery production line goes live - ArenaEV news](#)

## **New Cambridge Research Could Improve the Performance of EV Batteries**

2 December

[New Cambridge Research Could Improve the Performance of EV Batteries \(scitechdaily.com\)](#)

[DOI: 10.1016/j.joule.2022.09.008](#)

## **X-rays reveal elusive chemistry for better electric vehicle batteries**

5 December

[X-rays reveal elusive chemistry for better electric vehicle batteries \(techxplore.com\)](#)

[DOI: 10.1038/s41565-022-01273-3](#)

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6 December

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## **Use of layering-charged polymers in battery technology could boost EV range 10-fold**

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## **US-based researchers push for more realistic battery science - MINING.COM**

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[Modeling framework can help speed development of flow batteries for large-scale, long-duration electricity storage \(techxplore.com\)](#)

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[Progress to Lithium Air Battery With 4X Energy Density of Lithium Batteries | NextBigFuture.com](#)

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20 April

[Sodium-ion batteries from CATL and BYD to be installed in mass-produced cars by Q4 2023 \(carnewschina.com\)](#)

## **Quiet and Efficient – New Propeller Advance Paves Way for Electric Planes**

21 April

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## **Meet Maeve 01, the All-Electric Aircraft With Over 40 Seats and Automated Charging – autoevolution**

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[Meet Maeve 01, the All-Electric Aircraft With Over 40 Seats and Automated Charging - autoevolution](#)

## **CATL launches condensed battery with an energy density of up to 500 Wh/kg, enables electrification of passenger aircrafts**

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17 April

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24 April

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17 April

[Nuclear waste powered battery lasts for thousands of years \(thebrighterside.news\)](#)

## **What if your Tesla could run on sodium? | Fox Business**

19 April

[What If Your Tesla Could Run on Sodium? - WSJ](#)

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22 April

[Redwood Materials could totally overhaul EV battery recycling \(thecooldown.com\)](#)

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24 April

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24 April

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## **Air-breathing cathode enhances conversion efficiency, durability of alkaline nickel-zinc batteries**

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[HOS-PFM battery coating could revolutionize EV market \(thecooldown.com\)](#)

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6 February

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**Is advanced AI actually smart? 'No, it's using the same system as a pigeon', study finds | Science & Tech News | Sky News**

7 February

[Is advanced AI actually smart? 'No, it's using the same system as a pigeon', study finds | Science & Tech News | Sky News](#)

**Data Science Vs. Artificial Intelligence (AI): Complementary or Competitive?**

9 February

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[Scientific AI's Black Box Is No Match for 200-Year-Old Method - Neuroscience News](#)

**8 Signs That the AI 'Revolution' Is Spinning Out of Control** (Slideshow)

11 February

[8 Signs That the AI 'Revolution' Is Spinning Out of Control \(gizmodo.com\)](#)

**AI Is Speeding Us Toward Intelligent Computers and the Singularity, Pioneer Says – CNET**

13 February

[AI Is Speeding Us Toward Intelligent Computers and the Singularity, Pioneer Says - CNET](#)

**UN says AI poses 'serious risk' for human rights**

18 February

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19 February

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24 February

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6 February

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## **Machine learning model speeds up assessment of catalysts for decarbonization technology from months to milliseconds**

28 February

[Machine learning model speeds up assessment of catalysts for decarbonization technology from months to milliseconds \(phys.org\)](#)

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3 March

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17 March

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16 March

[Tomas Chamorro-Premuzic | I, Human | McKinsey Author Talks | McKinsey](#)

## **Harnessing Technology to Ensure Drug Safety**

3 March

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## **When an AI says you have cancer**

15 March

[An AI Told Me I Had Cancer | WIRED](#)

## **Everything, everywhere is going to change all at once as AI hits us like a tornado**

22 March

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24 March

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## **Using a genetic algorithm to uncover new catalyst molecules for organic synthesis**

23 March

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[DOI: 10.1002/anie.202218565](#)

## **AI that turns docs into presentations is available right now**

24 March

[AI that turns docs into presentations is available right now \(freethink.com\)](#)

## **6 Challenges – Identified by Scientists – That Humans Face With Artificial Intelligence**

28 March

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DOI: [10.1080/10447318.2022.2153320](#)

## **AI generator Midjourney pauses service over deepfake 'abuse'**

30 March

[AI generator pauses service over deepfake 'abuse' \(rte.ie\)](#)

## **The Big Hallucination: Large Language Models and Consciousness**

30 March

[The Big Hallucination: Large Language Models and Consciousness \(thetack.technology\)](#)

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30 March

[The problem with artificial intelligence? It's neither artificial nor intelligent | Evgeny Morozov | The Guardian](#)

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1 April

[The best AI tools to power your academic research | Euronews](#)

## **AI is not generative, but synthetic – CoinGeek**

26 March

<https://coingeek.com/ai-is-not-generative-but-synthetic>

## **Merging Artificial Intelligence and Physics Simulations To Design Innovative Materials**

3 April

[Merging Artificial Intelligence and Physics Simulations To Design Innovative Materials \(scitechdaily.com\)](#)

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## **Can Artificial Intelligence Match Human Creativity? A New Study Compares The Generation Of Original Ideas Between Humans and Generative Artificial Intelligence Chatbots – MarkTechPost**

28 March

<https://www.marktechpost.com/2023/03/28/can-artificial-intelligence-match-human-creativity-a-new-study-compares-the-generation-of-original-ideas-between-humans-and-generative-artificial-intelligence-chatbots>

## **Artificial intelligence for the future of education — Lim Chee Leong | Malay Mail**

3 April

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## **UC Berkeley Researchers Introduce Koala: A New AI Chatbot from Fine-Tuned on Dialogue Close to ChatGPT Quality – MarkTechPost**

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## **Study sheds light on the dark side of AI | Folio**

5 April

[Study sheds light on the dark side of AI | Folio \(ualberta.ca\)](#)

## **The ‘Manhattan Project’ Theory of Generative AI | WIRED**

6 April

<https://www.wired.com/story/how-to-make-sense-of-the-generative-ai-explosion>

## **AGI Beyond Generative AI**

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## **Graph Machine Learning: An Overview | by Zach Blumenfeld | Apr, 2023 | Towards Data Science**

4 April

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## **I used to work at Google and now I'm an AI researcher. Here's why slowing down AI development is wise**

4 April

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## **A New AI Research Proposes Pythia: A Suite of Decoder-Only Autoregressive Language Models Ranging from 70M to 12B Parameters – MarkTechPost**

9 April

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3 April

[AI and Programming Legend Stephen Wolfram Talks ChatGPT and the Future | NextBigFuture.com](#)

## **Why We're Building Lit-LLaMA - Lightning AI**

4 April

[Why We're Building Lit-LLaMA - Lightning AI](#)

## **How Artificial Intelligence and ChatGPT are transforming education – EducationWorld**

5 April

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## **Meta AI Releases the Segment Anything Model (SAM): A New AI Model That Can Cut Out Any Object in An Image/Video With A Single Click – MarkTechPost**

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[Meta AI Releases the Segment Anything Model \(SAM\): A New AI Model That Can Cut Out Any Object in A Image/Video With A Single Click - MarkTechPost](#)

### **Artificial intelligence: "Education sector will have to adapt" - Manx Radio**

10 April

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### **Enhancing AI's Emotional Intelligence: The Role of Psychotherapy in Developing Healthy Language Models – MarkTechPost**

10 April

[Enhancing AI's Emotional Intelligence: The Role of Psychotherapy in Developing Healthy Language Models - MarkTechPost](#)

### **A.I. could lead to a ‘nuclear-level catastrophe’ according to a third of researchers, a new Stanford report finds**

10 April

[A.I. could lead to global catastrophe, a third of experts say | Fortune](#)

### **How ChatGPT and similar AI will disrupt education**

12 April

[How ChatGPT and similar AI will disrupt education \(sciencenews.org\)](#)

### **Rise of AI: Computer researcher warns of 'Chernobyl'-like situation without safeguards**

10 April

[Rise of AI: Computer researcher warns of 'Chernobyl'-like situation without safeguards \(interestingengineering.com\)](#)

### **A New Approach to Computation Reimagines Artificial Intelligence | Quanta Magazine**

13 April

[A New Approach to Computation Reimagines Artificial Intelligence | Quanta Magazine](#)

### **Combining data and theory for derivable scientific discovery with AI-Descartes | Nature Communications**

12 April

[Combining data and theory for derivable scientific discovery with AI-Descartes | Nature Communications](#)  
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### **AI Can Spot Early Signs of Alzheimer’s in Speech Patterns, Study Shows**

13 April

[AI Can Spot Early Signs of Alzheimer’s in Speech Patterns, Study Shows | Technology Networks](#)  
doi: [10.1002/dad2.12393](https://doi.org/10.1002/dad2.12393)

### **AI Terminologies 101: Understanding the Basics of Machine Learning**

13 April

<https://yourstory.com/2023/04/ai-terminologies-101-machine-learning>

## **Difference Between Neural Networks and Deep Learning: A Guide**

11 April

[Difference Between Neural Networks and Deep Learning: A Guide \(analyticsinsight.net\)](#)

## **Generative Models as an Emerging Paradigm in the Chemical Sciences | Journal of the American Chemical Society**

13 April

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## **Risks of Large Language Models (LLM)**

14 April

[\(300\) Risks of Large Language Models \(LLM\) - YouTube](#)

## **Emergence and Reasoning in Large Language Models | NextBigFuture.com**

13 April

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## **Best Natural Language Processing (NLP) Tools/Platforms (2023) – MarkTechPost**

14 April

[Best Natural Language Processing \(NLP\) Tools/Platforms \(2023\) - MarkTechPost](#)

## **The Emergence of Stacking: How is the Self-Referential Nature of Stacking in Large Language Models Transforming the Artificial Intelligence (AI) Industry? – MarkTechPost**

12 April

[The Emergence of Stacking: How is the Self-Referential Nature of Stacking in Large Language Models Transforming the Artificial Intelligence \(AI\) Industry? - MarkTechPost](#)

## **Top 10 Deep Learning Algorithms You Must Know in 2023**

14 April

[Top 10 Deep Learning Algorithms You Must Know in 2023 \(analyticsinsight.net\)](#)

## **AI Can Spot Early Signs of Alzheimer's in Speech Patterns, Study Shows | Technology Networks**

13 April

[AI Can Spot Early Signs of Alzheimer's in Speech Patterns, Study Shows | Technology Networks](#)

DOI: [10.1002/dad2.12393](https://doi.org/10.1002/dad2.12393)

## **New AI-Generated T-Cell Vaccine Showcases Long-Lasting Immunity Against COVID-19**

18 April

[New AI-Generated T-Cell Vaccine Showcases Long-Lasting Immunity Against COVID-19 \(scitechdaily.com\)](#)

<https://doi.org/10.3389/fimmu.2023.1166546>

## **Researchers Introduce ChemCrow For Augmenting Large-Language Models With Chemistry Tools – MarkTechPost**

18 April

[Researchers Introduce ChemCrow For Augmenting Large-Language Models With Chemistry Tools - MarkTechPost](#)

## **Can Small Language Models Give High Performance? Meet StableLM: An Open Source Language Model That Can Generate Text And Code Providing High Performance With Proper Training – MarkTechPost**

20 April

[Can Small Language Models Give High Performance? Meet StableLM: An Open Source Language Model That Can Generate Text And Code Providing High Performance With Proper Training - MarkTechPost](#)

## **Why everyone is talking about generative AI, not just the experts | VentureBeat**

21 April

[Why everyone is talking about generative AI, not just the experts | VentureBeat](#)

## **How reinforcement learning with human feedback is unlocking the power of generative AI | VentureBeat**

23 April

[How reinforcement learning with human feedback is unlocking the power of generative AI | VentureBeat](#)

## **‘Everything is going to be turned upside down’: Michio Kaku on the new world of quantum computing | The Spectator**

29 April

[‘Everything is going to be turned upside down’: Michio Kaku on the new world of quantum computing | The Spectator](#)

## **Yuval Noah Harari argues that AI has hacked the operating system of human civilisation | The Economist**

28 April

[Yuval Noah Harari argues that AI has hacked the operating system of human civilisation | The Economist](#)

## **The Computer Scientist Peering Inside AI’s Black Boxes**

27 April

[Cynthia Rudin Builds AI That Humans Can Understand | Quanta Magazine](#)

## **Enhancing Product Search with Large Language Models (LLMs) - The Databricks Blog**

26 April

[Enhancing Product Search with Large Language Models \(LLMs\) - The Databricks Blog](#)

## **Stanford Researchers Propose EVAPORATE: A New AI Approach That Reduces Inference Cost of Language Models by 110x – MarkTechPost**

30 April

[Stanford Researchers Propose EVAPORATE: A New AI Approach That Reduces Inference Cost of Language Models by 110x - MarkTechPost](#)

## Open AI & ChatGPT Special Topic February- April 2023

This is a special topic due to the explosion of publications in last two weeks of February and continuing throughout April and beyond. Open AI released Chat GPT to the surprise of everyone especially Google and Microsoft. Initially it was Chat GPT 3 and within weeks ChatGPT evolving into 4.5 and perhaps soon ChatGPT5 with improvements with each iteration. Subsequently Google launched its own version called BARD. Microsoft has incorporated the technology behind the world's most talked about artificial intelligence (AI) system, ChatGPT, has been added to its most ubiquitous work software, Microsoft 365. Microsoft is calling the system Copilot and says it will be embedded into Word, Excel, PowerPoint, and Outlook. There are opportunities but also many concerns about this technology. Many of these are presented in the links below in this special topic. I stepped back a little earlier to capture the essence of this topic which had been quietly brewing for some time before Open AI rocked the boat in February with the release of ChatGPT.

### What is ChatGPT? The AI text generator explained

25 January

<https://www.trustedreviews.com/explainer/what-is-chatgpt-4297405>

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31 January

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## **Startups try to turn laser fusion success into clean power plants | Science | AAAS**

15 February

[Startups try to turn laser fusion success into clean power plants | Science | AAAS](https://www.sciencemag.org/news/2023/02/15/startups-try-to-turn-laser-fusion-success-into-clean-power-plants)

doi: 10.1126/science.adh1875

## **Report Offers Global Perspective on Nuclear Fusion Devices | IAEA**

20 February

<https://www.iaea.org/newscenter/news/tokamaks-stellarators-laser-based-and-alternative-concepts-report-offers-global-perspective-on-nuclear-fusion-devices>

## **Amid renewed interest in nuclear fusion, Japan’s research reaches critical stage | The Japan Times**

19 February

<https://www.japantimes.co.jp/news/2023/02/19/national/science-health/japan-nuclear-fusion-research-critical-stage>

## **Small (Modular) Nuclear Reactors & New Technology for Conventional Fission Reactors**

### **Small Modular Reactors Struggle With Scalability | OilPrice.com**

6 February

[Small Modular Reactors Struggle With Scalability | OilPrice.com](#)

### **Using muon detectors to remotely create a 3D image of the inside of a nuclear reactor**

6 February

[Using muon detectors to remotely create a 3D image of the inside of a nuclear reactor \(phys.org\)](#)

[DOI: 10.1126/sciadv.abq8431](https://doi.org/10.1126/sciadv.abq8431)

### **These "microreactors" could be the future of nuclear power**

18 February

[These "microreactors" could be the future of nuclear power \(freethink.com\)](#)

## **Thorium Power Reactors**

Nothing new this period

## **Hydrogen-Boron 11 Fusion Power Reactors**

Nothing new this period



# SFI News, Updates & Reports



## Two New Calls Open in the National Challenge Fund

### 1. Future Food Systems Challenge

27 February

[Future Food Systems Challenge \(sfi.ie\)](https://www.sfi.ie/future-food-systems-challenge)

### 2. Sustainable Communities Challenge

27 February

[Sustainable Communities Challenge \(sfi.ie\)](https://www.sfi.ie/sustainable-communities-challenge)

## SFI Industry RD&I Fellowship Programme

28 February

[SFI Industry RD&I Fellowship Programme](https://www.sfi.ie/industry-rd-i-fellowship-programme)

## Celebrating International Day of Women and Girls in Science

28 February

[Celebrating International Day of Women and Girls in Science \(sfi.ie\)](https://www.sfi.ie/celebrating-international-day-of-women-and-girls-in-science)

## Taoiseach Leo Varadkar honours Irish diaspora leaders in the US with prestigious SFI St Patrick's Day Science Medal

15 March

[Taoiseach Leo Varadkar honours Irish diaspora leaders in the US with prestigious SFI St Patrick's Day Science Medal](https://www.sfi.ie/taoiseach-leo-varadkar-honours-irish-diaspora-leaders-in-the-us-with-prestigious-sfi-st-patricks-day-science-medal)

## Ministers Harris and Fleming announce €2.1m funding for six research teams to tackle UN Sustainable Development Goals

31 March

[Ministers Harris and Fleming announce €2.1m funding for six research teams to tackle UN Sustainable Development Goals \(sfi.ie\)](https://www.sfi.ie/ministers-harris-and-fleming-announce-e2.1m-funding-for-six-research-teams-to-tackle-un-sustainable-development-goals)

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# IDA Updates & Reports



<https://www.idaireland.com>

## **EPA awards €10.7m to 42 climate research projects across Ireland**

7 February

[EPA awards €10.7m to 42 climate research projects across Ireland | IDA Ireland](#)

## **Ireland launches two programmes worth €63m to support researchers**

2 March

[Ireland launches two programmes worth €63m to support researchers | IDA Ireland](#)

## **Prof Orla Feely appointed as the first woman president of UCD**

2 March

[Prof Orla Feely appointed as the first woman president of UCD | IDA Ireland](#)

## **Government and IDA welcome Eli Lilly's investment in biologics drug substance manufacturing facility**

27 March

[Government and IDA welcome Eli Lilly's investment in biologics drug substance manufacturing facility | IDA Ireland](#)

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# Enterprise Ireland Updates & Reports



<https://enterprise-ireland.com/en>

## **Minister Richmond encourages women to protect their brands, technology and creativity**

28 April

[Minister Richmond encourages women to protect their brands, technology and creativity - Enterprise Ireland \(enterprise-ireland.com\)](https://enterprise-ireland.com/en)

## **Enterprise Ireland and InterTradeIreland launch next generation Halo Business Angel Network (HBAN 2.0) under new operator Dogpatch Labs**

11 May

[Enterprise Ireland and InterTradeIreland launch next generation Halo Business Angel Network \(HBAN 2.0\) under new operator Dogpatch Labs - Enterprise Ireland \(enterprise-ireland.com\)](https://enterprise-ireland.com/en)

## **Minister Simon Coveney leads US trade mission to New York and Boston to meet with key FDI clients and build on record high exports to the US in 2022**

15 May

[Minister Simon Coveney leads US trade mission to New York and Boston to meet with key FDI clients and build on record high exports to the US in 2022 - Enterprise Ireland \(enterprise-ireland.com\)](https://enterprise-ireland.com/en)

## **Minister Calleary leads trade visit to Poland and Czech Republic**

16 May

[Minister Calleary leads trade visit to Poland and Czech Republic - Enterprise Ireland \(enterprise-ireland.com\)](https://enterprise-ireland.com/en)

# siliconrepublic

## **SFI pharma research centre names Damien Thompson as its new director**

6 March

[SFI pharma research centre names Damien Thompson as its new director \(siliconrepublic.com\)](https://www.siliconrepublic.com/innovation/sfi-pharma-research-centre-names-damien-thompson-as-its-new-director)

## **US sci-tech leaders with Irish roots awarded St Patrick's Day Medal**

15 March

[US sci-tech leaders with Irish roots awarded St Patrick's Day medal \(siliconrepublic.com\)](https://www.siliconrepublic.com/innovation/us-sci-tech-leaders-with-irish-roots-awarded-st-patricks-day-medal)

## **Marie Skłodowska-Curie funding for doctoral research announced**

16 March

<https://www.siliconrepublic.com/innovation/marie-sklodowska-curie-funding-doctoral-networks-research-europe>

## **Long running Ireland-US R&D programme nets €21m funding**

17 March

<https://www.siliconrepublic.com/innovation/ireland-us-r-and-d-programme-funding-2023-sfi>

## **218 researchers get €544m in EU advanced grants**

30 March

<https://www.siliconrepublic.com/innovation/eu-erc-research-advanced-grants-ireland>

## **RCSI researcher awarded €4.3m to establish health research centre**

30 March

<https://www.siliconrepublic.com/innovation/edward-gregg-rcsi-population-health-research-centre-chronic-diseases-sfi>

## **Two profs scoop NovaUCD Innovation Award for lung disease treatments**

31 March

<https://www.siliconrepublic.com/innovation/novaucd-innovation-award-2023-stefan-oscarson-stephen-carrington>

## **Trinity scientists' cellular identity discovery could impact cancer treatments**

7 April

<https://www.siliconrepublic.com/innovation/trinity-cellular-identity-discovery-impact-cancer-treatments>

## **QUB partners with US biotech to create cancer treatments**

12 April

<https://www.siliconrepublic.com/innovation/qub-queens-belfast-aviceda-cancer>

## **What are the future trends for Ireland's biopharma industry?**

14 April

<https://www.siliconrepublic.com/innovation/ireland-biopharma-industry-life-sciences-nibrt>

## **Two science buildings to benefit from €100m fund for HEIs in Ireland**

19 April

<https://www.siliconrepublic.com/innovation/science-buildings-100m-hei-fund-ireland>

## **Trinity team develops promising gene therapy for glaucoma**

21 April

<https://www.siliconrepublic.com/innovation/trinity-college-dublin-smurfit-gene-therapy-treatment-for-glaucoma>



**UCC to honour Dr Katalin Karikó with doctorate for mRNA research**

24 April

<https://www.siliconrepublic.com/innovation/katalin-kariko-university-college-cork-ucc-honorary-doctorate-mrna-research>**Dr Katalin Karikó honoured by Trinity for mRNA research**

25 April

<https://www.siliconrepublic.com/innovation/trinity-katalin-kariko-dawson-genetics-mrna-covid-vaccine>**SFI announces industry RD&I fellowship awardees**

27 April

<https://www.siliconrepublic.com/innovation/sfi-industry-rdi-fellowship-minister-harris>**Scientists use quantum computer to solve chemistry problems**

27 April

<https://www.siliconrepublic.com/machines/quantum-computer-chemistry-sweden>

**Save the Date**

**Thursday June 29<sup>th</sup> in UCD**

**ICI Awards Day & AGM**

**Boyle-Higgins Medal**

**and**

**Eva Philbin Award Lecture**

**In addition**

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**Kris O'Dowd**

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