

Irish Chemical News

A Journal of the Institute of Chemistry of Ireland

75th Irish Universities Chemistry Research Colloquium



Winners at the 75th Irish Universities Chemistry Research Colloquium

ECC-9 Big Success Dublin 2024



IRISH CHEMICAL NEWS ISSUE NO.3 JULY 2024



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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Contents:

Title I	Page
ICI & ECC-9 Sponsors	4
A Message from the President	7
Editorial	9
75th Irish Universities Chemistry Research Colloquium	11
ICI Irish Young Chemists Network Committee 2023/24	35
ICI-Young Chemists' Network Young Chemists for Change Conference (YCFC)	37
University Sector News	39
General Chemistry	41
Organic Chemistry, Synthesis and Catalyst Chemistry	50
Analytical Chemistry, Sensors, Diagnostics & Spectroscopy	60
Advertising for ICI Sponsors & Supporters	66
Material Chemistry & Sciences	76
Superconductivity Addendum to Material Chemistry	83
Electrochemistry, Battery Chemistry & Technology	84
Photochemistry Solar Cell Chemistry & Technology	90
Chemistry & Artificial Intelligence	96
Medicinal Chemistry, Chemical Biology, Life Sciences, Drug Discovery, Bioinorganic Chemistry	103
Green Hydrogen, Hydrogen Electrolysers, Fuel Cells, Chemistry & Technology, Green Ammonia	111
Climate Change, Environment, Sustainability & Related Topics	116
Biotechnology with a Chemistry Emphasis	127

Title	Page
Science & Truth, Trust, Science Communication & Scientific Publishing	130
ChemistryViews	135
Nuclear Fusion Power - Developments in Nuclear Technology	136
Modular Nuclear Reactors & New Technology for Conventional Fission Reactors	139
Thorium Nuclear Reactors; Hydrogen-Boron 11 Fusion Power Reactors	140
EuChemS Updates	141
European research Council, ERC	149
Irish research Council, IRS	150
CAS Insights	153
SFI News, Updates & Reports	154
IDA Updates & Reports	166
Enterprise Ireland Updates & Reports	174

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Asynt 2



Do visit the EuChemS web page for active links to these supporter web sites:

https://euchems2024.org/opportunities-to-support/sponsors-exhibitors

Congress PCO & Venue







A Message from the President

Dear Fellows, Members, Graduates and Associates,

In this issue, you will find details of the 75th Irish Universities Chemistry Research Colloquium which was hosted at Trinity College Dublin on the 17th-18th June 2024 by the School of Chemistry under the aegis of the Institute of Chemistry of Ireland. There was a great series of oral and poster presentations from PhD students across the island as well as plenary speakers from home and abroad (Professor Dorota Gryko, Polish Academy of Sciences; Professor Chris Batchelor-McAuley, Trinity College Dublin; Professor Serena Cussen, University College Dublin and Dr. Marc Kielmann, Beilstein Institut). I was delighted to attend this Colloquium and to present the winners of poster and oral presentations with certificates. A special thanks to Professor Mathias Senge and the organising committee in TCD for their superb organisation of this important event in the Chemistry calendar in Ireland.

I and other colleagues in the ICI were delighted with the success of the 9th EuChemS Congress held in the Convention Centre in Dublin 7-11 July. The feedback from attendees and participants was uniformly positive and this Congress will be the focus on an upcoming Special issue of the ICN.

Many thanks to the ICI Young Chemists' Network (YCN) who continue to work hard to provide support to the younger members of our community. Many thanks to Aaron McCormack, University College Dublin of Galway who has taken on the role of Chair of the YCN. The YCN organised a very successful two-day meeting on 'Advancing Equity in Chemistry" which was held in University College Dublin on 30th and 31st May and a short report, with photographs, on this event can be found in this issue. Please do get in contact with the YCN if there are items you wish to highlight or events you wish to organise.

A series of recent publications from across the breadth of chemistry are collated with links for your convenience and I hope that that you find some of these articles of interest. In addition, details of the announcement of important recent research funding awards, as well as the launch of Taighde Éireann - Research Ireland, are given in this issue.

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.

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

19th August, 2024



Editorial

Editorial

This Issue covers the months May to July. It has been a very busy period for the institute with the Universities Chemistry Colloquium in June and preparations and hosting of the European Chemistry Congress ECC-9 in July. The 75th Irish Universities Chemistry Research Colloquium is extensively covered in this Issue with plenty of photographs, thanks to students taking most of them. I did attend the afternoon of the second day and photographed the winners being presented with certificates by ICI President, Prof Pat Guiry. I have some comments at the end of this Editorial on the ECC-9 and will shortly have a Special Issue to cover the event. It has been a long saga getting this Congress to Dublin.

There is a short report from the ICI IYCN on first ICI-Young Chemists' Network Young Chemists for Change conference (YCFC) and an update on the members of IYCN committee for 2023/24.

Some changes have been made to the titles of some sections. One is:

- Medicinal Chemistry, Chemical Biology, Life Sciences, Drug Discovery changes to:
- Medicinal Chemistry, Chemical Biology, Life Sciences, Drug Discovery and Bioinorganic Chemistry.

IBICS's logo has been placed in the header for this section. This is to reflect the growing importance of this area of research.

The second change concerns scientific publishing. These publishers are having serious problems with retractions, paper mills, plagiarism and detecting AI generated paper submissions. This section changes from:

- Science & Truth, Trust, Science Communication to
- Science & Truth, Trust, Science Communication & Scientific Publishing

reflecting the coverage in the press of these concerns about the problems with scientific publishing.

The addendum in the Material Chemistry and Science section is retained as there is still controversary on this topic. The promised South Korean paper has not appeared yet but there are genuine researchers working hard to overcome the challenges of high temperature superconductivity and they deserve coverage for their efforts and dubious claims is so unfair to them.

The remaining sections are self-explanatory and don't need further commentary.

A Great Success European Chemistry Congress (ECC-9), Dublin July 7 -11

Theme was:

"Chemistry Addressing Current and Future Global Challenges"

Hosting the EuChemS Chemistry Congress ECC-9 was the biggest and most historic chemistry event ever organized by the Institute of Chemistry of Ireland.



The graphic above gives an overall summary and much more detail can be found on the Congress website <u>https://euchems2024.org</u>. and the Congress App. This was an opportunity for chemists all over Europe and further afield to present their latest research, to meet, network and enjoy a very exciting conference. There was a special Industry Day on the Wednesday of the Congress supported by Irish pharma industry.

It is highly unlikely such a large event will be held in Ireland for a long time again. We had over 1650 registrations, but the numbers were hampered by lack of funding for British Universities to enable colleges to fund travel to conferences. However, we did have great support from the Royal Society of Chemistry along with the America Chemical Society as Platinum Sponsors which enabled us to host this biannual Congress. A Special Congress Issue of ICN will follow shortly.

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

editor@instituteofchemistry.org

Institute of Chemistry of Ireland (chemistryireland.org)

Patrick Hobbs MSc, FICI, CChem, CSci, MRSC. Editor Irish Chemical News 14 August 2024

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

75th Irish Universities Chemistry Research Colloquium

17/18th June 2024, Trinity College Dublin

Run annually under the aegis of the Institute of Chemistry of Ireland



Opening Welcome to the 75th IUCRC Colloquium!

After the successful event last year at U Galway, the organising committee has worked to maintain the structure and give the opportunity to all final year PhD students to give an oral presentation. We have 38 Talks in two parallel sessions and a Poster Session with 65 Posters. The latter will be followed by a reception where we expect that all attendees can socialise and get to know each other. We also have four prominent Plenary Speakers, Prof. Serena Cussen, Prof. Batchelor-McAuley, Prof. Dorota Gryko, and Dr Kielmann, each representing different areas of research and expertise and this year's ICI PG awardee Dr Ellen Faye. The next pages have the Schedule, List of Presenters and Titles and the List of Abstracts. We hope you have a good time at the Colloquium and get some good ideas for your Chemistry research. But first we set out formally our Dignity and Respect Responsibilities.

Organising Committee:

Prof. Mathias O. Senge, Prof. Larisa Florea, Prof. Richard Hobbs, Dr. Karolina Urbanska, Dr. Jason Delente, Dr. Sinead Boyce, Ben Power, Manting Mu.

75th Irish Universities Chemistry Research Colloquium

	June 17th	
Room	L2.15 Tercentenary	B1.15 St. Quek
08:30 - 09:15	Registration	
09:15 - 09:30	Conference opening	
	Prof. Graeme Watson Prof. Serena Cussen	
09:30 - 10:30	Chair: Graeme Watson	
10:30 - 11:00	Coffee brea	k / poster setup
11:00 - 13:00	Organic Synthesis Chair: Nessan Kerrigan	Materials for Energy Chair: Mercedes Vazquez
	Evan Judge (UCC)	Keith Sirengo (ATU)
	Aoibheann O'Connor (UCD)	Ryan Walden (ATU)
	Fionn McNeill (UCD)	Eva Naughton (UCD)
	Dara Curran (UCD)	Filippo Pota (TCD)
	Adam O'Connell (UCD)	Irthasa Aazem VS (ATU)
	Kathryn Yeow (UCD)	Karlijn Hertsig(TCD)
13:00 - 14:30	Lunch brea	ak local outlets
	Prof. Chris Batchelor	
14:30 - 15:15	McAuley Paula Colavita	
15:15 - 17:05	Organic Synthesis Chair: Mathias Senge	Functional Materials Chair: Richard Hobbs
	Dandan Lin (UCD)	Amit Goswami (ATU)
	Arlene Bonner (UCD)	Annaël Sort-Montenegro (TCD)
	Rachel O'Sullivan (UCD)	Abhijit Wickramasinghe (TUD)
	Kate Donaghy (UCD)	Amrutha Augustine (TCD)
	Hong Ann Gan (TUS)	Luisa Lavelle (TCD)
17:05 - 17:15	ICI YCN - AGM	
17:15 - 19:00	Poste	r session
19:30 - 22:00	Social ever	ning (Pav TCD)
	June 18th	- Solra - Ek
Room	L2.15 Tercentenary	B1.15 St. Quek
09:00 - 10:00	Prof. Dorota Gryko	
10.00 11.00	Medicinal Chemistry	(Bio)Materials Discovery
10:00 - 11:20	Chair: Diego Montagner	Chair: Larisa Florea
	Conor Shine (RCSI)	Manting Mu (TCD)
	Shubhangi Kandwal (TCD)	Keelan Byrne (MU)
	John Connolly (RCSI)	Cian Clarke (TCD)
	Mairead Gallagher (TUD)	Maria Byrne (UCD)
11:20 - 11:50	Coff	ee break
11:50 - 13:10	Chair: Roisin O'Flaherty	(BIO)Materials Discovery Chair: Suresh Pillai
	Darren Beirne (MU)	Mariana Diniz (UL)
	Connie Sigurvinsson (TCD)	Enrico Spoletti (UL)
	Clara Evans (MU)	Athira Tomy (MU)
	Grace Lawler (TUS)	Usaid Azhar (ATU)
13:10 - 13:30	Ellen Faye – ICI PG Awardee	
13:30 - 14:15	Dr. Marc Kielmann Chair: Mathias Senge	
14:15 - 14:30	Closing and Prize Awards Prof. Pat Guiry	

17th & 18th June 2024, Trinity Biomedical Sciences Institute





List of Oral Presenters and Seminar Titles

L2.15 Tercentena	ry 17 th 、	June 2024	
11:00-13:00 Orga	nic Synt	hesis	
Evan Judge	UCC	α-Diazo-β-keto sulfonamides: Design and Reactivity	01
Aoibheann O'Connor	UCD	A New Paradigm for the Asymmetric Diels-Alder Reaction	02
Fionn McNeill	UCD	Enantioselective Synthesis of Sterically Hindered α-Allyl-α-Aryl O-Heterocycles via Decarboxylative Asymmetric Allylic Alkylation	O3
Dara Curran	UCD	Phosphine-Mediated Hydrolytic Etherification of Alcohols and Aromatic Aldehydes	04
Adam O'Connell	UCD	Biocatalytic Routes to Complex N-Heterocycles	05
Kathryn Yeow	UCD	Biocatalytic Cascades for the Synthesis of Therapeutic Iminosugars from Monosaccharides	06
B1.15 St. Quek 17	th June	2024	
11:00-13:00 Mater	rials for	Energy	
Keith Sirengo	ATU	Exploring the effect of aging ether-based electrolyte on the cycle life of lithium metal batteries	07
Ryan Walden	ATU	Effects of Non-thermal Plasma Treatments on Commercial Fabrics for Application in Textile Triboelectric Nanogenerators	08
Eva Naughton	UCD	Heterogeneous catalysts for promotion of Artificial Photosynthesis	09
Filippo Pota	TCD	Carbon-encapsulated metal N-doped porous materials: A promising architecture for electrocatalytic hydrogenation of biomass derivative organics	010
Irthasa Aazem VS	ATU	Ceramic fillers incorporated Polyvinylidene Fluoride (PVDF) and Nylon-6 Polymer nanocomposites for Self-powered Triboelectric Nanogenerators (TENGs)	011
Karlijn Hertsig	TCD	Towards Sustainable Nanomaterials: Greener Routes to Quantum and Carbon Dots	012
L2.15 Tercentena	ry 17th	June 2024	
15:15-17:05 Orga	nic Synt	hesis	
Dandan Lin	UCD	An Electrochemical Oxidation Prins-Type Cyclisation sequence for the Construction of 1,3- Oxazinan-2-ones via N-Acyliminium Ions	013
Arlene Bonner	UCD	The Integration of Continuous Flow Technology with Strained Cyclic Systems	014
Rachel O'Sullivan	UCD	The Development of Novel Ferrocenyl Compounds via Acid-Mediated Transformations and the Diastereoselective Synthesis of a Novel Indene	015
Kate Donaghy	UCD	Stereoselective Synthesis of a-Glycosides	016
Hong Ann Gan	TUS	Laccase Oxidation Studies	017
B1.15 St. Quek 17	th June	2024	
15:15-17:05 Func	tional M	aterials	
Amit Goswami	ATU	Superhydrophobic candle soot based anti-icing coatings through environmentally friendly synthesis methods	018





Annaël Sort- Montenegro	TCD	Electro-guided Soft Micro-vehicles: From Polymer Microstructures to Ionic Liquid Droplets	019
Abhiiit	TUD	Zeolite EMT Entrapped Ruthenium Polypyridine	020
Wickramasinghe		Materials for Photocatalytic Degradation of Pollutants	020
Amrutha Augustine	TCD	Nanocomposite Photoresists for Structural	021
		Coloration	2-1
Luisa Lavelle	TCD	Direct Laser Writing of Complex 3D Metal	022
		Nanoparticle Patterns within Polymer	
1 2 15 Torcontona	ny 19th	Microstructures for Photothermal Micro-Actuators	24
10:00-11:20 Media	cinal Ch	amistry	
Conor Shine	RCSI	Antibacterial Polymers Mimicking Antimicrobial	023
		Peptides	020
Shubhangi	TCD	Discovery of small molecules blocking a key	024
Kandwal		binding site in SARS-CoV-2 nsp3 protein	
John Connolly	RCSI	Design and synthesis of novel antimicrobial	025
	19922-220	peptides replacing amino acids with conventional	
		small molecule antibiotics producing an	
		amalgamation of a peptide mimetic/conjugate	
		system	8
Mairead Gallagher	TCD	Antibiotic Metabolites: Synthesis, Characterisation,	026
		and Assessment of their Role in Antibiotic	
		Resistance Development	
B1.15 St. Quek 18	B th June	Resistance Development 2024	<i></i>
B1.15 St. Quek 18 10:00-11:20 (Bio)	^{3th} June Material	Resistance Development 2024 S Discovery	
B1.15 St. Quek 18 10:00-11:20 (Bio) Manting Mu	B th June Material TCD	Resistance Development 2024 S Discovery Novel Proton Shuttling Mechanism in Pd(II)-	027
B1.15 St. Quek 18 10:00-11:20 (Bio) Manting Mu	B th June Material TCD	Resistance Development 2024 S Discovery Novel Proton Shuttling Mechanism in Pd(II)- Catalyzed Wacker-type Oxidation	027
B1.15 St. Quek 18 10:00-11:20 (Bio) Manting Mu Keelan Byrne	B th June Material TCD MU	Resistance Development 2024 Is Discovery Novel Proton Shuttling Mechanism in Pd(II)- Catalyzed Wacker-type Oxidation Mechanistic Insight into Alkali-Metal Mediation of	O27 O28
B1.15 St. Quek 18 10:00-11:20 (Bio) Manting Mu Keelan Byrne	Material TCD MU	Resistance Development 2024 S Discovery Novel Proton Shuttling Mechanism in Pd(II)- Catalyzed Wacker-type Oxidation Mechanistic Insight into Alkali-Metal Mediation of Styrene Transfer Hydrogenation: A DFT Study	O27 O28
B1.15 St. Quek 18 10:00-11:20 (Bio) Manting Mu Keelan Byrne Cian Clarke	Material TCD MU TCD	Resistance Development 2024 S Discovery Novel Proton Shuttling Mechanism in Pd(II)- Catalyzed Wacker-type Oxidation Mechanistic Insight into Alkali-Metal Mediation of Styrene Transfer Hydrogenation: A DFT Study A Python-Based Workflow for the Automated	O27 O28 O29
B1.15 St. Quek 18 10:00-11:20 (Bio) Manting Mu Keelan Byrne Cian Clarke	Material TCD MU TCD	Resistance Development 2024 S Discovery Novel Proton Shuttling Mechanism in Pd(II)- Catalyzed Wacker-type Oxidation Mechanistic Insight into Alkali-Metal Mediation of Styrene Transfer Hydrogenation: A DFT Study A Python-Based Workflow for the Automated Generation of Molecular Libraries	027 028 029
B1.15 St. Quek 18 10:00-11:20 (Bio) Manting Mu Keelan Byrne Cian Clarke Maria Byrne	B th June Material TCD MU TCD UCD	Resistance Development 2024 S Discovery Novel Proton Shuttling Mechanism in Pd(II)- Catalyzed Wacker-type Oxidation Mechanistic Insight into Alkali-Metal Mediation of Styrene Transfer Hydrogenation: A DFT Study A Python-Based Workflow for the Automated Generation of Molecular Libraries Multifunctional Luminescent Silica Nanoparticles for	027 028 029 030
B1.15 St. Quek 18 10:00-11:20 (Bio) Manting Mu Keelan Byrne Cian Clarke Maria Byrne	B th June Material TCD MU TCD UCD	Resistance Development 2024 S Discovery Novel Proton Shuttling Mechanism in Pd(II)- Catalyzed Wacker-type Oxidation Mechanistic Insight into Alkali-Metal Mediation of Styrene Transfer Hydrogenation: A DFT Study A Python-Based Workflow for the Automated Generation of Molecular Libraries Multifunctional Luminescent Silica Nanoparticles for Applications as Biological Probes and Delivery	027 028 029 030
B1.15 St. Quek 18 10:00-11:20 (Bio) Manting Mu Keelan Byrne Cian Clarke Maria Byrne	B th June Material TCD MU TCD UCD	Resistance Development 2024 S Discovery Novel Proton Shuttling Mechanism in Pd(II)- Catalyzed Wacker-type Oxidation Mechanistic Insight into Alkali-Metal Mediation of Styrene Transfer Hydrogenation: A DFT Study A Python-Based Workflow for the Automated Generation of Molecular Libraries Multifunctional Luminescent Silica Nanoparticles for Applications as Biological Probes and Delivery Agents	027 028 029 030
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Athira Tomy	MU	Non-enzymatic sensing platform for <i>N</i> -Acetyl Neuraminic Acid based on electrodeposited boronic acid film on glassy carbon electrodes	037
Usaid Azhar	ATU	Development and Characterisation of Poly(catecholamine) Surface Coatings	O38

Much appreciation to our Sponsors!

We are very grateful to our Sponsors without whom the Colloquium would not have been possible:

- Institute of Chemistry of Ireland
- Agilent
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- Beilstein Institut
- Eli Lilly
- Eurachem Ireland
- GPE Scientific
- Mason Technology
- Merck Life Science
- Royal Society of Chemistry (Republic of Ireland Local Section)















List of Poster Presentations

Giulia Ferrari	MU	Pt (IV)-DEVD-doxorubicin conjugates as dual action	P1
Michele Coi	TCD	High valent first-row transition metal halides complexes for oxidative halogenation of saturated hydrocarbons	P2
Suncica Sukur	MU	Development of Biocompatible Graphene Oxide- Based Magnetic Nanoplatforms for Targeted Drug Delivery	P3
Joshua Thorogood	TCD	Synthetic Magnesium Tetrapyrroles for Mechanistic Studies of Photosystem II	P4
Ashwini Mishra	UCD	Utilisation of waste products for the construction of alkenes	P5
Emily Collins	UCC	Development of Synthetic Routes to Novel Sulfur- Based Antivirals	P6
Amy Twomey	UCC	Exploring Metal-Organic Frameworks as Catalysts in the Synthesis of Methyl Acrylate from CO ₂	P7
Michelle O'Driscoll	UCC	Tackling Antimicrobial Resistance via Novel BDSF Quorum Sensing Inhibitors	P8
Gangireddy Reddy	UCC	Investigation of a synthetic route to aromatic Resolvins	P9
Karina Chan	RCSI	Development of Pt-PROTACs to degrade Pt-binding Proteins	P10
Rebecca O'Keefe	UCC	Enantioselective Intramolecular C-H Insertions of α- Diazosulfonates	P11
Aylin Ahmadinia	TCD	Development of green-based coatings with anti- corrosion properties	P12
Éabha McMahon	UCC	Intermolecular C-H Insertion Reactions of α- Diazosulfones	P13
Luke Glennon	MU	Electrochemical Detection of Ornidazole by means of Copper-Iron nanoparticles and Carbon Black-modified electrode	P14
Colm Ennis	MU	Bifunctional Layered Double Hydroxide Electrocatalysts for Water Splitting	P15
Rachel Lynch	UCD	Carbon Dioxide Utilisation for Construction of High Value Carboxyl-Containing Organic Products	P16
Fiona Kinsella	UCC	Asymmetric Synthesis Using Transaminases as Biocatalysts	P17
Oscar Kelly	TCD	Model Compounds for the Investigation of Electrostatic Effects in Photosynthetic Pigments	P18
Olga Clavilier	MU	Carbon-negative construction materials from a biorefinery	P19
Léa Diebold	MU	Towards tumour theranostics: hypoxia activation as a tool for therapy and diagnostics	P20
Aoife Newman	MU	Printable Mediated Glucose Biosensor Development for Wearable Devices	P21
Chloe Stapleton Jackson	MU	Characterisation of a Polymer-Enzyme Composite Biosensor for Brain Extracellular Glucose	P22
Marcin Szydło	UCD	Development of a Redox-Neutral Wittig Reaction Catalysed by Phosphorus	P23





Mouna Hind Laiche	RCSI	Design, synthesis and screening of novel prenylated chalcones as optimised anti-cancer agents	P24
Brian Durkan	RCSI	Desulfurative Fluorination of Alkyl Phenyl Sulfides via Bromonium Catalysis	P25
Valentina Magno	TUD	Investigation of the protein corona of gold nanoparticles as a possible biomarker for glycan based diagnostics	P26
Keane McNamee	MU	Platinum black and miniaturised electrodes for neurochemical monitoring	P27
Conor Cassidy	MU	Nickel boride/transition metal dichalcogenides as potential bifunctional electrocatalysts for water splitting	P28
Katie McHugh	UG	Dual Delivery of Anti-Cancer Drugs using Metal- Organic Framework	P29
Sebastian Pim	RCSI	Observing bioorthogonal macrocyclization in live cell nuclear membranes using on/on fluorescence lifetime microscopy	P30
Niamh Lehane	UCD	Asymmetric Synthesis of α-Aryl Stereocentres in Dihydroguinolinones via DAAA and DAP	P31
Orlagh Beggs	TCD	High-Valent Iron Halide Oxidants for Hydrocarbon Oxidation	P32
Alexandra Lapiy	MU	Glutathione Sensor Development with the aid of Electrosynthesised Nanogold	P33
Yiran Luo	MU	Ultrasensitive Detection of Sulfamerazine with CeO ₂ mixed Spherical Spinel ZnMn ₂ O ₄ combined with WS ₂ Sheets	P34
Freya Ritterling	TCD	Rigid Hydrocarbon Isosteres as Linkers in Porphyrin Dyads for Sensing Application	P35
Sreedhanya Pallilavalappil	ATU	Electrochemical Evaluation of FeCo Oxide and Ag/FeCo Oxide Nanocomposites Derived from Prussian Blue Analogues for Oxygen Evolution	P36
Joseph Monahan	MU	Utilisation of Surface-Modified Transition Metal Dichalcogenides as Unconventional Antimicrobial Agents	P37
Adam T. McCormack	MU	Continuous flow synthesis of Black Hole Quenchers	P38
Eleanor Windle	UCD	Structurally Dependent DNA Disruption of Phthalocyanine Aggregates	P39
Marilia Dalla Benetta	MU	Room Temperature Modification of Carbon Cloth for Water Splitting	P40
Ciara McEvoy	MU	Enhancing Pyrazolopyrimidinone Cytotoxicity against Glioblastoma using Cold Atmospheric Plasma (CAP)	P41
Niamh O'Shea	TCD	The Synthesis of Mechanically Interlocking Molecules using the btp [2,6-bis(1,2,3-triazole-4-yl)pyridine] motif	P42
Bláithín Rawson	TCD	Host-Guest Chemistry of Napthalene Diimide based Macrocycles	P43
Jordan Loughlin	MU	Novel Squaratide Based Glycoconjugates (SBG's) to Selectively Target Cancer Cells	P44
Yingru Zhou	DCU	Can carbon dots be used as nanocarrier scaffolds?	P45
Christine Coffey	UCD	Towards Phosphorus Cations as Main Group Catalysts	P46
Marianna Zolyomiova	DCU	Development of a Portable and User-Friendly Enclosed System with Smartphone Camera Detection for Identifying Microplastics in Urban Water Runoff	P47





Oana Popa	UCD	Stereoselective 1,2-cis-glucosylations	P48
Mandapati Bhargava Reddy	UCD	Visible-light-induced carbosulfonylation of alkynes	P49
Zarah McGeever	DCU	Synthesis of Gamma-Lactones from Epoxides and Ketenes	P50
Shaista Jabeen	ATU	Tungsten Carbide: A High-Efficiency Electrocatalyst for Hydrogen Evolution Reaction (HER)	P51
Martina Tuberti	TUD	Computational studies, design and synthesis of Tau protein fragments, to explore a potential role in Alzheimer's disease	P52
Sophie Maguire	TCD	Exploration of synthetic strategies for the development of non-planar atropisomeric porphyrins	P53
Liam Cribbin	TCD	C-C bond formation in a sterically demanding environment	P54
Soumoshree Sengupta	TCD	BODIPY-anthracene dyads as versatile photosensitizers	P55
Bodhayan Biswas	UCD	Towards automated synthesis of monosaccharide building blocks and applications in oligosaccharide synthesis	P56
Amravati Gode	UL	New insight into organic solid solutions using low- frequency phonon analysis	P57
Yekaterina Tskhe	TCD	pH-Responsive Hydrogel Micro-Actuators	P58
Aoife Donohoe	TCD	Bio-Inspired Photonic Actuators	P59
Emma Nolan	DCU	Lunar Regolith and Anti-Adhesion Nanostructures	P60
Meabh Kennedy	DCU	Mechanobactericidal Polymer Surfaces for Medical Devices –Synthesis and functionalisation of poly(2- allyloxymethyl-2-ethyltrimethylenecarbonate) (PAOMEC)	P61
Teodora Faraone	TCD	Composite polymer microstructures fabricated via direct laser writing for structural colouration and analyte sensing	P62
Mary Flood	UCD	Instability of RNA Mitigated by Reversible Ribose 2'- OH Acylation	P63
Ciara Tobin	DCU	Fabrication of Electrospun Membranes for Water Filtration	P64
Daniel Molloy	UCD	Degradation of Perfluorooctanoic Acid by Plasma- Assisted Catalysis in a DBD Reactor	P65

Plenary Speakers

75th Irish Universities Chemistry Research Colloquium

Prof. Dr. Mathias O. Senge, Chair Organising Committee

Chair of Organic Chemistry, Trinity College Dublin

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Professor Senge was born in Silbach, Germany in 1961. After service in the Air Force he studied chemistry in Freiburg, Amherst, Marburg and Lincoln and graduated from the Philipps Universität Marburg in 1986. After a Ph.D. thesis in plant biochemistry with Prof. Horst Senger in Marburg (1989) and a postdoctoral fellowship with Prof. Kevin M. Smith at UC Davis, he moved to the Freie Universität Berlin and received his habilitation in Organic Chemistry in 1996. From 1996 on he was a Heisenberg fellow at the Freie Universität Berlin and UC Davis and held visiting professorships at Greifswald and Potsdam.

In 2002 he was appointed Professor of Organic Chemistry at the University Potsdam and since 2005 holds the Chair of Organic Chemistry at Trinity College Dublin. He was the recipient of fellowships from the Studienstiftung des Deutschen Volkes and the Deutsche Forschungsgemeinschaft and he was named a Science Foundation Ireland Research Professor. Recently he was awarded a Senior Hans Fischer Fellowship at the Institute of Advanced Studies of the Technical University Munich. His main interests are the chemistry and biochemistry of tetrapyrroles, photobiology, crystallography and medicinal and bioorganic chemistry. Professor Senge has published over 375 scientific articles and holds one patent. He has contributed to more than 500 posters and presentations and was invited to over 175 talks. He is also very engaged in outreach programs, visiting schools and encouraging students to pursue science.

75th Irish Universities Chemistry Research Colloquium

Home The 75th edition of the Chemistry Colloquium run annually under the aegis of the Institute of Chemistry of Ireland will be hosted this year at Trinity College Dublin on the 17th-18th June 2024 by the School of Chemistry.

Speakers included:

- Professor Dorota Gryko, Polish Academy of Sciences
- Professor Chris Batchelor-McAuley, Trinity College Dublin
- Professor Serena Cussen, University College Dublin

• Dr. Marc Kielmann, Beilstein Institut

Format for the Colloquium. We will follow the format implemented at the 2022 edition after the very positive feedback received by the participants.

<u>All final year PhD students</u> are welcome to present their research. Thus, there will be no upper limit on the number of speakers from any Institution. To achieve this, there will be multiple parallel sessions. For other postgraduate and postdoctoral researchers, there will be a poster session and a combined drinks/dinner reception in the evening of the 17th June.

Theme Areas for Abstract Submission

- Organic Synthesis
- Inorganic Chemistry
- Physical Chemistry
- Medicinal Chemistry
- Materials
- Environmental Chemistry
- Polymer Chemistry
- Electrochemistry

Professor Serena Cussen. University College Dublin



Serena Cussen (née Corr) is Full Professor of Materials Chemistry at University College Dublin. She obtained her BA and PhD degrees in Chemistry from Trinity College Dublin, before going on to carry out postdoctoral research at University of California Santa Barbara with Professor Ram Seshadri. Serena's research focuses on understanding the synthesis-structure-function interplay in materials for electrochemical energy storage. Her group are particularly interested in determining strategic routes to functional materials which afford control over crystal chemistry,

particle size and particle morphology and deepening our understanding of the impact this has over properties. As a recipient of the RSC Journal of Materials Chemistry Lectureship (2017), the ISIS Science Impact Award (2021) and the RSC Interdisciplinary Prize (2023), Serena is deeply committed to career sustainability, early career mentoring, the promotion of women in STEM and public outreach. A former member of the RSC's Materials Division Council, she has contributed to the RSC's Equity in Publishing group (contributing to the recent "Is publishing in the chemical sciences gender biased?" report) and was featured in the International Women's Day report "The Chemical Ladies". More information

Fine-tuning synthesis to optimise energy storage: insights from advanced characterisation

A global transition to net zero will require innovations in materials manufacture that increase efficiency and reduce consumption, all while continuing to meet demand and satisfy application needs. Sustainable manufacturing processes that address the challenges of resource efficiency and multi-level optimization could reduce manufacturing resource to just the amount required. Here, I will present some of our recent work on the development of microwave chemistry approaches to materials for energy storage as well as our future plans to move from batch synthesis to continuous processes. For example, our observations for garnet electrolyte batch microwave-synthesis (leading candidate materials for safer next generation solid-state batteries) have demonstrated that these processing techniques can reduce reaction times and temperatures; the rapid, homogeneous microwave heating affords a single-phase high ionic conducting material. We can also target faceted cathode particles, such as high nickel content cathodes for next-generation Li-ion batteries, as well as lower cost cathodes such as olivine materials. The addition of microwave heating can afford materials with less defects, which impacts subsequent battery performance. I will also showcase some of our recent development of in situ muon spin relaxation measurements that allow us to interrogate ion diffusion across electrode-electrolyte interfaces. This talk will highlight how careful synthetic design can enable performance and a comprehensive analysis provides greater insight into materials properties.

Professor Chris Batchelor McAuley. Trinity College Dublin



Chris was recently appointed as an Assistant Prof. in TCD and moved to Ireland in 2022. Prior to this he was an OMS Fellow at the University of Oxford. Over the years Chris' research has ranged from Fundamental to Applied, having worked on projects such as quantifying the pH of fetal blood through to developing electron transfer theory and creating ultra-low noise electronics for measuring electrochemical reactions at the single nanoparticle scale. This work has led to him publishing 200 articles and 6 patents and he has been cited in total over 5000 times (WoS 2023, excluding self-citations).

In 2012 Chris co-authored the textbook "Understanding Voltammetry: Problems and Solutions" and he recently co-edited an issue of the review journal Current Opinion in Electrochemistry. <u>More information</u>

From Energy to Sustainability: Studying Reactions at the Single Particle Scale

Why study materials at the single particle scale? From an analytical standpoint this approach is important; by investigating objects one-at-a-time, we can start to understand and quantify heterogeneity in a sample. We can ask 'are all nanoparticles in a sample equally active'? However, beyond this direct analytical interest the approach has more general applications, for example, in marine monitoring it allows us to ask, 'how much of the biogenically precipitated calcite in a seawater sample is bound to phytoplankton'? This is a key question in understanding the oceanic carbon fluxes. This single particle approach also raises interest from a physical chemistry standpoint. As we look at things on an increasingly small scale does the chemistry or reactivity of the material change?

The kinetics of a solid/solution interfacial reaction are generically intimately linked with masstransport, usually diffusion, occurring in the vicinity of the interface of interest. How can this altered mass transport change the apparent reactivity of the material? This seminar will begin by looking at how, for solution phase interfacial reactions, the rate determining step can change as a function of the particle size.

Changing the size of a particle can radically alter a reaction pathway for this class of reactions. Can this change in reactivity influence a material's nanotoxicity? Next, the issue of surface heterogeneity[1] will be considered and the extent to which we can correlate changes in a surface's activity with its structure explored. Finally, the seminar will turn to consider two experimental cases[2,3] and outline recent examples of how reactions have been studied on the single particle scale.

References [1] Wong, Rachel, et al. "Electrochemical Heterogeneity at the Nanoscale: Diffusion to Partially Active Nanocubes." The Journal of Physical Chemistry Letters 13 (2022): 7689- 7693. [2] Yu, Wenmiao, et al. "Characterising Porosity in Platinum Nanoparticles." Nanoscale 11 (2019): 17791-17799. [3] Yang, Minjun, et al. "Opto-Electrochemical Dissolution Reveals Coccolith Calcium Carbonate Content." Angewandte Chemie 133 (2021): 21167-21174.

Professor Dorota Gryko. Polish Academy of Sciences



Current research interests:

Photochemistry, Co-catalysis, carbene chemistry, vitamin B12 chemistry and catalysis, and vitamin B12 as a delivery vehicle

Education:

2000-2008: Habilitation, Institute of Organic Chemistry, PAS, Poland 1994-1997: PhD in Organic Chemistry, Institute of Organic Chemistry, PAS, Poland (Supervisor: Prof. Janusz Jurczak) 1989-1994: M.Sc., with distinction, Warsaw University, Chemistry Department, Poland

Academic career:

2015-present: Professor, Institute of Organic Chemistry, PAS, Warsaw, Poland. 2009-2015: Research group leader at the Institute of Organic Chemistry, Poland 2007-2007: visiting researcher at the University of Texas at Austin, USA, J. L. Sessler (2007), porphyrinoid chemistry 1998-2002: Postdoctoral Researcher, North Carolina State University, USA, (Supervisor: Prof. J. Lindsey)

Prof. Gryko has published 120 scientific papers published in top-class scientific journals, including: Journal of the American Chemical Society, Angewandte Chemie International Edition, Chemical, Nature communications, Chemical Communications, 11 reviews and 5 book chapters. Her works have been cited almost 5,499 times (without self-citations, Google Scholar).

Awards: 1. Wojciech Świętosławski Award of the Polish Chemical Society, for outstanding achievements in the field of chemistry, chemical technology, and related sciences 2023 2. Award of the Minister of Science and Higher Education for Outstanding Achievements in science in 2019 3. Maria Curie Prize, for "The discovery of new biological properties of porphyrins in the fight of nosema' 2019 4. Award of the Director of the Institute of Organic Chemistry PAS for Scientific Achievements in 2018, 2019, 2020, 2021 5. Award of the Prime Minister of the Polish Government in 1998 for the Ph.D. thesis. <u>More information</u>

Bioinspired reactions enabled by porphyrinoids

Porphyrinoids, also known as the pigments of life, are a class of naturally occurring organic dyes. They play key roles in crucial processes that support life - oxygen transport (hem), electron transport (cytochrome c), photosynthesis (chlorophyll a), and synthesis of DNA (vitamin B12). Following nature, we have been exploiting the potential of these compounds in catalysis. Vitamin B12 - catalysis has been successfully translated into the laboratory.1-2 The advantage of using vitamin B12 as a catalyst lays in the complete stability of the central cobalt ion and by the definition it is nontoxic. It has also been well documented that the reaction mechanism usually follows a radical pathway, bringing a new dimension to this already interesting field.2 Along this line, we have developed new vitamin B12-catalyzed reactions involving reduction of Co (III) to Co(I) or Co (II) and subsequent reactions with electrophiles or radicals. Vitamin B12 derivative unusually catalyzes a new olefinic sp2 C-H alkylation reaction with diazo reagents as a carbene source, acylation of activated olefins, alkylation of strained molecules.3-5 We have also proved that porphyrinoids are valuable photoredox catalysts that can be activated with both blue and red light.6 These key findings emphasize the unique feature of porphyrinoids as catalysts to achieve something unachievable with other methodologies or to find a greener approach.

Dr. Marc Kielmann, Beilstein Institut



Marc Kielmann studied Chemistry (B.Sc.) and Medicinal and Natural Product Chemistry (M.Sc.) at the Leibniz Universität

Hannover, working with Prof. Andreas Kirsching and Prof. Holger Butenschön.

After that, he successfully pursued his Ph.D. studies in the group of Prof. Mathias O. Senge at Trinity College Dublin, working on

methods development and the synthesis of nonplanar porphyrins for use as

organocatalysts and sensors.

Subsequently, he stayed as a EU-funded Postdoctoral Researcher with Prof. Senge, acting as liaison for the multinational research collaboration INITIO. Marc joined the Beilstein-Institut as Scientific Editor in 2020 and is currently Managing Editor of the Beilstein Journal of Organic Chemistry. His interests include the ethics of science and open access publishing, which he has addressed in various talks and a panel discussion. <u>More information</u>

Insights into a journal editor's tool kit

the past, editorial processes at scientific journals were thought of as a black box, where manuscripts are received as input on one side and publications are produced as output on the other. In this metaphor, the internal workings of the black box are not completely transparent, and therefore they are not fully understood by authors. Today, in order to be compliant with publishing standards and to meet the requirements of the scientific community, this is far from the truth. Scientific publishing has undergone years of transformation, which has resulted in more openness and transparency. Consequently, most reputable publishers communicate previously undisclosed or vague information more openly, such as journal metrics, editorial policies, and details about the manuscript workflow. However, there are still unwritten rules, tricks of the trade, and best practices that when incorporated can improve an author's chance of seeing their manuscript published. The goal of this talk is to offer some practical advice for future authors and to foster curiosity in scientific publishing. The presentation is intended to be interactive, providing curated insights into an editor's tool kit while allowing plenty of time for discussion throughout. At the same time, the audience is invited to ask the questions they are most interested in and to share their own experiences from an author's point of view.

Dr. Ellen M. Fay

ICI Postgraduate Award Lecture



Dr. Ellen M. Fay completed her BA (Mod) in Chemistry in Trinity College Dublin in 2019. During her undergraduate degree, she undertook her final year research project under the supervision of Prof. Joanna McGouran. Ellen was awarded a Government of Ireland Postgraduate Scholarship from the Irish Research Council and returned to the McGouran Group in September 2019 to pursue a PhD focusing on the development inhibitors and probes targeting DNA damage repair enzymes. Alongside her research, Ellen engaged in extensive outreach activities, promoting science to a wide

range of audiences. She has travelled to over 30 schools across Ireland as a leader for Current Chemistry Investigators workshops, run by Dr John O' Donoghue. Ellen completed her PhD in April 2024 and is now working as Technical Officer in the School of Chemistry, Trinity College Dublin.

Nucleoside and Oligonucleotide Modification for Targeting DNA Damage Repair

The exonuclease SNM1A is a key enzyme involved in the repair of interstrand crosslinks, a highly cytotoxic form of DNA damage.1 As cells depleted in this enzyme show increased sensitivity to certain chemotherapeutic agents,2 SNM1A is a potential target for treating cancers that have developed resistance to traditional chemotherapeutics. However, SNM1A and other enzymes of this class are poorly understood as there is a lack of tools available to enable their study. SNM1A facilitates DNA repair through the hydrolysis of the phosphodiester backbone. The active site of SNM1A contains two metal ions that are key to its catalytic activity.

This work elaborates on previous results from the **McGouran Group** which identified that nucleosides and oligonucleotides, incorporating metal-binding groups, can successfully target the metal ions in the SNM1A active site. Initially, nucleoside modification was explored through the evaluation of novel carboxylate-rich nucleoside analogues for their ability to target SNM1A.3 The ability of modified oligonucleotides to target SNM1A was also examined through the generation of a series of triazole-modified oligonucleotides, incorporating metal-binding groups, for targeted inhibition of SNM1A.4

The investigation extended to the evaluation of a series of oligonucleotides featuring alternative backbones for their affinity for SNM1A.

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75th Irish Universities Chemistry Research Colloquium Winners Presented with Certificates by Prof Pat Guiry, President ICI



Maria Byrne



Aoife Newman



Yekaterina Tskhe



Mouna Hind Laiche



Manting Mu



Darren Beirne IRISH CHEMICAL NEWS ISSUE NO.3 JULY 2024



Annaël Sort-Montenegro





Joshua Thorogood



Mandapati Bhargava Reddy



Winners Group Photo



Prof. Dr Mathias Senge, TCD, Senge Group

Chair Organising Committee



Ben Colgan Tech. Sales Consultant & Ela Mitchell Senior Tech. Sales Consultant



Dr Ellen Faye ICI Post Grad Award Winner

Social Side of the Colloquium & Networking







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Presenters at the Colloquium



Prof Serena Cussen UCD



Evan Judge UCD



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Kate Donaghy UCD



Rachel O'Sullivan UCD



Hong Ann Gan TUS



Prof Dorota Gryko Polish Acad. Sci.



Conor Shine RCSI



Shubhangi Kandwal TCD

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John Connolly RCSI



Mairead Gallagher TUD



Connie Sigurvinsson TCD

Grace Lawler TUS



Darren Beirne MU





Dr Marc Kielmann, Beilstein Institut



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 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.

ICI's Young Chemists Network Committee for 2023/2024

Seán Byrne, Chairperson of the ICI YCN, Director of the Institute of Chemistry Ireland, PhD student UCD.

The ICI-YCN 2024 Committee

Email: sean.byrne6@ucdconect.ie, youngchemists@instituteofchemistryireland.org

Committee Members 2023/24





Aaron McCormack EDI Committee Member EDI Committee Member



NUIG

IVCN Member Neil Curtis UCC



Keela Kessie

MU

Public Relations Officer Industrial Relations Officer, EDI Committee Member Public Relations Officer Keane McNamee MU

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35







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 Phys. Chem. Chem. Phys.,

 2024, 26, 28, 19037 to 19574

 28 July

 DOI https://doi.org/10.1039/D3CP06148E

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PCCP (*Physical Chemistry Chemical Physics*) is an international journal for the publication of cuttingedge original work in physical chemistry, chemical physics and biophysical chemistry. To be suitable for publication in *PCCP*, articles must include significant new physical insights; this is the prime criterion that referees, and the Editors will judge against when evaluating submissions.

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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Impact factor: 4.493* Publishing frequency: 48 per year Indexed in MEDLINE and Web of Science




ICI Young Chemists' Network



The first ICI-Young Chemists' Network Young Chemists for Change conference (YCFC) was successfully held at the University College Dublin on May 30th and 31st with over 50 attendees and speakers from diverse background and expertise.

The event had a total of 85 registered attendees, predominantly postgraduate / PhD students, however post-doctoral researchers and academic staff were also present. University College Dublin, University of Limerick, Trinity College Dublin, Queen's University Belfast, Maynooth University and Atlantic Technological University, Sligo, were all represented at the event.

The event hosted a poster session as well as twelve oral presentations, highlighting the opportunity to disseminate research through an EDI-focused lens. Keynote speakers at the event included; Prof. Andrew Nortcliffe (University of Nottingham, UK) who also hosted an interactive workshop with a focus on group discussion and reflection on EDI topics, Dr. Marianne Bore Harr (University College Dublin), and Dr. Niamh O'Mahoney (University College Cork).

The ICI-Young Chemists' Network received sponsorship for the event from the Royal Society of Chemistry, ThermoFisher Scientific, Scientific Lab Supplies (SLS), University College Dublin and the Institute of Chemistry of Ireland.

Due to the success of the event, the ICI-Young Chemists' Network urge any readers interested in organising a second instalment of the conference to please contact; <u>joseph.byrne@ucd.ie</u> or <u>Wiktoria.brytan@ul.ie</u>



Poster sessions at the University College Dublin, May 30th 2024.



Pictured from left to right; Mark Moloney (ThermoFisher Scientific) handing the 1st oral presentation prize to Celine Erkey (University College Dublin), Wiktoria Brytan (ICI-YCN) handing the 2nd oral presentation prize to Muhammad Zain Bin Amjad (University of Limerick, and Almudena Moreno Borallo (ICI-YCN) handing the poster award to Christine Coffey (University College Dublin).



Keynote speakers and organisers of the event pictured from left to right; Prof. Andrew Nortcliffe, Almudena Moreno Borallo, Wiktoria Brytan, Mary Flood, Dr. Niamh O'Mahoney, Dr. Marianne Bore Harr and Francesca Adami.

Universities Sector News

Five University of Galway Research Projects to receive nearly €6 million in funding for healthcare, climate and tech research - Galway Bay FM 26 May

https://galwaybayfm.ie/galway-bay-fm-news-desk/five-university-of-galway-research-projects-to-receive-nearly-e6-million-in-funding-for-healthcare-climate-and-tech-research

MTU embarks on ambitious expansion of its research activity | Munster Technological University – MTU

28 June

https://www.mtu.ie/news/mtu-research-to-impact



Chemistry and Related Sciences around the World

Chemistry is presented here under specific topics to enable easy and quick access to a smaller section of interest to the reader.

- **Topic 1. General Chemistry**
- **Topic 2. Organic Chemistry, Synthesis and Catalyst Chemistry**
- Topic 3. Analytic Chemistry, Sensors, Diagnostics & Spectroscopy
- **Topic 4. Material Chemistry & Sciences**
- **Topic 5. Electrochemistry, Battery Chemistry & Technology**
- **Topic 6. Photochemistry, Solar Cell Chemistry & Technology**
- **Topic 7. Chemistry & Artificial Intelligence**

The chemistry topics are interspersed with other topics and ads

Medicinal Chemistry, Chemical Biology & Life Sciences Section will stand on its own.

General Chemistry

Researchers create new chemical compound to solve 120-year-old problem 1 May 2024 Researchers create new chemical compound to solve 120-year-old problem (phys.org) DOI: 10.1126/science.adi1606

New sugar-based catalyst could offer a potential solution for using captured carbon

2 May https://phys.org/news/2024-05-sugar-based-catalyst-potential-solution.html DOI: 10.1126/science.adl1260

Natural chemistry

2 May Natural chemistry - Openforum - Openforum

UL appoints new director to their Pharmaceutical Manufacturing Technology Centre - Limerick Live

3 May <u>https://www.limerickleader.ie/news/home/1491445/ul-appoints-new-director-to-their-pharmaceutical-manufacturing-technology-centre.html</u>

Chemical Elements (Song about the elements)

Chemical Elements *by* @nanashi_zero | Suno

Coordination cages integrated into swelling poly(ionic liquid)s for guest encapsulation and separation | Nature Communications

4 May Coordination cages integrated into swelling poly(ionic liquid)s for guest encapsulation and separation | Nature Communications DOI: https://doi.org/10.1038/s41467-024-48135-1

Hetero-Polycyclic Aromatic Systems: A Data-Driven Investigation of Structure-Property Relationships | Organic Chemistry | ChemRxiv | Cambridge Open Engage

6 May

https://chemrxiv.org/engage/chemrxiv/article-details/6633d87691aefa6ce1ff32fb DOI: <u>https://doi.org/10.26434/chemrxiv-2024-cp1h5</u> Download: <u>Microsoft Word - Supporting_Information_COMPAS2 (chemrxiv.org)</u>

Century-Old Chemistry Puzzle Solved: Researchers Unveils Game-Changing Compound

8 May

Century-Old Chemistry Puzzle Solved: Researchers Unveils Game-Changing Compound (scitechdaily.com) DOI: 10.1126/science.adi1606

"On-Water" accelerated dearomative cycloaddition via aquaphotocatalysis | Nature Communications

8 May

"On-Water" accelerated dearomative cycloaddition via aquaphotocatalysis | Nature Communications DOI: <u>https://doi.org/10.1038/s41467-024-47861-w</u>

IAEA Profile: Shifting Focus from Pharmaceutical Chemistry to Blue Carbon 9 May

IAEA Profile: Shifting Focus From Pharmaceutical Chemistry to Blue Carbon | IAEA

Tauonium: The smallest and heaviest atom with pure electromagnetic interaction ^{10 May}

Tauonium: The smallest and heaviest atom with pure electromagnetic interaction (phys.org) DOI: 10.1016/j.scib.2024.04.003

Strictly no dancing: Researchers discover 'new molecular design rules'

8 May <u>Strictly no dancing: Researchers discover 'new molecular design rules' (phys.org)</u> <u>DOI: 10.1038/s41586-024-07246-x</u>

Enabling nucleophilic reactivity in molecular calcium fluoride complexes | Nature Chemistry

14 may https://www.nature.com/articles/s41557-024-01524-x DOI: https://doi.org/10.1038/s41557-024-01524-x

Scientists develop sticky pesticide to combat pest insects

14 May Scientists develop sticky pesticide to combat pest insects (phys.org) DOI: 10.1073/pnas.2321565121

New research employs shutter speed analogies to validate 55-year-old theory about chemical reaction rates

15 May New research employs shutter speed analogies to validate 55-year-old theory about chemical reaction rates (phys.org) DOI: 10.1073/pnas.2317781121

Costly gas separation may not be needed to recycle CO₂ from air and industrial plants

21 May https://phys.org/news/2024-05-gas-recycle-co8322-air-industrial.html DOI: 10.1039/D3EN00912B

Bright and durable scintillation from colloidal quantum shells | Nature Communications

20 May Bright and durable scintillation from colloidal quantum shells | Nature Communications DOI: https://doi.org/10.1038/s41467-024-48351-9

Neutrons open window to explore space glass

21 May Neutrons open window to explore space glass (phys.org) DOI: 10.1038/s41526-024-00371-x

New, electricity-free desalination method shows promise 20 May New, electricity-free desalination method shows promise (techxplore.com) DOI: 10.1038/s41467-024-47313-5

In-situ noncovalent interaction of ammonium ion enabled C–H bond functionalization of polyethylene glycols | Nature Communications

IRISH CHEMICAL NEWS ISSUE NO.3 JULY 2024

24 May

In-situ noncovalent interaction of ammonium ion enabled C–H bond functionalization of polyethylene glycols | Nature Communications DOI: https://doi.org/10.1038/s41467-024-48584-8

Deciphering how crystals form in non-classical ways

24 May Deciphering how crystals form in non-classical ways (phys.org) DOI: 10.1038/s41578-023-00637-y

Foldamers controlled by functional triamino acids: structural investigation of α/γ -hybrid oligopeptides | Communications Chemistry

25 May Foldamers controlled by functional triamino acids: structural investigation of α/γ-hybrid oligopeptides | <u>Communications Chemistry (nature.com)</u> DOI: <u>https://doi.org/10.1038/s42004-024-01201-7</u>

A protocol for controlled reactivity shift in the 2,2-difluorovinyl motif used for selective S–18F and C–18F bond formation | Communications Chemistry 29 April

A protocol for controlled reactivity shift in the 2,2-difluorovinyl motif used for selective S–18F and C–18F bond formation | Communications Chemistry (nature.com) DOI: https://doi.org/10.1038/s42004-024-01132-3

Researchers analyze how a chemical process could help recycle a common plastic waste

waste 20 May

Researchers analyze how a chemical process could help recycle a common plastic waste (phys.org) DOI: 10.1021/acs.iecr.3c04001

New Catalysts Turn the Greenhouse Gas Methane Into Valuable Chemicals 21 May

New Catalysts Turn the Greenhouse Gas Methane Into Valuable Chemicals (scitechdaily.com) DOI: 10.1038/s41467-024-46924-2

Combating carbon footprint: Novel reactor system converts carbon dioxide into usable fuel

27 May

Combating carbon footprint: Novel reactor system converts carbon dioxide into usable fuel (techxplore.com) DOI: 10.1016/j.jcou.2024.102763

Oxygen's exotic yet stable bonding in graphene explained | Research | Chemistry World

21 May

https://www.chemistryworld.com/news/oxygens-exotic-yet-stable-bonding-in-graphene-explained/4019514.article

Researchers report a simpler method for precise molecular orbital visualization 22 May

https://phys.org/news/2024-05-simpler-method-precise-molecular-orbital.html DOI: 10.1021/acs.jpca.3c06506

Cheap, dirty leftovers can release pure oxygen: Hexagonal manganites show promise for production on an industrial scale 30 May

Cheap, dirty leftovers can release pure oxygen: Hexagonal manganites show promise for production on an industrial scale (phys.org)

DOI: 10.1021/acs.chemmater.3c02702

Why •CF2H is nucleophilic but •CF3 is electrophilic in reactions with heterocycles **Nature Communications**

31 May

Why •CF2H is nucleophilic but •CF3 is electrophilic in reactions with heterocycles | Nature Communications DOI: https://doi.org/10.1038/s41467-024-48949-z

X-ray radiation damage cycle of solvated inorganic ions | Nature Communications 30 May

X-ray radiation damage cycle of solvated inorganic ions | Nature Communications DOI: https://doi.org/10.1038/s41467-024-48687-2

A better model for converting carbon dioxide into fuels and products

3 June https://techxplore.com/news/2024-06-carbon-dioxide-fuels-products.html DOI: 10.1038/s44286-024-00062-0

Ionic liquid electrolyte enables efficient CO₂ conversion to fuels and chemicals 3 June

Ionic liquid electrolyte enables efficient CO₂ conversion to fuels and chemicals (techxplore.com) DOI: 10.1016/j.electacta.2024.144431

Self-protecting CoFeAl-layered double hydroxides enable stable and efficient brine oxidation at 2 A cm-2 | Nature Communications

3 June Self-protecting CoFeAl-layered double hydroxides enable stable and efficient brine oxidation at 2 A cm-2 Nature Communications DOI: https://doi.org/10.1038/s41467-024-49195-z

New Evidence Challenges Origin Theory on The Universe's Heaviest Elements (DCU)

6 June New Evidence Challenges Origin Theory on The Universe's Heaviest Elements : ScienceAlert

Positioning for success in the chemical markets of the future

4 June Green chemicals: How EU chemical players can transition | McKinsey

Four Oxford University scientists awarded Royal Society of Chemistry prizes **University of Oxford**

12 June Four Oxford University scientists awarded Royal Society of Chemistry prizes | University of Oxford

New MIT Discovery Just Solved Water's BIGGEST Mystery!

9 June https://youtu.be/17Y82tJDk2o?si=vjfDwEucmXA39D1P New MIT Discovery Just Solved Water's BIGGEST Mystery! - YouTube

Atom-level interaction design between amines and support for achieving efficient and stable CO2 capture | Nature Communications 13 June

Atom-level interaction design between amines and support for achieving efficient and stable CO2 capture Nature Communications

DOI: https://doi.org/10.1038/s41467-024-48994-8

Team creates custom-made molecules designed to be invisible while absorbing near-infrared light

17 June

Team creates custom-made molecules designed to be invisible while absorbing near-infrared light (phys.org) DOI: 10.1002/advs.202405656

"Previously Only Theorized" – Researchers Demonstrate New Way To "Squeeze" **Infrared Light**

12 June "Previously Only Theorized" – Researchers Demonstrate New Way To "Squeeze" Infrared Light (scitechdaily.com) DOI: 10.1038/s41467-024-47917-x

Researchers invent 100% biodegradable 'barley plastic'

18 June Researchers invent 100% biodegradable 'barley plastic' (phys.org)

Direct radical functionalization of native sugars | Nature

19 June Direct radical functionalization of native sugars | Nature DOI: https://doi.org/10.1038/s41586-024-07548-0

Small molecule in situ resin capture provides a compound first approach to natural product discovery | Nature Communications

19 June Small molecule in situ resin capture provides a compound first approach to natural product discovery | Nature Communications DOI: https://doi.org/10.1038/s41467-024-49367-x

Billionaire Jim Ratcliffe Slams Europe's Chemical Industry

19 June Billionaire Jim Ratcliffe Slams Europe's Chemical Industry - YouTube https://youtu.be/H03TS3JajH8?si

House of the Dragon: if dragons were real, how might fire-breathing work? (Fun article)

20 June House of the Dragon: if dragons were real, how might fire-breathing work? (theconversation.com)

Stereoselective polar radical crossover for the functionalization of strained-ring systems | Communications Chemistry

19 June Stereoselective polar radical crossover for the functionalization of strained-ring systems | Communications Chemistry (nature.com) DOI: <u>https://doi.org/10.1038/s4</u>2004-024-01221-3

The first chemist in history may have been a female perfumer – here's how the science of scents has changed since

21 June

The first chemist in history may have been a female perfumer – here's how the science of scents has changed since (theconversation.com)

Stereoselective polar radical crossover for the functionalization of strained-ring systems | Communications Chemistry

19 June

Stereoselective polar radical crossover for the functionalization of strained-ring systems | Communications <u>Chemistry (nature.com)</u> DOI: https://doi.org/10.1038/s42004-024-01221-3

Molecular entanglement can strongly increase basicity | Communications Chemistry

28 May

Molecular entanglement can strongly increase basicity | Communications Chemistry (nature.com) DOI: <u>https://doi.org/10.1038/s42004-024-01205-3</u>

Uncovering Secrets of Historic Paintings in the Modern Laboratory 26 June

<u>Uncovering Secrets of Historic Paintings in the Modern Laboratory | The Scientist Magazine® (the-scientist.com)</u>

Balancing Reactivity, Regioselectivity, and Product Stability in Ir-Catalyzed Ortho-C–H Borylations of Anilines by Modulating the Diboron Partner | Organic

Letters

26 June

Balancing Reactivity, Regioselectivity, and Product Stability in Ir-Catalyzed Ortho-C–H Borylations of Anilines by Modulating the Diboron Partner | Organic Letters (acs.org) DOI: https://doi.org/10.1021/acs.orglett.4c01495

Stability milestone for nitrene | Opinion | Chemistry World 27 June Stability milestone for nitrene | Opinion | Chemistry World

3D oxygen vacancy distribution and defect-property relations in an oxide heterostructure | Nature Communications

26 July <u>3D oxygen vacancy distribution and defect-property relations in an oxide heterostructure | Nature Communications</u> DOI: <u>https://doi.org/10.1038/s41467-024-49437-0</u>

Aromatic Compounds: A Ring Made up Solely of Metal Atoms

27 June Aromatic Compounds: A Ring Made up Solely of Metal Atoms (uni-heidelberg.de) DOI: 10.1038/s41557-024-01530-z

C-H-activated Csp2-Csp3 diastereoselective gridization enables ultravioletemitting stereo-molecular nanohydrocarbons with mulitple H…H interactions | Nature Communications

27 June

<u>C-H-activated Csp2-Csp3 diastereoselective gridization enables ultraviolet-emitting stereo-molecular</u> nanohydrocarbons with mulitple H···H interactions | Nature Communications DOI: https://doi.org/10.1038/s41467-024-48130-6

Vape Teardown: Scientists Reveal What's Actually Inside E-Cigarettes 30 June

Vape Teardown: Scientists Reveal What's Actually Inside E-Cigarettes : ScienceAlert

Redox-Switchable Aromaticity in a Helically Extended Indeno[2,1-c]fluorene | Journal of the American Chemical Society

2 July <u>Redox-Switchable Aromaticity in a Helically Extended Indeno[2,1-c]fluorene | Journal of the American</u>

<u>Chemical Society (acs.org)</u> DOI: https://doi.org/10.1021/jacs.4c04191

Quantifying the regime of thermodynamic control for solid-state reactions during ternary metal oxide synthesis | Science Advances

3 July https://www.science.org/doi/10.1126/sciadv.adp3309 DOI: 10.1126/sciadv.adp3309

Using copper to convert CO₂ to methane could be game changer in mitigating climate change

4 July https://phys.org/news/2024-07-copper-methane-game-changer-mitigating.html DOI: 10.1016/j.apcatb.2024.124061

Moungi Bawendi Podcast Nobel Prize Conversations

3 July Moungi Bawendi – Podcast - NobelPrize.org

How do you make salty water drinkable? The hunt for fresh solutions to a briny problem

4 July

How do you make salty water drinkable? The hunt for fresh solutions to a briny problem (nature.com) DOI: <u>https://doi.org/10.1038/d41586-024-02073-6</u>

Time-resolved crystallography of boric acid binding to the active site serine of the β -lactamase CTX-M-14 and subsequent 1,2-diol esterification | Communications Chemistry

5 July

Time-resolved crystallography of boric acid binding to the active site serine of the β-lactamase CTX-M-14 and subsequent 1,2-diol esterification | Communications Chemistry (nature.com) DOI: https://doi.org/10.1038/s42004-024-01236-w

Physicists report first measured isomeric-ratio in multinucleon-transfer reactions: A doorway to access terra incognita

8 July ∞∞Physicists report first measured isomeric-ratio in multinucleon-transfer reactions: A doorway to access terra incognita DOI: 10.1016/j.physletb.2024.138654

Molecular and supramolecular adaptation by coupled stimuli | Nature Communications

7 July

Molecular and supramolecular adaptation by coupled stimuli | Nature Communications DOI: <u>https://doi.org/10.1038/s41467-024-50029-1</u>

The five scholars who won two Nobel prizes - and what sets them apart (4 of the 5

were for chemistry at least once) 9 July <u>The five scholars who won two Nobel prizes – and what sets them apart (theconversation.com)</u>

Six Irish universities ranked among top 200 in Europe

10 July Six Irish universities ranked among top 200 in Europe (breakingnews.ie)

Scientists demonstrate chemical reservoir computation using the formose reaction 13 July

Scientists demonstrate chemical reservoir computation using the formose reaction (phys.org) DOI: 10.1038/s41586-024-07567-x

Nanocarbon catalyst design unlocks new avenue for sustainable fuel additive production

10 July

Nanocarbon catalyst design unlocks new avenue for sustainable fuel additive production (phys.org) DOI: 10.26599/CF.2024.9200012

UK universities need rescue package to stop 'domino effect' of going under | Office for Students | The Guardian

13 July <u>UK universities need rescue package to stop 'domino effect' of going under | Office for Students | The Guardian</u>

Water Purity Challenges and Wastewater Compliance Strategies in Chemical Plants

15 April 2023 Water Purity Challenges and Wastewater Compliance Strategies in Chemical Plants | Chemical Processing

Regioselective hydroamination of unactivated olefins with diazirines as a diversifiable nitrogen source | Nature Communications

18 July <u>Regioselective hydroamination of unactivated olefins with diazirines as a diversifiable nitrogen source | Nature</u> <u>Communications</u> DOI: https://doi.org/10.1038/s41467-024-50254-8

Electron iso-density surfaces provide a thermodynamically consistent representation of atomic and molecular surfaces | Nature Communications 19 July

Electron iso-density surfaces provide a thermodynamically consistent representation of atomic and molecular surfaces | Nature Communications DOI: https://doi.org/10.1038/s41467-024-50408-8

Collaboration in sustainable chemistry at the University of Nottingham 13 July

Collaboration in sustainable chemistry at the University of Nottingham (acs.org)

New technique streamlines synthesis of heavy element compounds

22 July New technique streamlines synthesis of heavy element compounds (phys.org) DOI: 10.1021/jacsau.4c00245

Retaining flavor while removing caffeine – a chemist explains the chemistry behind decaf coffee

23 July

Retaining flavor while removing caffeine – a chemist explains the chemistry behind decaf coffee (theconversation.com)

What Kamala Harris's historic bid for the US presidency means for science 22 July

What Kamala Harris's historic bid for the US presidency means for science (nature.com) DOI: <u>https://doi.org/10.1038/d41586-024-02394-6</u>

Heaviest element yet within reach after major breakthrough

23 July Heaviest element yet within reach after major breakthrough (nature.com) DOI: https://doi.org/10.1038/d41586-024-02416-3

Chemists discover how Rembrandt made his gold paint

26 July Chemists discover how Rembrandt made his gold paint (artnews.com)

Federal Court finds insufficient evidence Roundup weedkiller causes cancer. What does the science say?

26 July <u>Federal Court finds insufficient evidence Roundup weedkiller causes cancer. What does the science say?</u> (theconversation.com)

Most of the glyphosate in European rivers may not come from farming, researchers suggest

26 July

Most of the glyphosate in European rivers may not come from farming, researchers suggest (phys.org) DOI: 10.1016/j.watres.2024.122140

100% Breakdown: Revolutionary New Method Uses Light To Clean Up Forever Chemicals

27 July

100% Breakdown: Revolutionary New Method Uses Light To Clean Up Forever Chemicals (scitechdaily.com) DOI: 10.1002/anie.202408687

Chemo-, regio- and enantioselective hydroformylation of trisubstituted cyclopropenes: access to chiral quaternary cyclopropanes | Nature Communications

29 July

Chemo-, regio- and enantioselective hydroformylation of trisubstituted cyclopropenes: access to chiral quaternary cyclopropanes | Nature Communications DOI: https://doi.org/10.1038/s41467-024-50689-z

Researchers use plant-inspired polymers for water purification

29 August <u>Researchers use plant-inspired polymers for water purification (phys.org)</u> DOI: 10.1038/s41467-024-49869-8

Scientists Discover the Pathway to the Elusive Element 120

29 July Scientists Discover the Pathway to the Elusive Element 120 (popularmechanics.com)

Organic Chemistry, Synthesis and Catalyst Chemistry

Diastereo-divergent synthesis of chiral hindered ethers via a synergistic calcium (II)/gold (I) catalysed cascade hydration/1,4-addition reaction | Nature Communications

1 May

Diastereo-divergent synthesis of chiral hindered ethers via a synergistic calcium(II)/gold(I) catalyzed cascade hydration/1,4-addition reaction | Nature Communications DOI: https://doi.org/10.1038/s41467-024-47951-9

Enantioselective Alkylarylation of Olefins with Aliphatic C–H Bonds via Asymmetric Paired Oxidative and Reductive Catalysis | Organic Chemistry | ChemRxiv | Cambridge Open Engage

2 May

https://chemrxiv.org/engage/chemrxiv/article-details/662f26c7418a5379b0fe6b88 DOI: https://doi.org/10.26434/chemrxiv-2024-vz46b Download: enantioselective-alkylarylation-of-olefins-with-aliphatic-c-h-bonds-via-asymmetric-pairedoxidative-and-reductive-catalysis.pdf (chemrxiv.org)

Chemists use new approach in the synthesis of complex natural substances 2 May

Chemists use new approach in the synthesis of complex natural substances (phys.org) DOI: DOI: 10.1021/jacs.4c02224

Stereospecific syn-dihalogenations and regiodivergent syn-interhalogenation of alkenes via vicinal double electrophilic activation strategy | Nature Communications

2 May

Stereospecific syn-dihalogenations and regiodivergent syn-interhalogenation of alkenes via vicinal double electrophilic activation strategy | Nature Communications DOI: https://doi.org/10.1038/s41467-024-47942-w

Meet the Winners of the 2024 Organic Process Research & Development Outstanding Publication of the Year Award | ACS Publications Chemistry Blog

3 May

Meet the Winners of the 2024 Organic Process Research & Development Outstanding Publication of the Year Award | ACS Publications Chemistry Blog

Dinuclear gold-catalyzed divergent dechlorinative radical borylation of gemdichloroalkanes | Nature Communications

2 May

Dinuclear gold-catalyzed divergent dechlorinative radical borylation of gem-dichloroalkanes | Nature Communications DOI: https://doi.org/10.1038/s41467-024-48085-8

A leap toward carbon neutrality: New catalyst converts carbon dioxide to methanol

6 May

A leap toward carbon neutrality: New catalyst converts carbon dioxide to methanol (phys.org) DOI: 10.1021/acscatal.3c04957

In-silico-assisted derivatization of triarylboranes for the catalytic reductive functionalization of aniline-derived amino acids and peptides with H2 | Nature Communications

7 May

In-silico-assisted derivatization of triarylboranes for the catalytic reductive functionalization of aniline-derived amino acids and peptides with H2 | Nature Communications DOI: https://doi.org/10.1038/s41467-024-47984-0

Decarboxylative stereoretentive C–N coupling by harnessing aminating reagent | Nature Communications

6 May

Decarboxylative stereoretentive C–N coupling by harnessing aminating reagent | Nature Communications DOI: <u>https://doi.org/10.1038/s41467-024-48075-w</u>

Revolutionizing Catalyst Design: New Research Links Structure to Reaction Performance

6 May

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New model uses fewer measurements to determine level of pharmaceutical residues in wastewater

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New model uses fewer measurements to determine level of pharmaceutical residues in wastewater (phys.org)

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Ultrasound experiment identifies new superconductor

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Division of Medicinal and Biological Chemistry of the Institute of Chemistry of Ireland





Medicinal Chemistry Ireland

Medicinal Chemistry, Chemical Biology, Life Sciences, Drug Discovery and Bioinorganic Chemistry

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Publishing On Cement Decarbonization Brings Challenges, Corrections, & More Approaches - CleanTechnica

Elite researchers in China say they had 'no choice' but to commit misconduct

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Seventeen journals lose impact factors for suspected citation manipulation - Retraction Watch

'We authors paid a heavy price': Journal retracts all 23 articles in special issue – Retraction Watch

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'We authors paid a heavy price': Journal retracts all 23 articles in special issue - Retraction Watch

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5 July

What can be done to challenge the rent-seeking behaviour of the academic publishing industry? - ABC Religion & Ethics

The wolf in Scopus' clothing: Another hijacked journal has indexed nearly 900 articles – Retraction Watch

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Academic journals are a lucrative scam – and we're determined to change that | Arash Abizadeh | The Guardian

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ChemistryViews - The Magazine of Chemistry Europe

ChemistryViews is the science news magazine of Chemistry Europe, an organization of 16 European chemical societies. It informs about what is happening in the global chemistry community and has a strong focus on the people behind the science.



Many interesting articles and videos are available at:

<u>https://www.chemistryviews.org</u> <u>or</u> https://www.chemistryviews.org/category/chememag

Nuclear Fusion Power - Saving Angel or Optimistic Dream? & Developments in Nuclear Technology

New Fusion Record Achieved in Tungsten-Encased Reactor 6 May

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Researchers use superconducting material to make clean fusion energy breakthrough: 'Virtually limitless power production'

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Fusion-energy journey makes significant progress with EU-Japan reactor - Engineers Ireland

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Scientists achieve astonishingly high temperatures with breakthrough fusion reactions: 'Outside the status quo'

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Scientists use rare metal to set new record in effort to produce limitless energy: 'It was a pretty remarkable result'

21 May

Scientists use rare metal to set new record in effort to produce limitless energy: 'It was a pretty remarkable result' (yahoo.com)

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Fusion power could transform how we get our energy — and worsen problems it's intended to solve

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Building a Sun on Earth: ITER's Historic Milestone in Fusion Energy **Development**

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The next big breakthrough in power generation could happen beneath our feet — how nuclear technology can be made safer

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Why Bill Gates' New Natrium Reactor Is a Big Deal

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Goodbye to nuclear energy in America: This state unveils the most futuristic generator in history

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India close to completing its most advanced nuclear plant ever in boost for clean energy | The Independent

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India close to completing its most advanced nuclear plant ever in boost for clean energy | The Independent

Small modular reactor fuel could be used to build nuclear bomb, experts ... 31 July

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IRISH CHEMICAL NEWS ISSUE NO.3 JULY 2024





EuChemS is regularly engaged in high level science-policy platforms, the Zero Pollution Stakeholder Platform amongst them. The European Commission, in cooperation with the European Committee of the Regions, set up this Zero Pollution Stakeholder Platform to achieve the Zero Pollution ambition by 2050. In this editorial, I will analyse the mission of this platform and the role that EuChemS can play in achieving this very ambitious target.

Ioannis Katsoyiannis,

Department of Chemistry, Aristotle University of Thessaloniki, Greece, July 15, 2024

The Platform effectively mainstreams the Zero Pollution agenda. In particular, the Zero Pollution vision for 2050 is for air, water and soil pollution to be reduced to levels no longer considered harmful to health and natural ecosystems, that respect the boundaries with which our planet can cope with, thereby creating a toxin-free environment. This is translated into key 2030 targets to speed up the reduction of pollution at source. These targets include: improving air quality to reduce the number of premature deaths caused by air pollution by 55%; improving water quality by reducing waste, plastic litter at sea (by 50%) and microplastics released into the environment (by 30%); improving soil quality by reducing nutrient losses and chemical pesticides' use by 50%; reducing by 25% the EU ecosystems where air pollution threatens biodiversity; reducing the share of people chronically disturbed by transport noise by 30%, and significantly reducing waste generation and by 50% residual municipal waste.

The Zero Pollution action plan brings together stakeholders and experts of different policy areas, such as health, agriculture, research and innovation, transport, digitalisation and the environment. It focuses on creating co-ownership, promoting collaboration, and fostering integrated solutions to maximize synergies with decarbonisation and post-COVID 19 recovery efforts.

In this effort, EuChemS will approach the challenges from the angle of chemical sciences. Until now, six Zero Pollution Meetings took place. In addition, a conference was held in Brussels in December 2022 and a Zero Pollution Monitoring and Outlook meeting took place in January 2024. In every meeting EuChemS was present. At the conference, I had the honour of being invited to provide a statement about the situation that Europe is currently facing, regarding the chemical status of water air and soil. In my speech, I highlighted three key areas that should be considered, from a chemical standpoint. Firstly, the high rate of European groundwater and surface water bodies which failed to achieve good chemical status. Secondly, how waste reduction may cause other pollution-related issues due to waste burning, and lastly, I pointed out how the energy crisis may lead people to rely on hazardous heating materials, which is an issue that should be considered from a Zero Pollution standpoint. In addition, I highlighted the science policy activities of EuChemS during the statement I gave in the general debate of the UN water conference, which took place in March 2023, in New York. In this direction, EuChemS and its division of Chemistry and Environment continuously participates in consultation campaigns and provides its expertise in identifying problems and proposing solutions for the pressing environmental problems that not only Europe but the whole world is facing.



EuchemS participation at the Zero Pollution Meeting and the reception of the President of the European Commission



New ESEC3 publications shed light on careers and diversity amongst chemists

Jun 4, 2024

The 3^{rd} Employment Survey for European Chemists was completed in 2020. Led by Professor Reiner Salzer in close collaboration with Dr. Nineta Hrastelj, Secretary General of EuChemS, and supported by ACS, EuChemS-EYCN, FECCIA and ECTN the survey gathered insights from chemists on the employment landscape. The conclusions of the survey were recently published in "Chemistry – a European Journal". The data gathered were approached from two angles: graduate careers and diversity in the chemical workforce.

The article "European Employment Survey for Chemists (ESEC3) Careers of Chemistry Graduates in Europe" (Salzer, et al., 2024a) first established the high mobility amongst students: half of MSc and PhD graduates (the significant majority of respondents) spent some time away from their home country during their studies, and the largest group of doctoral students (45%) aims to work outside of their country for a few years before returning as well. With regards to future careers, most MSc students aim to study further, while 41% plans to go to industry. Many respondents also indicated that information available on career opportunities is lacking.[NH1]

In the same issue, the article "Employment Survey for European Chemists (ESEC3) How Diverse is Europe's Chemical Workforce?" (Salzer, et al., 2024b) tackles ESEC3 results related to the many facets of diversity, such as gender, ethnic background and sexuality amongst others. This shows a balance between respondents (50% female, 49% male). However, issues were also highlighted, such as more women were reporting sexual harassment at work or refusing/being unable to respond than men. More than half of chemists experienced some sort of discrimination – primarily being treated as incompetent, or feeling isolated. Nevertheless, most chemists were satisfied with their jobs, and reported that it is related to their qualification.

More details on ESEC3, and the results of ESEC2 (2017) as well as ESEC1 (2013) can be found <u>here</u>, as well as links to the full articles with more results.

The preparations for the 4th survey are ongoing – so keep an eye out for more info on ESEC4, which will be conducted in 2025. You will be able to find details on the above link in the near future.

Salzer, R. Hrastelj, N. Smith, A. (2024a). European Employment Survey for Chemists (ESEC3) Careers of Chemistry Graduates. *Chemistry – a European Journal, e202400730* https://doi.org/10.1002/chem.202401223

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EuChemS Historical Landmark Plaques for the Legacy of Karl Ziegler and Gulio Natta inaugurated

Jun 13, 2024

EuChemS Historical Landmark Award



Milan, Italy Photo: Politecnico di Milano

Mulheim, Germany Photo: Patrick Kaut/MPI für Kohlenforschung

Legacy of Karl Ziegler and Gulio Natta

The 2022 EuChemS Historical Landmark Award on the European Level was received jointly by the Max-Planck-Institut (MPI) für Kohlenforschung in Mülheim, Germany and the "Giulio Natta" Department of Chemistry, Materials and Chemical Engineering at the Politecnico in Milano, Italy. The plaques were awarded to the locations related to Karl Ziegler and Giulio Natta – two chemists, who, through competition and collaboration, advanced polymer chemistry and production for which they received a shared Nobel Prize.

Therefore, on this occasion, two ceremonies were held in close succession, inaugurating the plaque at both locations. Angela Agostiano, EuChemS President, Gianluca Maria Farinola, President of the Italian Chemical Soicety and Sabine Becker, GDCh Vice President held speeches at both ceremonies.

The first event was held on 17 May, in Mülheim. Frank Neese, managing Director at the MPI für Kohlenforschung, hosted the ceremony, where Alois Fürstner (MPI) held a talk on Ziegler-Natta's research work, complemented by Guetano Guerra, former President of the Italian Chemical Society. The plaque was unveiled by Marc Buchholz, Mayor of Mülheim a.d.Ruhr, together with representatives from MPI, Politechnico Milano and EuChemS. The ceremony in Milan on 21 May was hosted by Prof. Donatella Sciuto, Rector of Politecnico di Milano. Prof. Marinella Levi, Head of the Department Of Chemistry and Simonetta D'Amico, Municipial councillor of Milan as well as Gabriele Mei from the board of EuroPlastics Italia addressed the audience. Before revealing the Plaque in the lecture hall of the politechnico's chemistry department, the attendees could also listen keynotes by MPI Director Alois Fürstner and Maurizio Galimberti from Politechnico Di Milano.

EuChemS kindly thanks the Max-Planck-Institut (MPI) für Kohlenforschung and Politecnico di Milano for the excellent organisation of these high-quality events.

You can learn more about the EuChemS Historical Landmark Award, and see all landmarks <u>here</u>, and you can read more details about the Ziegler-Natta legacy <u>here</u>.





IRISH CHEMICAL NEWS ISSUE NO.3 JULY 2024

















EuChemS provides feedback on Horizon 2025

May 6, 2024

The European Commission held a consultation on the development of the Horizon Europe 'main' work programme 2025. Participants could address each destination in each of the six clusters that represent the overarching themes for Horizon. In addition, feedback could be given on other Horizon-related initiatives, such as research infrastructures and innovation ecosystems amongst others.

EuChemS reached out to its network to find suitable contributors, and provided feedback on the following topics, relevant to European chemistry:

- <u>Achieving technological leadership for Europe's open strategic autonomy in raw materials</u>, <u>chemicals and innovative materials</u>
- <u>Consolidation and evolution of research infrastructures, research infrastructures services, and technology development</u>
- <u>Clean environment and zero pollution</u>
- <u>Unlocking the full potential of new tools, technologies and digital solutions for a healthy</u> <u>society</u>

In its response, EuChemS highlighted the importance of tackling PFAS while approaching the topic scientifically, and the role of chemistry and energy intensive/chemical industry in achieving climate goals.



EuChemS participates in Strategic Dialogue on the Future of EU Agriculture

May 6, 2024

EuChemS was invited to the Strategic Dialogue on the Future of EU Agriculture by the European Commission, to provide science- and chemical policy perspectives related to the union's agri-food policy. The dialogue sought avenues on how to tackle agri-policy challenges related to sustainability and the planetary boundaries, as well as on how opportunities offered by knowledge and technological innovation can be utilised in agriculture.

In its response, EuChemS emphasized the value in supporting research and development, and academia-policy discussions exemplified by the EuChemS Periodic Table workshops. The elements of <u>nitrogen</u>, <u>phosphorus</u> and the substance <u>glyphosate</u> were highlighted, as well as recommendations to incentivise alternative methods.

The entire recommendation letter can be read here.



A Special of Irish Chemical News will follow shortly covering the European Chemistry Congress ECC-9 held in Dublin Ireland July 7-11.



erc <u>https://erc.europa.eu/homepage</u>

ERC

Lump sums in Advanced Grants 2024 | ERC 30 May https://erc.europa.eu/news-events/news/lump-sums-advanced-grants-2024

ERC ADVANCED GRANTS

Deadline 29 August 2024 EU Funding & Tenders Portal (europa.eu)

ERC PROOF OF CONCEPT GRANTS

17 September 2024 EU Funding & Tenders Portal (europa.eu)

2000th ERC Proof of Concept Grant awarded

11 July 2000th ERC Proof of Concept Grant awarded | ERC (europa.eu)

ERC Work Programme 2025 adopted

9 July ERC Work Programme 2025 adopted | ERC (europa.eu)

ERC grantee Elvan Böke receives EMBO Gold Medal 2024

26 June ERC grantee Elvan Böke receives EMBO Gold Medal 2024 | ERC (europa.eu)

Speech on research security, openness and communication to G7 Research Ministers

10 July

Speech on research security, openness and communication to G7 Research Ministers | ERC (europa.eu)



IRC

Notice to research community on the establishment of Taighde Éireann – Research Ireland

1 August



Minister for Further and Higher Education, Research, Innovation and Science Patrick O'Donovan announced **August 1, 2024** as <u>the establishment day of Taighde Éireann – Research Ireland</u>, Ireland's new competitive research and innovation funding agency. The new agency amalgamates the Irish Research Council (IRC) and Science Foundation Ireland (SFI) and will capitalise on the recognised strengths of these two agencies in driving world class research and innovation in Ireland. The establishment of Taighde Éireann – Research Ireland is the keystone <u>of Impact 2030: Ireland's</u> <u>Research and Innovation Strategy</u>, and the new agency will be central to realising the ambitions set out in the strategy.

The Irish Research Council continues to operate as normal for an interim period, pending the transfer of its activities and portfolio of awards to Research Ireland. We will update our awardee community, partners and stakeholders further in due course via our website and other channels on the transition process, and we will endeavour to ensure that the process is managed as smoothly as possible and with minimum disruption to our core work.

The **Research and Innovation Act 2024** was enacted in June 2024 and outlines the objectives and functions of Taighde Éireann – Research Ireland. The new agency will operate under the aegis of the Department of Further and Higher Education, Research, Innovation and Science, in close collaboration with the Higher Education Authority, as well as Enterprise Ireland and the IDA and other research funding agencies.

The legislation places research in all disciplines on a statutory footing for the first time. The establishment of the agency will develop national capacity to respond to grand challenges, such as the green and digital transitions, using integrated approaches from a range of disciplinary perspectives.

Taighde Éireann – Research Ireland will promote and support the contribution of research and innovation to Ireland's economic, social, cultural, and environmental development and sustainability, as well as strengthen the engagement between the research and innovation system and enterprise, Government and public bodies, the voluntary sector and society.

Ten new DOROTHY European Fellowships to tackle major public health threats

5 June

The **DOROTHY programme** which launched in 2021, has confirmed its second cohort of research fellows. A total of \notin 2.6 million is being invested in funding for ten fellows.

The researchers will embark on a 36-month postdoctoral fellowship with a focus on public health crises. Among the research being funded are projects examining the interrelation between obesity and cancer, novel treatments of airborne infections, microscopy practices and reproductive crises, the impact of the COVID-19 pandemic and the Ukrainian refugee crisis on displaced women across the island of Ireland, as well as the global rise in depression and anxiety among young people. The fellows will tackle public health crises from a variety of disciplinary perspectives ranging across the sciences, humanities and engineering.

The DOROTHY programme is a postdoctoral research programme co-funded by the European Union's Horizon 2020 research and innovation programme under Marie Skłodowska-Curie Actions (MSCA). Three Irish funding agencies, the <u>Irish Research Council</u> (IRC), the <u>Health Research</u> **Board** (HRB) and the <u>Environmental Protection Agency</u> (EPA) have collaborated to create this interdisciplinary fellowship programme. The complementary expertise of the three agencies – namely funding excellence in pan-disciplinary research (IRC), health perspectives (HRB) and environmental policies (EPA) is key to DOROTHY's scope and ambitions.

Challenges to public health include human resources for health, health financing, conflict and humanitarian crises, mental health, poverty, climate change, child health, reproductive health, and the global 'infodemic'. As the COVID 19 pandemic showed, a situation becomes a public health crisis or emergency when its scale, timing, or unpredictability can lead to health consequences which have the potential to overwhelm society and our health system. To this end, evidence-based research and addressing 'knowledge gaps' are the basis of successful public health interventions. These new DOROTHY fellows, along with the current cohort, will examine ways in which we can address these complex challenges from a variety of perspectives.

Fellowships will have an international outgoing phase of 18 months, hosted at a Higher Education Institution (HEI) or Research Performing Organisation (RPO) outside Ireland, followed by a return phase of 18 months to a HEI/RPO within Ireland.

Along with the fellows from the first cohort, the new DOROTHY researchers will examine ways in which varying public health crises can be addressed. During their fellowships, the awardees will conduct innovative, cross-disciplinary research, as well as participating in programme-wide training events. Reaching out beyond traditional disciplinary lines, allowing for an effective approach to the multifaceted nature of public health crises, DOROTHY will be underpinned by multidisciplinary cooperation leading to development of a cohort of experts able to tackle public health crises from multiple perspectives.

Welcoming the announcement, Director of the Irish Research Council, Peter Brown, said:

The Irish Research Council is delighted to partner in the DOROTHY MSCA programme, supporting as it does early career researchers from a variety of disciplines to conduct and manage research projects that have strong relevance to public health crises. The programme aligns with the ambitions of Impact 2030: Ireland's Research and Innovation Strategy to strengthen multi- and trans- disciplinary research to deliver enhanced outcomes for citizens and society, and to develop the national and international talent needed to do so.

Dr Mairéad O'Driscoll, Chief Executive of the Health Research Board said:

"The HRB is committed to building strong research capacity to support an effective response to public health emergencies. Through this partnership the HRB is delivering on our commitment to develop future leaders, create solutions to societal challenges and deliver research to inform policy and practice around public health crises.

Welcoming the announcement **Dr Eimear Cotter, Director of the EPA Office of Evidence and Assessment**, said:

"Our health and the quality of our environment are intrinsically linked. Environmental degradation and climate change have multiple direct and indirect impacts on public health and wellbeing and must be tackled in an integrated way. The EPA is delighted to again partner with the IRC and HRB on this prestigious fellowship programme to support innovative interdisciplinary research to address public health challenges".

The successful projects awarded in the second DOROTHY COFUND cohort are:

- Targeting MAITs (a type of immune cell) as an Opportunity Beyond Weight Loss for Solving the Public Health Crisis of Obesity-associated Cancer – thinking outside the box by looking inside the adipose tissue, Dr Fearon Cassidy, Maynooth University and Karolinska Institutet, Sweden
- Protection of the human digestive system from micro(nano)plastic contamination, Dr Xiaohui Lin, University College Dublin and Ghent University, Belgium
- Antimicrobial photocatalytic coatings on sustainable construction materials carriers, Dr Gurbir Kaur, Trinity College Dublin and Universidad de Navarra, Spain
- Novel ionically conductive biomaterial scaffolds for cardiovascular tissue engineering, Dr Aleksandra Serafin, University of Limerick and University of Oxford, UK
- •A cross-border comparison of care strategies that women refugees and asylum seekers employ for survival during converging public health crises in Ireland and Northern Ireland, Dr Amanda Lubit, Dublin City University and Max Planck Institute for the Study of Religious and Ethnic Diversity, Germany
- Harnessing groups for health in response to public health crises: Insights from the COVID-19 pandemic, Dr Aoife Marie Foran, University of Limerick and University of Queensland, Australia
- Violence as Contagious: Historicising Anglophone Narratives of Violence, Health, and Disease, 1800s to the Present, Dr Sophie Franklin, University College Dublin and University of Reading, UK
- •A Mixed-method study on the relAtionship between poRnography and attItudes towards aGgression and viOLence among aDolescents [MARIGOLD], Dr Sandra Sanmartín Feijóo, University of Galway and University of Antwerp, Belgium
- Youth Mental Health: A Public Health Crisis in need of Investigation, Dr Niamh Dooley, RCSI University of Medicine and Health Sciences and King's College London, UK
- Imaging/Imagining Reproductive Crisis: time-lapse microscopy, animation and fertility discourse, Dr Rebecca Close, University College Cork and Institute for the History of Science, Spain

Along with the fellows from the first cohort, the new DOROTHY researchers will examine ways in which varying public health crises can be addressed

For further information on the MSCA DOROTHY COFUND programme please see the list of the awardees below and the link to the DOROTHY website.

website.

List of MSCA DOROTHY Fellowship awards

DOROTHY Website



CAS Insights

How nanotechnology delivers massive change in energy, biomedicine and more. 3 May 2024

How nanotechnology delivers massive change in energy, biomedicine and more. | CAS and Nanotechnology Report | CAS Insights

From sci-fi to reality: brain-computer interfaces and the future of bioelectronics 17 May

From sci-fi to reality: brain-computer interfaces and the future of bioelectronics | CAS

Evolving beauty: The rise of sustainable and natural ingredients for cosmetics 24 May

The rise of sustainable and natural ingredients for cosmetics | CAS

Ending Alzheimer's: Emerging trends in biomarkers, gene therapy, and more 31 May

Ending Alzheimer's: Emerging trends in biomarkers, gene therapy, and more | CAS DOI: <u>10.26434/chemrxiv-2024-pt7wp</u>

Biomedical breakthroughs in self-healing materials

7 June Biomedical breakthroughs in self-healing materials | CAS

Are inverse vaccines the cure for autoimmune diseases?

13 June Are inverse vaccines the cure for autoimmune diseases? | CAS

Scientific search engines: Why designing them takes art plus science

28 June Scientific search engines: Why designing them takes art plus | CAS

Innovating the chemical recycling of plastics

5 July Innovations in chemical plastic recycling | CAS

Decoding neurodegenerative diseases like Alzheimer's, Parkinson's, and Huntington's

12 July Decoding neurodegenerative diseases like Alzheimer's, Parkinson's, and Huntington's | CAS

Innovations in nanotechnology and materials science

26 July Identifying emerging trends in nanotechnology research | CAS



Science SFI News, Updates & Reports



The SDG Challenge

SDG 2: Zero Hunger

SFI in partnership with Irish Aid are delighted to launch the **<u>SDG Challenge</u>**.

The **SDG Challenge** will support transdisciplinary and international teams to develop transformative, sustainable solutions to development challenges under the UN Sustainable Development Goals (SDGs). The Challenge Theme of this call will be **SDG 2: Zero Hunger: "End hunger, achieve food security and improved nutrition and promote sustainable agriculture"**. Applications will be considered that contribute towards one or more of the five SDG 2 outcome targets; improving access to food, ending all forms of malnutrition, enhancing agricultural productivity, sustainable food production and resilient agricultural practices, and maintaining genetic diversity of food production.

Applications are invited where impact will be achieved in selected countries (see below) where Irish Aid works. Teams will be awarded up to €300k to develop their idea, with an overall **prize award of** €1M available.

Eligible partner countries for this SDG Challenge Call are: Cambodia; Laos; Palestine; Vietnam; ODAeligible country on the African continent; ODA-eligible Small Island Developing State (SIDS).

DEADLINE Open 8 October 2024, 13:00 Dublin Local Time

Contact: Dr Maysoun Mustafa, Scientific Programme Manager challenges@sfi.ie

Full details of the SDG Challenge and how to apply are available here:

The SDG Challenge

Contact Us Tel: +353 (0) 1 6073200 I Email: <u>info@sfi.ie</u> I Web: <u>www.sfi.ie</u>



SFI-Defence Organisation Innovation Challenge 2024

Science Foundation Ireland, the Department of Defence and the Irish Defence Forces have partnered to create the <u>SFI-Defence Organisation</u> <u>Innovation Challenge</u>. The SFI-Defence Organisation Innovation Challenge, a challenge programme, aims to incentivise and support academic researchers to develop technologies for utilisation and impact across the Defence Organisation which also have beneficial application and strong positive impact potential for Irish society.

Under this call, teams will have the opportunity to submit applications to address a number of challenges set by the Irish Defence Forces or propose disruptive ideas for new technologies that align to its future needs.

As part of the programme, selected teams will work closely with the Irish Defence Forces and progress through several phases to compete for an overall **€1M prize award.** The prize will enable the winning team to develop and plan for deployment of their solution.

For further details on the challenges and programme, please go to the <u>programme call</u> <u>website.</u>

SFI will host two webinars to provide prospective applicants, research bodies and other stakeholders with an overview of this exciting new initiative:

Webinar #1 - 11th June - 2PM - Register Here

Webinar #2 - 1st August – 3PM – <u>Register Here</u>

DEADLINE: Open 6 September 2024, 13:00 Dublin Local Time

CONTACT: Dr Stephen O'Driscoll, Challenge Lead <u>challenges@sfi.ie</u>

SFI-Defence Organisation Innovation Challenge

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IRISH CHEMICAL NEWS ISSUE NO.3 JULY 2024

Co-Centre for Climate + Biodiversity + Water Launches as Over 100 Stakeholders come together to Shape a More Sustainable Future



The new €41.3 million Co-Centre will deliver solutions to the most pressing challenges posed by climate change, biodiversity decline and water degradation across Ireland, Northern Ireland and Great Britain

8th May 2024: Over 100 researchers, industry leaders and policy partners from across Ireland, Northern Ireland and Great Britain are gathering for the first time to celebrate the Co-Centre for Climate + Biodiversity + Water today, where they will draw up project plans for integrated solutions to the most pressing common challenges of climate change, biodiversity decline and water degradation.

The €41.3 million Co-Centre, initially funded for six years by the Government of Ireland (Science Foundation Ireland and Shared Island Fund); the Northern Ireland Department of Agriculture, Environment & Rural Affairs; and UK Research & Innovation. In addition, the project will also receive more than 30% co-funding from over 30 industry partners. The Co-Centre is a collaboration between Trinity College Dublin and Queen's University Belfast, and University of Reading, UK.

The Co-Centre is one of the first international research centres to bring researchers across Ireland, Northern Ireland and Great Britain together at such scale. The Co-Centre is placed to address challenges around maintaining a stable and liveable climate, securing and restoring biodiversity and the ecosystem services provided by nature, adapting to climate change, and reversing water degradation, which require collaborative cross-border approaches.

Co-Director of the Co-Centre for Climate + Biodiversity + Water, Professor Yvonne Buckley, Trinity, said: "This launch event serves as a timely call to action – for researchers, industries in all sectors, and those working across government, to come together to co-develop research projects that will help us find new ways to solve myriad climate, biodiversity and water challenges.

"Over the next six years the unique combination of disciplines, skills and implementation pathways linked to the Co-Centre will deliver societal impacts that stretch far into the future. It is the vision and commitment to this cause of the researchers, industry leaders and policy developers who are involved that will be key to tackling the challenges we face now and in the coming decades. We have an important two days ahead."

Co-Director of the Co-Centre, Professor Mark Emmerson, Queen's University Belfast, said: "We need a step change in how we harness our collective resources to tackle challenges around sustainable agriculture and rural livelihoods, the impacts of new products and processes on our planetary life support systems, implementation of known solutions, and the development of effective new solutions that can be fairly and rapidly adopted across society."

Deputy Director Professor Ed Hawkins, University of Reading, said: "The challenges we face on these islands do not stop at lines on a map. The joint Ireland-UK Co-Centre is a much-needed opportunity to bring together research across borders on the risks from – and solutions to – the myriad of climate, biodiversity and water issues facing society."

SFI's Director of Science for the Economy, Dr Siobhán Roche, said: "Today's launch of the Co-Centre for Climate + Biodiversity + Water marks a significant step forward in collaboratively addressing one of the most critical challenges of our time. Together with our co-funders, we look forward to seeing the Co-Centre generate excellent research and innovation at scale over the next six years."

Welcoming the launch of the Co-Centre, Minister for Further and Higher Education, Research, Innovation and Science, Patrick O'Donovan, said: "Congratulations to all the academic, industry and funding partners involved in the Co-Centre for Climate + Biodiversity + Water. You are each playing an integral role in creating what promises to be an impactful research dynamism between Ireland, Northern Ireland and Great Britain over the next six years. The challenges posed by climate change require nothing less."

Frances Wood, UKRI International Director, said: "Today's launch is a huge step forward in our joint efforts to tackle the pressing environmental issues we face. By merging solid research with active partnerships across academia, industry, and government, we're laying the groundwork for significant breakthroughs that will positively impact both our communities and natural environments. The strong commitment from a large range of stakeholders shows how determined we are to build a resilient and sustainable future together to create real-world solutions for climate change, biodiversity loss, and water management."

In an address shown at the launch, Minister of Agriculture, Environment and Rural Affairs, Andrew Muir, said: "Innovative collaborations such as this co-centre are crucial in tackling climate challenges on these islands and is another example of my department's strong record of collaboration in research funding by working in partnership with public funders across the UK, Ireland and in the US. The climate + research programme will not only benefit government policy decision making but also industry, civil society groups, NGOs and every citizen on these islands."

As part of the launch event, a major philanthropic gift of €1 million will be announced. This gift will fund a cross-jurisdictional PhD student programme, the "Sunflower Charitable Foundation PhD programme" supported by the Sunflower Charitable Foundation through Community Foundation Ireland.

As part of the opening, Professor Jane Stout, Vice President for Biodiversity and Climate Action at Trinity College Dublin, will chair the Business as usual is not an option discussion with Co-Centre Co-Directors, Prof. Yvonne Buckley and Prof. Mark Emmerson, and Deputy Director, Prof. Ed Hawkins.

On Day One (Wednesday 8th May) research themes will be discussed by project leads. These themes include projections; monitoring; enabling fair transformations; evidence discovery and integration; sustainable agrifood transitions; sustainable communities and livelihoods; investing in carbon and nature. Industry leaders and policymakers will later network with research project leads. On Day Two (Thursday 9th May) more detailed research projects will be developed, ready to kick into gear, after teams have formed the required connections.

Minister O'Donovan announces €34m for healthcare, climate and tech research

Minister for Further and Higher Education, Research, Innovation and Science, Patrick O'Donovan TD, has today announced 28 funding awards valued at €34 million to support research across seven Higher Education Institutions.

Among the successful research projects are:

- Design development of sustainable support structures for larger offshore wind turbines
- Investigating the effectiveness of a nasal vaccine against bacteria that causes whooping cough
- Determining the role of physical fitness in modulating the gut microbiome
- Identifying novel molecular treatments to protect the bones of someone with diabetes
- Using emerging 3D (bio)printing technologies to engineer tissue with the same structure and function as normal tissue
- Evaluating motion correction for functional MRI to improve brain imaging in infants

Speaking today, **Minister O'Donovan** said: "These awards support the development of world-class research in areas of science, technology, engineering and mathematics. The projects and higher education institutions are focusing on will help deliver solutions to some of the major challenges facing society, including in healthcare, the environment and technology."

The 28 awards are of 4-5 years' duration and will support 124 research positions including 58 postdoctoral positions, 53 PhD students and 13 research assistants and other positions. This programme has been funded in collaboration with SEAI.

Dr Ruth Freeman, Director, Science for Society at Science Foundation Ireland, said: "*The SFI Frontiers for the Future awards provide opportunities for independent investigators to conduct highlyinnovative, original research on important questions. I would like to thank SEAI for collaborating on this programme with SFI, supporting vital research in the area of sustainability.*"

Director of Research and Policy Insights at Sustainability Energy Authority of Ireland (SEAI), **Margie McCarthy**, said: "SEAI is delighted to be a co-funding partner in the Frontiers for the Future Programme. These awards are excellent examples of national innovation and creativity. By supporting independent researchers, we can help grow Ireland's national capacity to conduct excellent scientific research. We look forward to the new insights and knowledge that the co-funded awards will bring to offshore wind energy support structures and anaerobic digestion ecosystems, and how their results will advance Ireland's clean energy transition."

The research will be undertaken in the following seven research bodies: Dublin City University, Trinity College Dublin, University College Dublin, Tyndall National Institute, University College Cork, Teagasc, and University of Galway.

View the full list of awards. #BelieveInScience Three Park Place, Hatch Street Upper, Dublin 2, Ireland

ARC HUB to Commercialisation



SFI ARC Hub Programme - Northern & Western Region Call

Science Foundation Ireland is pleased to announce that the SFI Accelerating Research to Commercialisation (ARC) Hub Programme – Northern & Western Region Call has launched today.

The goal of the SFI ARC Hub Programme is to establish a new model for regional innovation and entrepreneurial training, that will catalyse a step-change in the translation of cuttingedge publicly-funded research toward impact at a regional level. The SFI ARC Hub Programme will enhance and accelerate the commercialisation of research to create new products, processes and services.

This programme call will support the establishment of an SFI ARC Hub in the Northern & Western Region, operating in a specific thematic area aligned with the region's strategic priorities and the 'National Smart Specialisation Strategy for Innovation 2022-2027' (S3).

The SFI ARC Hub Programme – Northern and Western Regional Call is co-funded by the Government of Ireland and the European Union through the ERDF Northern and Western Regional Programme 2021-2027. The total funding that can be requested from this programme is a maximum budget of €26.67 million (excluding overheads).

The closing date for applications is 23rd September 2024, 13:00 Dublin Local Time.

Further information on the SFI ARC Hub Programme and how to apply is available on our website:

SFI ARC Hub Programme - Northern & Western Region Call

Contact Us

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IRISH CHEMICAL NEWS ISSUE NO.3 JULY 2024

Minister O'Donovan announces SFI Industry RD&I Fellowships for 15 researchers

Monday, 17th June 2024: Minister for Further and Higher Education, Research, Innovation and Science, Patrick O'Donovan TD, has today announced a €1.4 million investment in 15 awards through the SFI Industry Research, Development and Innovation (RD&I) Fellowship Programme.

The Programme will support the temporary placement of academic researchers in 12 companies, to conduct research across a variety of areas including energy efficient communications networks, electrochemical sensors for rapid medical diagnostics, seaweed extract for use in cosmetics/health products, moorings for offshore wind platforms, and reducing cement's carbon footprint using new generation low clinker cement technology.

Minister O'Donovan said: "I am delighted to announce the SFI Industry RD&I Fellowship Programme recipients, connecting academic researchers and industry partners to collaborate and mutually benefit from each other's invaluable knowledge and expertise. Academic-Industry collaborations maximise the economic and societal impact of Irish State-funded research and resources, and foster impactful innovation. I look forward to seeing the achievements that will shape the years ahead."

The industry partners collaborating on these awards will provide co-funding with a total value exceeding $\in 1$ million. Industry partners will benefit from the expertise of the Fellow, while Fellows are provided with an opportunity to be immersed into industry and gain relevant business knowledge and experience.

Dr Siobhan Roche, Director, Science for the Economy at Science Foundation Ireland, said: "Science Foundation Ireland is really pleased to support these academia-industry connections. This funding supports colleagues in academia to bring their research knowledge and skills to an industry partner and work collaboratively on solutions to industry-informed challenges. The SFI Industry RD&I Fellowship Programme provides a unique opportunity for researchers, drives research excellence through knowledge exchange, and enhances the industry partners' competitive advantage."

Examples of projects include:

- Rapid medical diagnostics using a smart sensing interface, in collaboration with Analog Devices Inc (ADI)
- Seeking new, sustainable alternatives to reduce environmental impact of composites for renewable energy devices, in collaboration with ÉireComposites
- Accelerating the reduction of cement's carbon footprint, in collaboration with Ecocem
- Improve detection and understanding of the small signalling particles that respond to cancer cells, in collaboration with Beckman Coulter Life Sciences
- A seaweed compound to improve the cosmetics and health product industry, in collaboration with Bantry Marine Research Station
- To develop and commercialise a load reduction device to reduce the cost of the moorings for offshore wind platforms, in collaboration with Dublin Offshore Technology
- Exploring new sources or technologies to meet future bandwidth requirements of networks in an energy efficient manner, in collaboration with Eblana Photonics

Fellowships can have a duration of between one and 12 months if full-time, and between two and 24 months if part-time. Fellows are from 9 higher education institutes, including Trinity College Dublin, University of Galway, University of Limerick, University College Dublin, RCSI University of Medicine and Health Science, Technological University of the Shannon, University College Cork, Atlantic Technological University, and Dublin City University.

The collaborating industry partners include Analog Devices Inc (ADI), GlasPort Bio Ltd., Subsea Micropiles Ltd., ÉireComposites, BioMarin Pharmaceutical Inc., Dublin Offshore Technology, Ecocem, Eblana Photonics, Beckman Coulter Life Sciences, NEG8 Carbon, and Bantry Marine Research Station.

Applications for the 2024 SFI Industry RD&I Fellowship call are now open. Deadline for submissions is 26th June 2024.

For more information on the SFI Industry RD&I Fellowship Programme, visit the programme webpage <u>SFI Industry RD&I Fellowship Programme</u>.



Royal Society-SFI University Research Fellowship

The **<u>Royal Society-SFI University Research Fellowship 2025 Call</u> is now open for applications.**

This scheme is for outstanding scientists based within eligible research bodies in the Republic of Ireland who are in the early stages of their research career and have the potential to become leaders in their field. It enables early career researchers to apply for up to eight years' research funding including salary and research costs.

The deadline for applications is **10th September 2024** at 3:00 pm (UK time).

An information webinar about this programme will be held on **17th July 2024.** Details of the webinar and further information on the Royal Society–SFI University Research Fellowship 2025 Call (including all eligibility criteria) is available on our website:

Royal Society-SFI University Research Fellowship

Contact Us

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IRISH CHEMICAL NEWS ISSUE NO.3 JULY 2024



Disruptive Technologies Innovation Fund (DTIF)

SFI would like to invite you to an information webinar delivered by Enterprise Ireland on the Disruptive Technologies Innovation Fund (DTIF) on **Thursday 25th July, 09.00-10.00 Dublin Local Time.**

The DTIF is a is a €500 million challenge-based fund established under Project Ireland 2040 and the National Development Plan (NDP) 2018-2027. It is managed by the Department of Enterprise, Trade and Employment and administered by Enterprise Ireland.

The aim of the call is to encourage collaborations among industry and the research sector into the development and commercialisation of ground-breaking technologies.

Call 7 is a rolling call and is open for submission of applications until the **30th April 2025.**

Link to the webinar: https://teams.microsoft.com/l/meetup-join

Disruptive Technologies Innovation Fund

Minister O'Donovan announces establishment of Taighde Éireann – Research Ireland

Wednesday, 24th July 2024: Minister for Further and Higher Education, Research, Innovation and Science Patrick O'Donovan has today announced 1 August 2024 as the establishment day of Taighde Éireann – Research Ireland, Ireland's new competitive research and innovation funding agency. The new agency amalgamates the activities and functions of the Irish Research Council (IRC) and Science Foundation Ireland (SFI) and will capitalise on the recognised strengths of these two agencies in driving world class research and innovation in Ireland.

The establishment of Taighde Éireann – Research Ireland is the keystone of Impact 2030: Ireland's Research and Innovation Strategy, and the new agency will be central to realising the ambitions set out in the strategy.

Announcing the establishment today, Minister O'Donovan said: "This is a really significant day for our research and innovation community. The establishment of Taighde Éireann – Research Ireland represents a step-change in how research and innovation will be funded, maximising the impact of national competitive research and innovation funding. This new agency will be a vital support in building the successful future of research and innovation in Ireland, engaging national challenges like the green and digital transitions, and boosting our international standing as research innovators in emerging fields and the opportunities ahead.

"I'm also pleased to announce the appointment of the Chairperson of the new agency Board, Michael Horgan, who will bring significant governance and leadership experience to drive the new agency forward, achieving its strategic goals and enabling Taighde Éireann - Research Ireland to fulfil the ambitions set out in Impact 2030.

"The establishment of this new agency is a real opportunity to develop an enhanced new approach, fully integrating all aspects of the research and innovation ecosystem.

"Researchers can be reassured that there will be no interruption to ongoing services and funding programmes while the new agency is being set up, for anyone who is currently participating in IRC and SFI Programmes. There are positive changes ahead, but they'll be implemented in a carefully planned way, so that our researchers can be confident in this new agency and focus on the important work at hand.

"I would also like to announce that Ms Celine Fitzgerald has agreed to take on the role of Chief Executive Officer for the new agency. This will be a temporary appointment, pending the recruitment of a new CEO on a permanent basis. Ms. Fitzgerald has an outstanding track record of leadership in both the public and private sectors, and I am confident that she is ideally equipped to lead Taighde Éireann – Research Ireland into its first months in operation."

The Research and Innovation Act 2024 was enacted in June 2024, and outlines the objectives and functions of Taighde Éireann – Research Ireland. The new agency will work under the aegis of the Department of Further and Higher Education, Research, Innovation and Science, in close collaboration with the Higher Education Authority, as well as Enterprise Ireland and the Industrial Development Agency and other research funding agencies.

The legislation places research in all disciplines on a statutory footing for the first time. The establishment of the agency will develop national capacity to respond to grand challenges, such as the green and digital transitions, using integrated approaches from scientific, behavioural, economic, and cultural perspectives.

Taighde Éireann – Research Ireland will promote and support the contribution of research and innovation to Ireland's economic, social, cultural, and environmental development and sustainability, as well as strengthen the engagement between the research and innovation system and enterprise, Government and public bodies, the voluntary sector and society.

Taighde Éireann Research Ireland

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Minister O'Donovan announces €14.6m funding boost for early career researchers

Thursday, 11th July 2024: Minister for Further and Higher Education, Research, Innovation and Science, Patrick O'Donovan TD, today announced a €14.6 million investment in 25 projects to support early career researchers under the SFI-IRC Pathway programme.

Minister O'Donovan said: "This Pathway funding will help facilitate a defined journey from postdoctoral research to independent researcher. Bridging this gap is a challenging but critical milestone, and the research selected for investment will address key challenges and opportunities, ranging from new therapies for Parkinsons to the development of sustainable supercapacitors."

Projects include:

- Investigating the link between the microbiome and the developing brain
- Identifying the chemical biomarkers of Irish Whiskey
- Non-invasive brain stimulation to treat Parkinsonian symptoms
- An additive to lower the climate and air polluting impacts of manures
- Exploration of the habitability of Jupiter's moons
- The genomics of diverse bee species and how they adapt to their environment
- Development of sustainable supercapacitors

The SFI-IRC Pathway programme is a collaborative initiative between Science Foundation Ireland (SFI) and the Irish Research Council (IRC) to support early-career research across all disciplines and to encourage a cohesive research ecosystem in Ireland.

Commenting on the awards, **Dr Ruth Freeman**, **Director**, **Science for Society at Science Foundation Ireland**, said: "We are delighted to work in partnership with our colleagues in the IRC to deliver the SFI-IRC Pathway programme. It provides targeted support to early-career researchers who will use the funding to pursue independent research at the frontiers of knowledge. Investment in these projects will generate novel discoveries and insights across diverse research topics, from environmental sustainability to disease treatment and prevention, to wireless network security."

The awards will enable postdoctoral researchers to develop their career pathway and transition to become independent research leaders. The funding, covering a four-year period, will provide additional support for a postgraduate student who will be primarily supervised by the awardee.

The 25 research projects will be funded through 13 research bodies, as follows: Trinity College Dublin (2); Maynooth University (1); University College Cork (3); Tyndall National Institute (2); University College Dublin (7); Technological University Dublin (1); University of Limerick (1); Dublin Institute for Advanced Studies (1); RCSI University of Medicine and Health Sciences (1); The National Institute for Bioprocessing Research and Training (1); South East Technological University (1); University of Galway (2); Dundalk Institute of Technology (1); Dublin City University (1).

View the full list of projects here.



IDA Updates & Reports

Ireland's edge: Reinventing work and unlocking talent potential through generative AI

The use of AI in industry and society is not new. Many companies have for years used AI models for a range of tasks such as defect detection, supply chain optimisation, drug discovery, predictive maintenance, fraud detection and chatbots. In our daily lives, AI algorithms such as Machine Learning, Computer Vision and Natural Language Processing power e-commerce recommendations and voice-controlled virtual assistants. Generative AI (GenAI) models that create new content based on patterns learned from existing data have been used for many years, but advances in Large Language Models (LLM) have vastly increased the scale and scope of generative AI capability.

Ireland is in a strong position to maximise the potential benefits of generative AI tools such as GPTs. We have the highest level of third level attainment and highest level of STEM graduates per capita in the EU. Our workforce, as the LinkedIn data below shows, is equipped with generative AI insulated skills. The scientific ecosystem ranks in the top 10 globally for knowledge diffusion, impact and absorption. Ireland also has an agile, responsive national education ecosystem capable of producing the types of upskilling and reskilling programmes needed to deepen the workforce's technical and transversal skills.

How will Generative AI change skills and work?

A recent <u>Trinity College Dublin-Microsoft Ireland study</u> of 400 senior leaders in Ireland found that 49% of organisations are already using generative AI in some form and 47% believe the technology will enhance productivity. Globally, the <u>PwC 2024 CEO Survey</u> found that 70% believe generative AI will change how their company creates value and 58% expect generative AI to improve the quality of their products or services. Almost two-thirds expect it to have a positive impact on employee's time at work. The OECD view is that AI is unlikely to cause net job losses, but it will change the nature of work as generative AI is leveraged across business processes. LinkedIn members globally have already seen the core skills of their jobs evolve by 25% since 2015 . LinkedIn predicts that skills in Ireland will change by 54% by 2030, with GAI expected to accelerate this change to 73%. As generative AI tools are adopted by industry, skillsets required will continue to change, moving from routine tasks to more complex and creative unique work. This will drive increased demand for upskilling and reskilling, and potentially accelerate the shift to a skills-based labour market.

LinkedIn's skills framework examines how skills could be impacted by Generative AI technologies by two skill types:

- GAI-replicable skills: skills that can likely leverage generative AI such as content creation, data analysis, programming.
- GAI-complementary skills: skills that intrinsically rely on human proficiency and can be complemented by GenAI. These are transversal skills such as innovation, creativity, teamwork, leadership, problem-solving, negotiation, influencing.

Using the skills-based framework, LinkedIn have classified occupations by the percentage of core

skills that are potentially GAI-replicable GAI- complementary. Insulated occupations have a low proportion of GAI-replicable skills. Disrupted roles have more GAI-replicable skills compared to GAI-complementary skills.

Chart 1 shows the percentage of the 2+ million LinkedIn members in Ireland by age cohort and the proportion of roles that could be augmented or disrupted by generative AI and those that are insulated. Disrupted occupations indicate an opportunity to leverage generative AI to carry out routine tasks and processes, freeing up people to focus on higher value work that requires more creativity, critical thinking, problem solving and collaboration.

Table.01- Three groups of occupations

Group	Impact on occupations	Example	
Augmented by GAI These jobs' core skills include a large share of both of GAI-replicable and GAI-complimentary skills.	GAI may affect a relatively large portion of the skills in these jobs, leaving more time for higher value-added complementary skills.	Data Analysis automate the compulation and interpretation of metrics with GAI, enabling them to focus their time on GAI -complementary skills, such as cross-functional influencing and stakeholder engagement.	
Disrupted by GAI These jobs' core skills include a large share of GAI-replicable and a relatively low share of GAI complementary skills.	As GAI is adopted more broadly, these jobs will undergo reskilling, possibly leading to more innovation.	Language translators' skills shift from doing translations from scratch to reviewing and certifying machine-generated translations, or to specializing on specific legal or literary domains.	
Insulated from GAI These jobs have a relatively small proportion of GAI-replicable skills in their core skills.	As these jobs are relatively protected from the influence of GAI, their core skills are likely to remain unchanged in the near term. Some of these jobs tend to be succeptible to other forms of automation, such as robotics.	Real estate agents might utilize e of GAI for writing house g to descriptions, but core ar relationship management skills nd to would be insulated from GAI. ss of s.	

Chart.01- The potential impact of GAI across generations



IRISH CHEMICAL NEWS ISSUE NO.3 JULY 2024

The degree to which generative AI could be applied across industry sectors is shown in Chart 2, which shows the proportion of roles across FDI industry sectors that might be disrupted. augmented or insulated from generative AI. Again, there is significant opportunity to apply generative AI to reduce the time spent by workers on routine tasks and allow them to focus on more productive work that requires strong transversal skills. Consequently this will enable people to strengthen their generative AI insulated or transversal skills. The impact on occupations and industries will depend on how much and how quickly the market adopts generative AI technologies.



Chart.02- The potential impact of GAI varies across industries.

Leveraging AI and human skills to advance Irelands digital economy

The Irish education ecosystem is already keenly aware of the fundamental need for digital, AI and data skills for every citizen. The <u>IDA Ireland – Skillnet Ireland study</u> on digital and data skills for non-IT workers identifies the fundamental skills required across all industry and roles (Chart 3). The ability to understand, manage and analyse data will be critical to understand how generative AI tools can be used and their limitations. The <u>AI Skills Study</u> identifies the skills that educators, industry and policy makers need to appropriately and effectively manage and apply AI tools.

Government investment is providing the training and education opportunities required to upskill people and continue to produce talent with the skills to thrive in an AI enabled world. For example, the short, accredited Microcredentials available through <u>Microcreds.ie</u> and programmes provided by State agencies such as <u>Skillnet Ireland</u> provide a variety of courses aimed at upskilling the workforce in <u>AI</u> and <u>Data</u>.

Allied to this government investment in upskilling the workforce there are also important partnerships with industry to help scale such efforts. In this regard, Microsoft Ireland's SkillUpIreland programme is committed to reaching 1m students over 4 years via their <u>Dream Space</u> STEM programme and, allied to that initiative, is a national AI skilling programme in partnership with Fast Track in

IRISH CHEMICAL NEWS ISSUE NO.3 JULY 2024

to <u>IT</u> (FIT) to give people of all ages, experiences and ambitions the opportunity to develop their AI fluency and skills. These, and other industry led initiatives in partnership with NGOs or HEIs, add breadth and depth to Ireland's skilling and upskilling ambitions.

ndings below need to be treated with ca the proportion of survey respondents p try and function differently.	ution er		
Section A Core skills required across all industries and functions	Data Skills* Document design	Pharmaceuticals • Lean Methodologies • Digitisation • Data Governance	Manufacturing • Document Design • Digital Problem Solving
	Digital problem solving Digital communication and collaboration	Technology Data Governance Fraud detection and protection Agile Management	Sales and Marketing • Agite Management • Fraud detection and protection
Section B		International Finance Services • Data Security • Data Governance • Fraud detection and protection	Customer / Client Service • Digital Transformation • Digitisation
core skills required across pecific industries	Medical Technology • Lean Methodologies • Agile Management • Data Governance	Engineering • Digital Transformation • Lean Methodologies • Design Thinking	Compliance • Data Security • Fraud detection and protection
Soction A			Human Resources Data Governance Data Validation
Dection A Core skills required across unction groups	Operations • Digital Problem Solving	Ouality - Data Validation - Data Manipulation	Facilities DataInput DataManipulation

In the future of work the conversation must be about skills, not job displacement. Building the right skills in the current and future workforce to adopt and complement generative AI and automation technologies will be vital to maintain industry competitiveness. Transversal, data, and basic AI skills are key to maximise the benefits of AI technologies and understand the limitations.

Business Leaders need to understand the opportunities created by generative AI across their business and apply AI tools to generate insights, drive efficiencies, increase productivity, and improve how people experience work. Leaders must invest in talent development so employees have the capability to combine AI tools, business knowledge and transversal skills to innovate and invent new and better products and services; ultimately creating more rewarding, fulfilling and productive workplaces of the future.

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NIBRT opens new manufacturing research and training facility



- 25 July 2024
- NIBRT, a global leader in biopharmaceutical manufacturing training and research, announces official opening of major extension project.
- New facility will enhance Ireland's global position in biopharma manufacturing and help attract new high value jobs in the new area of advanced therapeutics, which includes cell, gene and oligonucleotide-cased therapies and other novel therapeutic and vaccine modalities.
- Tánaiste Micheál Martin TD will officially launched NIBRT's new state-of-the-art advanced therapies research and training facility.

The National Institute for Bioprocessing Research and Training (NIBRT) today officially launched a new advanced therapies facility. This expansion will increase NIBRT's capacity and capability to conduct manufacturing-focused research and training in advanced therapeutics. Advanced therapeutics is a broad category of innovative biological medicines that includes cell therapies, gene therapies, mRNA and DNA-based therapies and other novel biologic-based medicines and vaccines.

Tánaiste Micheál Martin attended today's opening at NIBRT's facility in Dublin. The new facility will accommodate around twenty-five new researchers and training staff and will serve new and existing NIBRT clients by providing research solutions to manufacturing challenges and training in the production of these highly innovative and complex medicines.

This $\notin 21$ million project is supported by the Irish Government through IDA Ireland and incorporates 1,800 m2 of new space, including seven research laboratories and state of the art training suites, into the existing NIBRT facility that will be dedicated to advanced therapeutics. The facility also houses a $\notin 6.5M$ SFI/IDA co-funded research facility called CONCEPT, which is dedicated to the early-stage development of biologic therapies.

Tánaiste, Minister for Foreign Affairs and Minister for Defence, Micheál Martin TD said "This new Advanced Therapeutics manufacturing research and training facility, funded by the Irish Government, will further Ireland's reputation as a global leader in biopharma manufacturing. It is important to continuously invest in this evolving area so that Ireland's biopharma sector, with its highly skilled workforce, remains attractive to investors in this complex and innovative area of life saving medicines."

Speaking at today's announcement, **NIBRT CEO Darrin Morrissey** commented "The role of NIBRT is to help the growth and development of the biopharma manufacturing sector in Ireland by providing cutting edge training and research solutions. NIBRT intends to further enhance our current capability by becoming a leader in the pioneering and fast-evolving area of advanced therapies and vaccines. It is an immensely exciting time for NIBRT. With this expansion, we expect to deliver training for many more potential and newly-hired biopharma staff, as well as considerable growth in our research activities. This has the potential to rapidly enhance Ireland's standing as a location of choice for advanced therapy and vaccine manufacturing."

The Irish biopharma industry continues to go from strength-to-strength, with over twenty new biologics manufacturing facilities developed across Ireland over the last decade and in excess of €12 billion in capital investment over that time. More than 45,000 people are now employed directly in the biopharma industry, and this represents a doubling of employment in high-expertise and high-value biopharma roles since 2014.

Advanced therapeutics, also known as Advanced Therapy Medicinal Products (ATMPs), treat diseases at molecular level and represent a potential step-change in the personalisation of treatment and in the treatment outcomes. For example, cell therapy is a medical approach that aims to introduce new, healthy cells into a patient's body to replace diseased or missing ones. While gene therapy treats or prevents disease by correcting the underlying genetic problem that causes the disease. Delivering these treatments to patients has the potential to offer tremendous therapeutic benefits, in some cases even a cure, in previously intractable illnesses like cancer, diabetes and neurological conditions. However, the manufacture of these highly sophisticated therapies is highly complex and producing them in a cost-effective and safe way presents unique challenges.

The extension opening coincides with two other high-profile events at NIBRT this week. One highlight is the NIBRT Research Conference 'Medicines of the Future 2024' taking place on Friday 24th May. The event will feature an esteemed lineup of speakers, among them Dame Professor Sarah Gilbert from Oxford University, who led the team responsible for developing one of the vaccines that were pivotal in the global fight against the COVID-19 pandemic.

Simultaneously, NIBRT is hosting the Global Partner Summit. This annual two-day event brings together current and prospective members of the NIBRT Global Partner Training Programme. This NIBRT-led international alliance draws together training and education organisations from around the world including Canada, South Korea, USA and Senegal. The programme addresses the global shortage of skilled biopharma professionals by licensing NIBRT's expertise, qualified organisations utilise biopharma training and education curriculum that has been created in Ireland by NIBRT to build biopharma capabilities in their regions. For more information on the NIBRT Global Partner Programme click <u>here.</u>

Michael Lohan, CEO IDA Ireland said: "Ireland's thriving biopharma sector, coupled with its abundant talent pool and dynamic business ecosystem, underscores our appeal as a premier destination for this investment. Congratulations to NIBRT on the opening of their new facility, which further strengthens Ireland's position as a global leader in biopharmaceutical innovation."

More information on NIBRT's advanced therapeutic-related services and programmes can be located **<u>here.</u>**

PCI Pharma Services to build new packaging facility

19 June 2024



McGarrell Reilly has announced that PCI Pharma Services, a leading pharmaceutical contract development and manufacturing organization (CDMO), has signed a 25-year lease agreement and will construct a new industrial facility at CityNorth Business Campus in Stamullen, Co. Meath. With direct access to the M1 motorway, the conveniently located development, offers state-of-the-art facilities, making it an ideal choice for PCI's continued growth in the region.

For PCI, the forthcoming facility will provide 82,000 sq ft of additional production and services space alongside its existing 45,000-sq-ft facility. Per PCI's commitment to bolstering eco-friendliness, the spacious new plant will offer high sustainability credentials including a targeted LEED Gold certification, A3 BER, and rainwater harvesting. The building will be completed in Q1 2025, with PCI then undertaking an extensive fit out for commercial pharmaceutical packaging operations, one of its key business segments.

PCI supports the development, manufacturing, and packaging of critical medicines across the drug product lifecycle, from early phase clinical trials through product launch and commercial market supply. The company's facilities in Ireland provide comprehensive packaging solutions for oral solid dose (tablets and capsules) and sterile injectable dosage forms. The new plant will leverage the assets at PCI's existing CityNorth facility, combining technology with personnel expertise to help its biopharma clients achieve quality manufacturing and speed to market for life-changing medicines.

CityNorth Business Campus opened in 2006 with a variety of high quality commercial business sites positioned around the state-of-the-art 4-star CityNorth Hotel, which provides excellent amenities for both business and leisure. The campus is situated on the M1 motorway at junction 7 offering occupier's access to the Port Tunnel/M50 network within 15 minutes, and Belfast City Centre within 90 minutes. Occupiers of the Business Campus include Circle K service station and a range of commercial businesses.

McGarrell Reilly has recently secured full planning permission for further units within the campus ranging from 60,000 to 100,000 sq ft. Further tailored design and build solutions are available on a To Let/For Sale basis with a range of flexible options to cater to an array of potential occupiers.

"We are delighted to welcome PCI's further expansion in the campus," said Sean Reilly, Founder of

McGarrell Reilly. "Their decision to locate here and substantially grow their operations is a great endorsement of CityNorth Business Campus. We are confident that PCI will continue to thrive in this exceptional campus environment and that CityNorth will continue to attract further high-profile tenants."

"This strategic expansion of our commercial packaging operations is an investment that will provide growth in this key area close to Dublin over the next 3-5 years," said James McDermott, General Manager, PCI Pharma Services, Ireland. "The enhanced capabilities and capacity at the PCI CityNorth campus will ensure that we remain the go-to CDMO for innovative commercial packaging technology solutions for pharmaceutical product launches and ongoing market supply. We look forward to working with our long-term contractor partners and seeing the site develop over the coming months to help us meet our growing client demands."

Global Head of Life Sciences at IDA Ireland Rachel Shelly said: "This expansion by PCI, a provider of sterile and high potent drug development, clinician trial services and commercial packaging for the pharma and biopharma sectors, is excellent news for county Meath and indeed the entire mid-east region. PCI is an established member of the region's growing life science cluster, and this latest announcement reinforces their commitment to Ireland. I wish the team continued success as they grow their operations here."

Brendan Smyth of Cushman and Wakefield, who represented McGarrell Reilly on the letting, has said "CityNorth is one of the few remaining locations which has the ability to provide large scale development just off a motorway interchange. A number of occupiers are currently in discussions around both pre lettings and forward purchases."

Background on McGarrell Reilly Group

McGarrell Reilly Group is a privately owned family property group that has created some of the highest quality developments in Ireland and abroad. The group prides itself on the quality of their portfolio and the focus on customer. Successfully operating for over 43 years, the group's expertise is in delivering best in-class large integrated master planned developments across large scale commercial, industrial, office, retail and new homes in Ireland and Germany. McGarrell Reilly's areas of expertise in specialist property development includes building communities of new homes and large-scale commercial investments which are and have been home to many of the world's largest corporates including Amazon, Perrigo, AirBnB, Cisco, Oracle, State Street, Pfizer, Marsh, Mercer, OPW and the Central Bank of Ireland.

Background on PCI Pharma Services

About PCI Pharma Services

PCI is a world leading CDMO, providing clients with integrated end-to-end drug development, manufacturing and packaging capabilities that increase their products' speed to market and opportunities for commercial success. PCI brings the proven experience that comes with more than 90 successful product launches each year and over five decades in the healthcare services business. The company currently has 30 sites across seven countries (Australia, Canada, U.S., Ireland, Wales, Germany and Spain), and over 7,000 employees working to bring life-changing therapies to patients.

Leading technology and continued investment enable PCI Pharma Services to address global drug development needs throughout the entire product life cycle – from manufacturing capabilities through the clinical trial supply chain and commercialization. Its clients utilize PCI as an extension of their business, and a collaborative partner with the shared goal of improving patients' lives. For more information, visit_pci.com.





https://enterprise-ireland.com/en

Enterprise Ireland Updates & Reports

Eleven Start-ups Selected for University College Dublin's New AI Accelerator Programme

The eleven (11) start-ups selected to participate in University College Dublin's (UCD) new AI Ecosystem Accelerator programme were announced today. The focus of this new accelerator programme is to support entrepreneurs who are developing disruptive AI (artificial intelligence) solutions for a global market.

The participating start-ups are; ALPACA, Customs Window, Durotimi AI, Frontier AI, GoMappED, KnowCarbon, La Casa Care, SonnyLabs.ai, Tashka Technology Solutions, VoxMed.AI and wrksense. (See profiles below).

The 6-month AI Ecosystem Accelerator programme, beginning today, will be delivered by NovaUCD, the hub of innovation and start-up activities at UCD, in partnership with CeADAR, Ireland's National Centre for Applied AI.

The programme is funded through the European Digital Innovation Hubs (EDIH) framework, a Europe-wide initiative with funding of €700 million from both the European Commission and the Governments of member states. The Department of Enterprise, Trade and Employment, through Enterprise Ireland, is leading on the EDIH programme for Ireland and CeADAR has been designated as the European Digital Innovation Hub for AI in Ireland.

Speaking at NovaUCD, Dara Calleary TD, Minister of State for Trade Promotion, Digital and Company Regulation, said, "I am delighted to be at University College Dublin for the launch of the inaugural AI Ecosystem Accelerator Programme. Meeting with the entrepreneurs taking part in this exciting programme I am pleased to see that in keeping with 'AI- Here For Good', the Government's national AI strategy, the participating start-ups are focused on using AI to benefit citizens and the way we live and work.

The dedicated supports and mentoring which will now be provided by NovaUCD and CeADAR during the coming months will help the start-ups to accelerate their growth and development in Ireland, and also on the international stage, and I wish them every success.

I am delighted that the funding for this important accelerator programme has been received via European Digital Innovation Hubs as the Department of Enterprise, Trade and Employment, through Enterprise Ireland, is leading on the EDIH programme for Ireland. "

Targeted supports for the 11 participating start-ups over the next 6-months include a dedicated commercial mentor and workshops on value proposition, route to market, sales strategies, and securing investment.

Participants will have access to co-working space at NovaUCD and access to the NovaUCD community of founders, investors, business partners and student interns. They will also have access to CeADAR's EDIH for AI services which include AI technologies, and research expertise with technical mentorship.

Professor Kate Robson Brown, UCD Vice-President for Research, Innovation and Impact

said, "The Government's ambition is that Ireland becomes a leading country in using AI for the benefit of people. Through this new AI Ecosystem Accelerator programme starting today UCD is supporting a dynamic cohort of Irish start-ups and entrepreneurs who are focused on using AI technologies to deliver a range of disruptive products and services, for the benefit of society, not only here in Ireland, but on a global stage."

She added, "There was a great demand from start-ups across Ireland to take part in the programme which will be delivered by NovaUCD and CeADAR, and I would like to take this opportunity to congratulate the 11 selected start-ups. I am looking forward to attending the showcase event at the end of the programme to learn more about how the participants have accelerated their start-ups to the next level and to find out more about their global ambitions."

Emma Callinan, Director of Commercialisation, Enterprise Ireland, said, *"The AI Ecosystem Accelerator programme will provide entrepreneurs across sectors including Healthcare,*"

Cybersecurity, Education, and Sustainability with the opportunity to advance their AI start-ups through a range of targeted technical and commercial supports. Enterprise Ireland is delighted to welcome the 11 start-ups into the ecosystem of successful AI entrepreneurs, and we look forward to supporting them on their transformative journeys as they develop disruptive AI solutions with a global impact."

Since opening in 2003 NovaUCD has developed a strong track record and has supported 550+ startups and early-stage ventures through the services it provides, and through business support programmes run and managed by NovaUCD. In addition, the NovaUCD entrepreneurial community has now raised €1.3+ billion in equity funding.

CeADAR's mission is to help industry in Ireland adopt AI as the National Centre and the European Digital Innovation Hub in AI for Ireland. The Centre has been awarded a multi-million-euro project as part of the EDIH programme to support start-ups, enterprises (with under 3,000 employees) and public sector organisation from all over Ireland who are at the early stage of their AI journey or just curious to find out how using data can benefit their business.

Among the mentors who will be working with participants during the programme are; serial entrepreneur, Niamh Sterling; Aidan Finn, Binarii Labs; Mitchell O'Gorman, xWave Technologies; Lucinda Kelly; Tara Looney, both start-up advisors; and Ronan Murphy, Smarttech247 and GetVisibility.

The 6-month AI Ecosystem Accelerator programme will end with a showcase event to be held in October.

ENDS

For further information contact Micéal Whelan, Communications and Media Relations Manager, UCD Research and Innovation, NovaUCD, e: <u>miceal.whelan@ucd.ie</u>

Editors Notes

Profiles of the start-ups participating in the inaugural AI Ecosystem Accelerator Programme; **ALPACA** is on a mission to change the wait to fail education system by making the invisible, visible early in young learners. Employing AI and data modelling, ALPACA's gamified assessment instruments proactively identify infants at risk of reading challenges before they can read print, enabling timely and appropriate educational responses. The founders of ALPACA, a Trinity College Dublin spin-out, are Joe Fernandez and Dr Colm Fallon. <u>https://www.alpaca-assessment.com/</u>

Customs Window is using advanced process automation and AI to simplify and manage the data set required by companies for EU customs declarations. The company provides an integrated platform and open API to simplify the customs declaration creation and submission process while ensuring effective data management and reporting for compliance and risk management. The founders of Customs Window are Brian Murphy and Johnny Dunne. <u>https://www.customswindow.com/</u>

Durotimi AI is on a mission to minimise the risk of delay and errors in cancer diagnosis. By using AI and deep learning, the company's SaaS-based platform gives GPs the ability to concurrently check combinations of signs, symptoms and risk factors, in an intuitive format, to improve the early detection of cancer. The founder of Durotimi AI is Doyin Bademosi. <u>https://www.durotimi.com/</u>

Frontier AI is developing an AI-powered workforce augmentation platform. The founder of Frontier AI is Howard Kingston. <u>https://frontieracademy.ai/</u>

GoMappED provides high-quality, affordable online English courses to students around the globe through an innovative virtual classroom platform - Kells Class. Its integrated system enhances the learning experience with learning performance analysis, personalised study plan and simplifies course management through automated processes. The co-founders of GoMappED are, Yuxin Wang, Pat Hamilton, Joseph O'Donoghue and Wenen Wang. <u>https://gomapped.com/home</u>

Businesses require product carbon footprint emissions data for reporting, internal strategy, competitive benchmarking, and consumer communication. **KnowCarbon** has built a platform using AI to calculate product carbon footprints with fewer data points, enabling businesses to pinpoint and reduce emissions. The founder of KnowCarbon is Eamonn Galvin. <u>https://knowcarbon.com/</u>

La Casa Care delivers technology solutions to care providers to support the needs of patients with clinical needs, and older people to live independently at home. Its technology uses AI to personalise and improve care with preventative interventions that complement existing integrated care pathways. The founder of La Casa Care, a University College Dublin spin-out, is Richard Cooke. https://www.lacasa.care/

SonnyLabs.ai is an advanced AI security product designed to ensure trust and safety in AI applications. The platform specialises in detecting threats to Generative AI apps, including prompt injections, sensitive information leaks, and toxic outputs. Recognising the unique vulnerabilities inherent to AI systems, SonnyLabs.ai leverages its highly efficient, privacy-first AI engine to identify and block these risks in real-time. The founders of SonnyLabs.ai are Liana-Anca Tomescu and Paddy O'Conbhui. <u>https://sonnylabs.ai/</u>

Tashka Technology Solutions is building Medstar a digital healthcare infrastructure and autonomous medical coding platform. Medical coding, used in over 100 countries, is the process of transforming healthcare diagnoses, procedures, and clinical charts into universal medical alphanumeric codes. The Medstar platform automates medical coding through Natural Language Processing and AI by analyzing, organizing, and mapping medical records to the appropriate codes, e.g. CPT, ICD-10, HCPCS. The founders of Tashka Technology Solutions are Dr Sandhya Chalasani and Vikas Jain. <u>https://medstarhis.com/</u>

VoxMed.AI is an AI-driven communications platform that uses a medical Large Language Model (LLM) along with advanced Retrieval Augmented Generation (RAG) technology to help clinical staff deliver information and support to patients. The founders of VoxMed.AI are <u>Gavin O'Duffy and Dr</u> <u>Jeff O'Sullivan</u>.

wrksense is developing a cutting-edge AI and automation platform designed to enhance the way recruitment agencies connect their candidates with clients. The founders of wrksense are Andrew Connolly and Ruaidhri McDonnell. https://www.wrksense.com/

For further information about the AI Ecosystem

Accelerator visit <u>www.ucd.ie/innovation/aiecosystem/</u>

For further information about NovaUCD visit www.novaucd.ie

For further information about **CeADAR – Ireland's National Centre for Applied AI** visit <u>www.ceadar.ie</u>

For further information about **CeADAR's European Digital Innovation Hub** for AI visit <u>www.ceadar.ie/edih</u>

For further information about the **European Digital Innovation Hubs** (EDIHs) visit <u>https://digital-strategy.ec.europa.eu/en/activities/edihs</u>

https://enterprise.gov.ie/en/what-we-do/innovation-research-development/european-digital-innovationhubs/

UCD spin-out LaNua Medical wins Big Ideas Award at Enterprise Ireland's Start-Up Day 2024

15 May 2024



(Pictured 1-r) Dr Cormac Farrelly, Chief Medical Officer, LaNua Medical is presented with the Enterprise Ireland Big Idea's award by Minister for Enterprise, Trade and Employment Peter Burke TD.

Dr. Cormac Farrelly of UCD spin-out LaNua Medical, was presented with the Big Idea's Award by Minister for Enterprise, Trade and Employment Peter Burke at Enterprise Ireland's Start-Up Day 2024 in Dublin Castle.

LaNua Medical was one of 10 investor-ready potential spin-outs that had three minutes to pitch their new technology solutions to a 600 strong audience made up of representatives from the Irish Start-up ecosystem including VCs and other funders, State support agencies & professional and financial services.

The award was presented to Dr. Cormac Farrelly, for the outstanding pitch of the day. LaNua Medical which is an Enterprise Ireland commercialisation funded project approaching spin-out, is developing solutions for problems in embolization, a minimally-invasive procedure that can be used to treat internal bleeding or cause tumour-necrosis. Its *GateKeeper* device blocks blood flow to select tissue, while enabling targeted therapeutic delivery with reduced risk of side effects.

As part of the Big Ideas award, LaNua Medical will now go on represent Ireland at the Pegasus Start-Up World Cup in San Francisco later in the year.

Cristina Purtill of Plio Surgical received the Big Ideas runner-up award on the day and will also travel to San Francisco to attend the Start-Up World Cup.

Presiding over the awards, **Minister for Enterprise, Trade and Employment Peter Burke TD** said, "I would like to congratulate LaNua Medical, a worthy winner of today's Big ideas award and I have no doubt will go on to make Ireland proud at the International Start-Up World Cup in the US. Enterprise Ireland's Start-Up Day offers an exciting snapshot of the future, showcasing investorready start-ups with disruptive technologies that will change our world for the better, as well as providing opportunities for keen investors."

Start-Up Day 2024 hosted the 'Class of 2023' High Potential Start-Up companies that Enterprise Ireland invested in during 2023. The event also played host to technology-based companies with origins deep rooted in ground breaking research. In 2023, 24 companies were spun out of third level institutions, 16 of which were supported through the Enterprise Ireland Commercialisation Fund Programme.

Minister Burke continued, "Supporting the commercialisation of research allows us to develop the next generation of innovative High Potential Start-Ups (HPSUs) and last year, 12 HPSUs were successfully generated in partnership with our third level institutions. The government through Enterprise Ireland is committed to supporting the innovative work that is being done in our academic institutions and we look forward to working with these spin-out companies to help them grow and scale."

Leo Clancy, CEO, Enterprise Ireland said, "The Big Ideas pitching element and awards at Start-Up Day provides a platform to showcase Enterprise Ireland's commercialisation funded research approaching start-up status, with significant potential for success. The event also highlights the accomplishments of our national technology transfer system, the high calibre of research commercialisation activity within Ireland, and the significant impact these companies will have to help solve huge global challenges. I wish to congratulate LaNua Medical on their achievements to date and wish them every success at the Start-Up World Cup and beyond."



Home of Guinness to accelerate to net zero carbon goal with planned €100 million investment by Diageo at St James's Gate

16 May 2024



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Plan will transform both energy and water use at the 264-year-old brewery - aiming to be one of the most efficient breweries in the world

- Project targeting an improvement in water use efficiency and a reduction in the water used to brew Guinness by 30%
- Taoiseach Simon Harris acknowledges Diageo for leading the way for industry on decarbonisation

Diageo has today announced plans to invest over €100 million to decarbonise its historic St. James's Gate site in Dublin 8, where Guinness has been brewed for 264 years. The investment underpins the goal to accelerate to net zero carbon emissions for the site and will transform energy and water consumption with the aim to make it one of the most efficient breweries in the world by 2030. The investment was announced at St. James's Gate by Diageo's Global CEO, Debra Crew, this morning, where she was joined by the Taoiseach, Simon Harris TD, Minister for Enterprise, Trade and

IRISH CHEMICAL NEWS ISSUE NO.3 JULY 2024

Employment, Peter Burke, and the CEO of Enterprise Ireland, Leo Clancy, who are providing Government-backed support for the decarbonisation project.

Today's investment announcement will enable St. James's Gate to entirely phase out the use of fossil fuels in its direct brewing operations and reduce Scope 1+2 GHG emissions generated by the site by more than 90%, in line with the Science Based Target initiative's definition of net zero.

By 2030, the site's renewable energy strategy will combine the use of grid-supplied electrical power heat pumps; and biogas generated within a new water recovery facility. This facility will also improve water use efficiency and enable a projected reduction in the water used to brew a p Guinness by 30%.

Taoiseach Simon Harris welcomed the leadership Diageo was demonstrating for industry on decarbonising its operations and being at the forefront of sustainable business, commenting:

"Industry is a key pillar of national and global efforts to address climate change, and it is welcome and important that Diageo is showing leadership by decarbonising its operations here in its home city. Guinness has been made in Dublin for over a quarter of a millennium, and today so many tourists visit the location while they are here. It's not just a green transformation for St. James's Gate but a flagship transformation that will send a strong message to the world. It also demonstrates the Government's commitment to businesses, big and small, to make the green transition, and to work in partnership to help achieve our climate goals."

Diageo's Global Chief Executive Officer, Debra Crew, commented, "I want to thank the Taoiseach and Minister Burke for their support for our ambitious decarbonisation plan for St. James's Gate as demonstrated by the support from our partners Enterprise Ireland.

"St. James's Gate is an historic location for an iconic brand. We're 260 years into our 9,000-year lease at St. James's Gate and this investment will ensure that Guinness has an exciting and long-term sustainable future. We are proud to lead the way on decarbonisation, both as a major Irish business and as an industry-leading company."

Minster for Enterprise, Trade and Employment, Peter Burke said, "Diageo's investment into decarbonising St. James's Gate sets a powerful example for businesses transitioning to sustainability. This investment not only reduces carbon emissions but also fosters innovation, job creation, and long-term economic stability. Diageo's leadership here underscores the idea that sustainable practices are not just ethically sound but also economically savvy, paving the way for a future where economic progress aligns with environmental responsibility."

Leo Clancy, CEO of Enterprise Ireland commented, "Diageo's investment into decarbonising its operations at St. James's Gate is a landmark project in Ireland's decarbonisation landscape. Enterprise Ireland is committed to supporting businesses in the transition towards a low-carbon economy while capitalising on the new market opportunities that decarbonisation presents and creating jobs. It is fantastic to see Diageo's continued investment in the highest sustainability standards in Ireland and we look forward to continuing our long-term partnership with Diageo as it embarks on this industry-leading work."

This plan is the latest move by Guinness towards futureproofing its business, with the company longsince known for its pioneering employment offering of free health care, pension, paid holidays, and free meals to employees for over 200 years.

Diageo is taking action across its operations globally and in Ireland to reduce its carbon emissions in line with its 10-year ESG action plan, Society 2030: Spirit of Progress. Diageo is working towards significant science-based action to create a sustainable low carbon future. Today's announcement represents the next step in an integrated approach towards that by becoming net zero in its direct operations.

Diageo is preparing a planning application for this decarbonisation project that will be submitted to Dublin City Council later this year and will be engaging with industry experts, local communities and representatives prior to submitting the application.

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For further information contact Enterprise Ireland Press Office

Minister Emer Higgins visits Airmid Health group's worldleading research facilities in Citywest, Dublin

28 June 2024



Pictured (l-r) CEO of Enterprise Ireland, Leo Clancy, Mayor South Dublin County Councillor Baby Pereppadan, Oliver Dsa, Senior Scientific Officer, Minister of State for Business, Employment and Retail, Emer Higgins TD, Dr John Ryan, CEO of Airmid Healthgroup, Paula Jaramillo, Senior Scientific Officer

Minister of State for Business, Employment and Retail Emer Higgins today visited the world-leading research facilities of Airmid Healthgroup in Citywest, Dublin, celebrating the recent relaunch of its new state-of-the-art allergen, microbiological and virus laboratories and environmental testing chambers.

Minister Higgins was accompanied on the site visit by Enterprise Ireland CEO Leo Clancy, underscoring the strategic importance of Airmid Healthgroup's innovative work and its significant contributions to the industry.

Airmid Healthgroup is dedicated to transforming indoor air quality and supporting the safe production of effective environmental air quality solutions globally. The company plays a crucial role in aiding world-leading manufacturers such as Alstom, Dyson, and Novaerus to develop, innovate, audit, and differentiate their products, especially for individuals with respiratory and pulmonary conditions.

The recent relocation of Airmid Healthgroup to Citywest, Dublin, and the opening of its new laboratory facilities mark a significant milestone for the company. This move not only enhances Airmid Healthgroup's capacity for cutting-edge research and development but also demonstrates its commitment to expanding its global impact. The company plans to create more jobs in Ireland, reinforcing its dedication to scientific innovation and collaboration with Enterprise Ireland.

Minister of State for Business, Employment and Retail Emer Higgins commented: "I am delighted to support Airmid Healthgroup in relaunching its new suite of state-of-the-art facilities. Indoor air quality is an important factor in public health outcomes, largely because air-borne allergens, toxins and pollutants are not visible to the eye. These can significantly impact an individual's quality of life, and existing health conditions. Airmid Healthgroup is an example of a company providing life-improving technology that supports Ireland's broader commitment to R&D and scientific innovation."
CEO of Enterprise Ireland Leo Clancy said: "Airmid Healthgroup is bringing innovation and adaptability to the critical area of indoor air quality across homes and workplaces. Enterprise Ireland is proud to support the company on its scaling journey and I'd like to congratulate the team on the opening of the state-of-the-art laboratories and environmental testing facilities here in Citywest. This company has gone from strength-to-strength, establishing a strong presence in international markets, creating and sustaining high quality jobs here in Ireland, while continuing to invest in innovation. Enterprise Ireland looks forward to continuing to work with the company on their growth trajectory, improving the outcomes for so many suffering with respiratory health issues right across the globe."

Dr John Ryan, Chairman of Airmid Healthgroup commented: "We are very proud to host Minister Higgins and Enterprise Ireland CEO Leo Clancy at our world-leading facilities. This recognition signals support and trust in our vision of the future, in which every home and workplace globally is equipped with solutions that ensure the highest standards of indoor air quality, safeguarding health and well-being for all people. Through testing the capability and efficiency of air and surface cleaners, purifiers, ventilation systems, and other innovative respiratory health-oriented technologies, we provide crucial work in service of addressing public health challenges related to respiratory health such as high asthma rates, which in Ireland, is nearly 30% above the EU average."

Airmid Healthgroup is part of the iAIR Group, whose founders are committed to establishing exportled businesses headquartered in Ireland that invest heavily in research and development while creating local employment opportunities. Recently, the iAIR Group became the first Irish entity to sign the International WELL Building Institute's Healthy Building Accord. They are also active members of the EU's 'Breathe Healthy Air Together' Project, aimed at comprehensively investigating urban indoor air quality, and are an approved provider for the US Government's Building Resilient Environments for Air and Total Health (BREATHE) program. Central to their mission is developing intellectual property in Ireland to enhance organisational value, thereby showcasing Irish scientific excellence to a global audience.

Construction commences on Ireland's first purpose-built carbon neutral brewery in Kildare

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2 July 2024



Pictured (l-r) Colin O'Brien, Category Head, Global Beer Supply at Diageo; Jenny Melia, Executive Director of Enterprise Ireland and Minister of State for Agriculture and TD for Kildare South, Martin Heydon at the Diageo sod turning event

Sod turned on new state-of-the-art €200 million brewery that will brew Diageo's lagers and ales The sod has been turned on Diageo's new €200 million state-of-the-art carbon neutral brewery in Littleconnell, Newbridge, Co. Kildare. The new facility will brew lagers and ales including Rockshore, Harp, Hop House 13, Smithwick's, Kilkenny and Carlsberg. With a capacity of 2 million hectolitres, it will be the second largest brewing operation in Ireland after St. James's Gate and support the future growth of Diageo Ireland's beer brands.

The state-of-the-art brewery will be powered with 100% renewable energy and will harness the latest process technology to minimise overall energy and water consumption. The target date for the brewery to begin production is 2026 and it will facilitate the growth of overall beer exports from Ireland. It will also facilitate enhanced capacity for the production of the fast-growing Guinness 0.0 at the traditional home of Guinness at St James's Gate in Dublin.

The Minister of State for Agriculture and TD for Kildare South, Martin Heydon, joined senior leaders for the turning of the sod event in Littleconnell, to express the Government's full support for the brewery that will support up to 1000 jobs both onsite and offsite during the construction phase of the brewery. The new brewery has also received crucial support from the IDA and Enterprise Ireland. **Colin O'Brien, Category Head – Global Beer Supply, Diageo said**, *"Following the announcement of our plans to construct this new brewery in 2022, we are delighted to have reached this significant landmark through the beginning of construction works. As a global business this new brewery is a major development for Diageo in Ireland and around the world. It helps us continue to produce some of the world's most recognisable beer brands and sets new standards for sustainable production in keeping with our 'Society 2030: Spirit of Progress' commitments to become net-zero in our direct operations''*

"I want to thank the Government, the IDA, Enterprise Ireland, and the local community for the support they have given the new brewery to date, and I look forward to the first lagers and ales being produced here in two years' time."

Minister of State for Agriculture and TD for Kildare South, Martin Heydon, said: "*This* \notin 200*m investment by Diageo is hugely important and is great news for Ireland's food and drink industry and also for the local economy and community here in Kildare. I want to thank Diageo for their commitment to the local area and for the jobs and activity that this new brewery will generate.*"

Jenny Melia, Executive Director, Enterprise Ireland, added: "Enterprise Ireland is committed to supporting companies in the transition towards a low-carbon economy, and we are delighted to work with Diageo on this important development; a state-of-the-art carbon neutral brewery, that will be powered by 100% renewable energy. Diageo continues to show leadership in investing in the highest sustainability standards, and this new brewery will make an important contribution to the local economy, supporting value added exports, creating high quality jobs."

Sonya Kavanagh, Chief Executive of Kildare County Council said "Kildare County Council is delighted that construction work and the development of this new brewery in Littleconnell is now underway. The County Council has worked closely with Diageo on this project that will provide employment for and investment in the local community in Newbridge and throughout Kildare. It is a real vote of confidence for the entire county to have such a major company that produces iconic brands locating a brand-new facility here in Kildare."

182

Minister Burke Announces €400k in Enterprise Ireland Start-Up Funding to Binarii Labs as Company Plans to Create Over 100 New Jobs

5 July 2024



Peter Burke TD, Minister for Enterprise, Trade and Employment today announced that Binarii Labs, a data security solution developer, has secured an investment of €400,000 from Enterprise Ireland in High Potential Start-Up (HPSU) match funding, bringing to €3 million the total raised by the company to date.

The company, which was founded in 2021, has also announced that it plans to create over 100 new jobs in Ireland by 2027, and has already created over 20 new roles in recent months. The new jobs will include roles in specialist deep tech research and development, data security, tech and customer support, marketing and business development.

With the funding raised to date and the planned new jobs, Binarii Labs, headquartered at NovaUCD in Dublin, is focused on growing the international market for BinariiDSP, the company's proprietary and patented data security platform.

Speaking at today's announcement at NovaUCD, Peter Burke TD, Minister for Enterprise, Trade and Employment said,

"I want to commend the team at Binarii Labs on its recent successful funding round. I know that Binarii Labs has significant growth plans to enhance its impressive offering and scale its talented team. Data security is at the top of businesses' agendas here in Ireland and further afield and Binarii Labs is providing tangible solutions to enable enterprises to securely store and share their data."

BinariiDSP enables enterprises of any size, to protect, own and control their data and stakeholders' data. It enables any enterprise to securely store and share their data whereby they retain sovereign ownership through 100% ownership and control instead of having to trust it to a third-party data storage provider.

The company's research and development activity encompasses a wide range of deep tech areas such as Blockchain, Distributed Ledger Technology, and Artificial Intelligence to deliver secure, trustworthy data protection solution to any type of internet user, enterprise or individual.

Binarii Labs is focused on developing innovative, proprietary solutions in data security, and the funding secured to date will enable the Binarii Labs team to continue to be heavily engaged in further R&D and new markets development, as it globally commercialises its proprietary solutions.

Binarii Labs which was founded by founded by Steven Garner, Nigel Carter, Aidan Finn and Ciarán McNamee, was originally headquartered in Co. Kildare with the support of the Local Enterprise Office.

Aidan Finn, CEO and co-founder, Binarii Labs said,

"We are delighted to have secured funding from Enterprise Ireland, which along with funding raised from EIT Digital, angels and an oversubscribed Spark Crowdfunding campaign, is allowing us to announce significant jobs creation plans over the next few years as part of our international market growth strategy.

"Our mission is to enable enterprises, especially SMEs to take back 100% control, ownership and secure custody of all of their own and their stakeholders' data, whilst providing unrivalled and indisputable transparency around any data securing and secure data sharing actions such that no trust is ultimately required on anyone's side."

He added, "We aspire to become a global leader in enabling data security, privacy, and sovereignty through providing a cost effective and fair means of charging based on volume of use and seeing BinariiDSP become the "go to" solution for any business to seamlessly integrate, so much so that their users would not even know."

Donnchadh Cullinan, Head of ICT HPSU at Enterprise Ireland said:

"At Enterprise Ireland we are acutely aware of the cyber security challenges that face the global business world and have been proud to support Binarii Labs on their scaling journey. The company has made great progress in a short space of time to develop innovative proprietary solutions in data security. We are delighted to support Binarii Labs with \notin 400,000 in HPSU funding which will help the company to deliver accelerated growth across global markets, support key R&D initiatives, and create more than 100 new jobs."

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Ireland Joins European Alliance of Startup Nations

24 July 2024

Minister for Enterprise Trade and Employment, Peter Burke TD, today welcomed the announcement that Ireland has become the latest member of the Europe Startup Nations Alliance (ESNA), an organisation established to enhance the European startup ecosystem. Enterprise Ireland has been nominated to represent Ireland at ESNA and will receive policy support from the Department of Enterprise, Trade and Employment.

Minister Burke TD said: "Joining ESNA is a signal of Ireland's commitment to helping our businesses to start and grow in a supportive ecosystem. ESNA provides us with opportunities to collaborate, share our experiences and to learn about best practices from other members. Enterprise Ireland brings a wealth of knowledge and experience to ESNA and with policy support and advice from my Department, Ireland will be aiming to further improve our implementation of the Startup Nation Standards."

ESNA is a collaborative entity, dedicated to developing and implementing policies that support startups across Europe. The alliance is committed to creating favourable conditions for startups at all stages of their lifecycle, significantly contributing to the EU's global competitiveness.

Earlier this week, Minister Burke published a report on *The Use of Finance as a Catalyst to Develop a Scaling Ecosystem*. Implementation of the recommendations of the report will increase scale up activity in the Irish funding ecosystem by improving access to appropriate finance.

Minister Burke TD added: "Initiatives like joining ESNA, or exploring ways to better finance our scaling ecosystem or launching our National Enterprise Hub ensure that the business community in

IRISH CHEMICAL NEWS ISSUE NO.3 JULY 2024

Ireland knows it has the full support of Government to help it in every way possible to continue to thrive and prosper"

Leo Clancy, CEO, Enterprise Ireland, said: "Enterprise Ireland is extremely proud to be representing Ireland in ESNA, making Ireland the 19th European country to formally join this Alliance. Enterprise Ireland is committed to working with the Irish government to support Irish companies to start, grow and scale, and to achieve their global ambition. Collaboration is a hugely important element of this, and with Ireland being a member of ESNA we are part of a group that will work together on best practise policies which will support the development of companies and exports across Europe."

Arthur Jordão, Executive Director of ESNA said: "Ireland brings extensive experience in innovative entrepreneurial policies. With Enterprise Ireland now representing Ireland in ESNA, we can build on collaborative efforts together with other members to significantly advance startup-friendly policies across Europe. We are confident Ireland will bring a very unique perspective to the table, supporting the economic resilience of the continent and positioning Europe as a leader in the global startup ecosystem".

ESNA's efforts align with Irish and broader EU objectives to enhance competitiveness, address structural challenges. The expansion of ESNA represents a step forward in addressing these challenges and leveraging the collective strength of the EU's member states.



Become more innovative

Drive growth with research and innovation

Irish enterprises are competing in a rapidly changing world and are increasingly focusing on research and innovation to help improve productivity and build sustainable growth. Enterprise Ireland supports companies on their Research and Innovation journey to future-proof their business.



Discover how we can help

Enterprise Ireland offers two types of research and innovation support depending on your business goals and needs. We help your business to grow in-house research skills, and we also facilitate collaboration between ambitious businesses and Ireland's research and innovation ecosystem.

- <u>1 Build in-house research and innovation skills</u>
- <u>2 Engage with the research and innovation ecosystem</u>

https://www.enterprise-ireland.com/en/supports/become-more-innovative