



A Journal of the Institute of Chemistry of Ireland

Congress: Drug Development, Delivery and Manufacturing



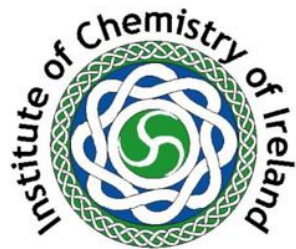
The 70th Irish Universities Chemistry Research Colloquium at QUB



Prof Eva Hevia, University of Strathclyde,
Glasgow, Scotland



Prof Eric Anslyn, University of Texas at Austin (Left)



Originated 1922
Incorporated 1950

The Institute of Chemistry of Ireland

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Ravensdale Road, Dublin D03 CY66.

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The Professional Body for Chemists in Ireland

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**School of Chemical and
Pharmaceutical Sciences**

A message from the President

Dear Colleagues,

Up to now there have been a number of events in 2018. There has been a Eurachem workshop on Quality Assurance in Dublin Castle on 14th -15th May along with the ICI congress on Drug Development, Delivery and Manufacturing in Athlone Institute of Technology on 24th May. There was a successful Irish Universities Chemistry Colloquium in Queens University College in Belfast on 21st and 22nd June. Lastly there was the 27th IUPAC symposium on Photochemistry took place in UCD from July 8 to July 13. Prof. John Kelly delivered the Boyle Higgins award presentation in the RCSI on 19th April. The EUChEMS Chemistry congress will be in Liverpool from 26th- 30th August (see <https://www.euchems2018.org>). The next EUChEMS Congress will be in Lisbon in 2020 and we were successful in winning the bid to host the Congress in Dublin in 2022, which coincides with the Centenary celebrations of the Institute. I am delighted to announce that Prof. Anita Maguire will receive the Annual Lecture Series (Eva Philbin) Award for 2018. I would like to wish everyone associated with the Institute the best in the coming academic year. Finally I wish to pay tribute to our Editor Patrick Hobbs for his dedication in bring this edition of Irish Chemical News to press.

John Cassidy

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Editorial

Lots of exciting chemistry activity so far this summer. The big announcement for me personally is that we won the bid to host the EuCheMS Chemistry Congress in 2022. The official announcement will come later from EuCheMS. A small group of us from the Local organising Committee including our President John Cassidy and Professional Conference Organiser Noel Mitchel travelled to Bern, Switzerland on June 18th to present our case to host the Congress. We were bidding against tough competition from 5 other countries and the important thing is we won. It has been a long gestation from conception over 5 years ago and I'm really proud we set that bar high for the Institute and won on our second attempt after Seville in 2016. This is a huge opportunity for the Institute to make its presence felt in European chemistry especially on its Centenary year 2022.

Given that the **Institute** has won the bid for 2022 and this year's **7th EuCheMS Chemistry Congress** is in Liverpool, in August hosted by our colleagues in the RSC we need a large Irish delegation of chemistry researchers here to attend and participate in this increasingly important international Congress. The Institute is now up there with the big chemistry players. So join the Institute and support your profession www.chemistryireland.org

If you have not yet registered do so now, as this will help us with the bid for 2022. <https://www.euchems2018.org>

I appeal to Principal Investigators and Heads of Chemistry Schools to get your teams ready to attend the **EUChemS Chemistry Congress** in Liverpool and show support for our bid.

Chemistry Ireland is still in gestation but I am still targeting publication of the inaugural Volume 1, No. 1 in the Autumn.

Like the last Issue this Issue carries reports of several chemistry conferences. The Institute is very proactive in organising or supporting relevant chemistry activity and we have plenty of photos of chemists participating and enjoying these activities. **43rd Congress in AIT, Athlone**, on Drug Development, Delivery and Manufacturing. This was well attended and the organiser Dr Sean Reidy has written a report.

We also had the **70th Irish Universities Chemistry Research Colloquium** in **QUB, Belfast** spread over two days with an invited speaker each day who are experts in the fields and delivered two very interesting lectures. I have listed in tabular format the names presenters and titles of their presentations along with names and titles of the posters. The prizes winners are also listed.

Sadly we have lost one of our Honorary Fellows **Prof Elizabeth E. Lee Hon FICI, NUIG** and I include an obituary prepared by her colleagues at NUIG.

Some of the other chemistry events taking place over the summer will be reported on in the next issue.

A team at The University of Texas at Austin have given me permission to publish a short report on their development of a new, cost-effective method for synthetically producing a biorenewable platform chemical called triacetic acid lactone (TAL) that can be used to produce innovative new drugs and sustainable plastics

We have the names of the winners of the Schools' Chemistry Newsletter and National Eurachem Analytical Measurement Competition.

Included an article about the International Year of the Periodic Table of Chemical Elements (IYPT2019) from EuCheMS and IUPAC and for the first time some announcements from SFI in addition to the usual IDA and EI content along with Industry and Business reports. [EuCheMS is changing see page 44.](#)

Comments and Responses are welcome and can be sent to:- info@instituteofchemistry.org

Patrick Hobbs MSc, FICI, CChem, CSci, MRSC.

Editor
23/7/2018



Molecular frontiers & global challenges

ACC LIVERPOOL, UK
26–30 August 2018



About the congress

With a theme of ‘Molecular frontiers and global challenges’, the 7th EuCheMS Chemistry Congress features five days of scientific and technical sessions, plenary lectures, oral and poster communications, keynote speakers and roundtable discussions, as well as exceptional networking opportunities, an exhibition and a unique social programme.

The EuCheMS Chemistry Congresses reflect the outstanding research being done in Europe and around the world by bringing together chemists from different countries and professional backgrounds to exchange ideas, advance knowledge and discuss key issues for chemistry and society. As such, the 7th EuCheMS Chemistry Congress offers you exceptional opportunities to network with chemists from across Europe and beyond.

Echo Arena Liverpool

Kings Dock, Liverpool L3 4FP, UK
Liverpool, Liverpool
United Kingdom

Conference Website: <https://www.euchems2018.org/>

Update: There will be seven plenary speakers and six have now been confirmed. These are:

Paul Alivisatos, University of California, Berkeley, USA

Frances Arnold, California Institute of Technology (Caltech), USA

Stefanie Dehnen, Philipps-Universität Marburg, Germany

Christopher Dobson, University of Cambridge, UK

Ben Feringa, University of Groningen, The Netherlands

Jin-Quan Yu, The Scripps Research Institute, USA

The seventh and final plenary speaker will be the winner of the European Chemistry Gold Medal which will be announced next year.

| | |
|--|------------------------------------|
| Theme A: Catalysis – Graham Hutchings (UK) | |
| A1: Catalysis at the homo/hetero/bio interface | Christophe Copéret (M) Switzerland |
| A2: Heterogeneous catalysis | Annette Trunschke (F) Germany |
| A3: Homogeneous catalysis | Carmen Claver (F) Spain |
| A4: Biological catalysis | Dick Janssen (M) Netherlands |
| Theme B: Chemistry in the Life Sciences – Sara Linse (Sweden) | |
| B1: Biomolecular assembly processes | Tuomas Knowles (M) UK |
| B2: Bioimaging, analysis and diagnostics | Andrew de Mello (M) Switzerland |
| B3: Synthetic biology | Greg Challis (M) UK |
| B4: Chemical biology and drug discovery | Alessio Ciulli (M) UK |
| Theme C: Energy, Environment & Sustainability – Ib Chorkendorff (Denmark) | |
| C1: New approaches to clean fuels | Beatriz Roldan (F) Germany |
| C2: Fuel cells and batteries | Ifan Stephens (M) UK |
| C3: Solar photovoltaics | Annamaria Petrozza (F) Italy |
| C4: Sustainable use of resources and green chemistry | Eleni Heracleous (F) Greece |
| C5: Clean water and air | Ester Heath (F) Slovenia |
| Theme D: Inorganic Chemistry Advances – Maria José Calhorda (Portugal) | |
| D1: Inorganic reaction mechanisms | Yann Garcia (M) Belgium |
| D2: Bioinorganic chemistry | Ricardo Louro (M) Portugal |
| D3: Main group chemistry | Jean-François Halet (M) France |
| D4: Transition metal chemistry | Grace Morgan (F) Ireland |
| Theme E: Materials, Interfaces & Devices – Barbara Albert (Germany) | |
| E1: Materials governed by scale and dimensionality | Joao Rocha (M) Portugal |
| E2: Un-conventional syntheses of inorganic solids | Natalia Dubrovinskaia (F) Germany |
| E3: Functional materials and their electronic, magnetic and optical properties | Amparo Fuertes (F) Spain |
| E4: Biomaterials | Peter Behrens (M) Germany |
| E5: Soft control: macromolecules and smart polymers | Klaus Müllen (M) Germany |
| Theme F: Organic Chemistry Advances – Josef Michl (Czech Republic) | |
| F1: Supramolecular and self-assembled materials | Paolo Samorí (M) France |
| F2: Molecular machines and designed materials | Alberto Credi (M) Italy |
| F3: Organic synthesis and methodology | Christina Moberg (F) Sweden |
| F4: Organic reaction mechanisms | Jana Roithova (F) Czech Republic |
| Theme G: Physical and Analytical Chemistry Advances Piero Baglioni (Italy) | |
| G1: Photochemistry / photophysics / electrochemistry | David Birch (M) UK |
| G2: Advances in physical chemistry | Marie Paule Pileni (F) France |
| G3: Advances in analytical chemistry and methods | Jiri Homola (M) Czech Republic |
| G4: Computational and theoretical chemistry | Chantal Daniel (F) France |



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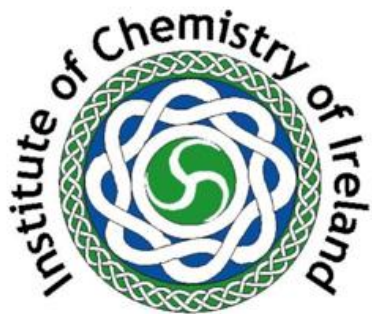
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43rd Institute of Chemistry of Ireland Congress
Drug Development, Delivery and Manufacturing
AIT, Athlone, Thursday 24nd May 2018



Report by Dr Sean Reidy, MICI, MRSC C. Chem.

A National Conference on the theme of 'Drug Development, Delivery and Manufacturing'

On Thursday 24th May the Department of Life and Physical Sciences hosted the 43rd Annual Congress of the Institute of Chemistry of Ireland (ICI). It was a daylong conference consisting of Oral and Poster Presentations and a Trade Exhibition. It began with the Council of the ICI holding their monthly meeting in the Institute board room on the Wednesday evening. IN attendance at the meeting were Council members from UL, DCU, DIT, UCD, GMIT, IT Tallaght, the Public Analyst Lab, Prof John Cassidy (current President of ICI) and AIT members. A meal was organised in the Left Bank Bistro which was attended by some of the presenters, and ICI council members.

The Congress was opened on Thursday morning by Dr Niall Seery, AIT Registrar and Prof John Cassidy DIT. The Congress was a mix of an overview of the industry, research topics, information on different industry services companies and showcasing some of AIT's research in the area. The following is a list of the presenters and their topics:

Overview and AIT Research: Matt Moran, Director, Biopharmachem Ireland 'The Biopharma Industry in Ireland'; Dr Sean Lyons, AIT, 'AIT Research overview'; Prof Clem Higginbotham, AIT 'Development of Novel Polymeric Drug Delivery Systems' and Dr Michael Nugent AIT, 'Hydrogel Drug delivery from an academic and industrial perspective'.

Research Topics: Prof Celine Marmion, RCSI ‘Exploiting Metallo-Prodrug Strategies to generate Multi-Targeted Cancer Therapeutics’; Prof John Gilmer, School of Pharmacy, TCD ‘History of Solvotrin - lessons learnt’ and Dr Andrea Erxleben, School of Chemistry, NUI Galway ‘Development of new Pt(IV) anticancer pro-drugs with reduced side effects’.

Legislation: Anne Hayes HPRA, ‘Safety Features – Medicinal Products for Human Use Commission Delegated Regulation (EU) 2016/161, Implementation from a Regulatory Perspective’

Industry Services: Dr Chris Forsdyke, PPD, Athlone ‘Planning and operational considerations of a multi-disciplinary GMP contract analytical laboratory’ and William Wilson, Thermo Fisher Scientific ‘Introduction to Twin-Screw Processes for Pharmaceutical Applications’.

We had a competition for postgrad posters which AIT post grad Romina Pezzoli (supervisors Clem Higginbotham, Noel Gately and Sean Lyons) won. A number of sponsors exhibited alongside the posters including Perkin Elmer (sponsors of the poster competition), Thermo Fisher Scientific and abcr Gute Chemie.

AIT has a shorter history relative to the ICI, opening its doors first in 1970. It has developed a number of courses and areas of research over the years including Pharmaceutical Science and Polymer Engineering. In the years since 2000, AIT has secured research funding from a broad range of national and international funding agencies, including the Programme for Research in Third Level Institutions (PRTL), Science Foundation Ireland (SFI), Health Research Board (HRB), the Technological Sector Research (TSR) programme, as well as Enterprise Ireland’s Applied Research Enhancement Programme. AIT’s research is focused in three strategic areas based on core competencies built up over many years within the Institution and aligned with regional needs and national research priority areas; namely **Materials**, **Biosciences** and **Software**. AIT’s three research institutes have developed national and international collaborations with leading companies and higher education institutions and have attracted significant multimillion euro research and innovation funding. AIT has achieved delegation of authority to award degree at PhD and MSc/MEng in research in the areas of polymer and mechanical engineering, toxicology, microbiology and software.

A number of the audience were members of the Institute including President Prof John Cassidy, DIT, Vice-President Prof Celine Marmion from RCSI, Past Presidents including Margaret Franklin and Dr Brian Murray along with AIT Chemistry lecturers on the organising committee.

The audience was composed of AIT staff and postgrads, academics from UL, DCU, TCD, RCSI, GMIT, IT Tallaght, and a number of industries based in various parts of Dublin, Kilkenny and Athlone. Approximately 70 were in attendance. Next year’s Congress is scheduled to be held in Dublin. Each presenter was given a memento to mark the occasion of the Congress in AIT, a copy of the History of the ICI part 1 prepared by the recently deceased Hon. Secretary of the Institute, Philip Ryan.

On behalf of the ICI I would like to thank a number of AIT staff who helped with the smooth running of the event including, Siobhan Lee and Susan Carroll, Gerry Duane and the caretakers, Donie McHugh, Dr Don Faller and fellow Organising committee members C O’Donnell, C Higginbotham, N Morris, B Murphy, E McCullagh, C Donoghue, A O Malley, J Roche and G Stack.

Sean Reidy

Photos and Captions on next page:



Congress 1: Participants at Congress (Session 1) enjoying the sunshine during the midmorning break.



Congress 2: Presenters at Congress (Session 1) enjoying the sunshine during the midmorning break L to R: Dr Chris Forsdyke, PPD, Athlone, Prof Celine Marmion RCSI, Dr Sean Lyons AIT, Prof John Cassidy DIT, (current President of ICI), Dr Sean Reidy (AIT), William Wilson Thermo Fisher Scientific, Matt Moran Director, Biopharmachem Ireland, Dr Andrea Erxleben School of Chemistry, NUI Galway. (missing Prof Clem Higginbotham, AIT).



Congress 3: Speakers (Session 2): Anne Hayes (HPRA), Dr Andrea Erxleben (School of Chemistry, NUI Galway), Prof John Gilmer (School of Pharmacy, TCD), and along with Dr Sean Reidy AIT (Midland representative on Council of ICI)



Welcoming smiles at the ICI Congress: Dr Noreen Morris and Dr Carmel Donoghue and Susan Carroll from AIT (partially hidden).



AIT Congress L to R Dr Sean Reidy (AIT) , Dr Gary Stack (AIT), Dr Therese Montgomery (AIT) and Dr Cormac Quigley (GMIT)



Registration Desk at AIT Congress L to R: Jim Roche AIT, Leo McGuinness Perkin Elmer, Brian Murphy AIT, Matt Moran Biopharmachem Ireland, Brian Garvey AIT, Siobhan Lee AIT, Noreen Morris AIT and Susan Carroll AIT.



Location: The Convention Centre Dublin, Spencer Dock, North Wall Quay, Dublin, D01 T1W6, Ireland

Event description: The biennial symposium provides a scientific venue for sharing ideas and experiences on the applications of combustion. Over 1,300+ in attendance will partake of the technical program, consisting of contributed papers and Work-in-Progress Poster (WiPP) sessions. Invited lectures, topical reviews, and special industry perspectives will be presented by eminent specialists. The programme will explore the topics in 13 combustion colloquia.

The Combustion Institute is an international, non-profit, educational and scientific society. Founded in 1954, CI promotes and disseminates research activities in all areas of combustion science and technology for the advancement of many diverse communities around the world.

CI is dedicated to combustion research as a field of eminent societal importance that cuts across many scientific and engineering disciplines.

The conference will provide excellent networking opportunities with an exhibition space and poster zone allowing for further discussion and debate.

www.combustionsymposia.org

Such topics covered at the 37th International Combustion Symposium:

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- Soot, Nanomaterials, and Large Molecules
 - Diagnostics
 - Laminar Flames
 - Turbulent Flames
- Spray, Droplet, and Supercritical Combustion
- Detonations, Explosions, and Supersonic Combustion

- Solid Fuel Combustion
 - Fire Research
- Stationary Combustion Systems and Control of Greenhouse Gas Emissions
 - Internal Combustion Engines
 - Gas Turbine Combustion
 - Other Concepts

A large exhibition and poster zone are a part of the conference, allowing for further engagement and interactions with industry. For exhibition and sponsorship enquiries please contact us at Combustion2018Expo@keynotepco.ie

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OBITUARY: PROFESSOR ELIZABETH E. LEE Hon FICI, NUIG.



Professor Elizabeth ('Nellie') Lee who passed away on 11th April this year was a staff member of University College, Galway Chemistry Department for 42 years right up to her retirement in 1989. Born in Galway on 2nd February 1924 Nellie did her B.Sc. in the forties and graduated with honours in 1946. She followed this with a M.Sc. and later a Ph.D. under the direction of Professor Tom Dillon. She had impressed Dillon and he asked her to stay on as an assistant lecturer in the Chemistry Department. Dillon, Professor Frank Coll, who succeeded Dillon in 1953, and others had built up a strong school of carbohydrate research and Nellie joined this group and made important contributions in this area. She published in the leading journals such as the *Journal of the Chemical Society* (London) and *Carbohydrate Research*. Synthesis and structural analysis were areas where she and her students made major contributions. She applied the emerging technique of nuclear magnetic resonance (NMR)

spectroscopy in her carbohydrate research using proton NMR and later carbon-13 NMR. In this she was supported and aided by the late Professor Richard Butler who was himself a leading expert in NMR.

Among those students who co-authored her papers were John Wood (CIT), John O'Reilly and John O'Callaghan (both Roche), Ann Bruzzi (Public Analyst Laboratory, Galway), Noeleen Melody (Arizona State Univ.), Noel Gavin (GSK) and Gay Keaveney (GMIT). In total she supervised fourteen Ph.D. and six M.Sc. students. In all her years in the Department side by side with her research activities she carried a large teaching load and many students will remember the enthusiasm and clarity with which she delivered her lectures.

She played camogie in her earlier years and from 1948 on she became hugely involved in the UCG camogie club and mentored the College teams in their Ashbourne Cup wins in 1948, 1949, 1956, 1957, 1964, 1968, 1978, 1979, 1989, 1990 and 1994. Prior to Nellie's coaching role UCG had lifted that prestigious Cup just four times in 1917, 1920, 1928 and 1930.

For many years she served as Secretary and main organiser of the Institute of Chemistry for the Western region and the Institute made her an Honorary Fellow in 2002. In this role she organised several scientific meetings and a number of Irish Universities Chemistry colloquia. At busy times such as Galway Race Week Nellie would help out her late sister Ann in the Dew Drop Inn their family pub in Mainguard/Cross streets. You could be pretty sure of a good pint if you were 'UCG'!

Happily the foundations that she helped to lay in carbohydrate chemistry are blossoming now and the reputation of Galway as a centre of carbohydrate research is as strong as ever in many ways due to the current Professor of Chemistry Paul Murphy who got his carbohydrate lectures from Nellie when he was a student in UCG.

Most of the UCG employees knew Nellie very well as did many students whether in chemistry or the camogie club. Nellie was well known and widely respected within UCG/NUIG by a wide circle of friends outside and inside the scientific and sporting community. There are many happy memories and she will be missed. May she rest in peace.

She is survived by her nephews Michael Brennan, Frank Lee, Roger Lee, Myles Brennan and Myles Lee and nieces Grace O'Leary, Una Lee and Anne O'Driscoll and other relatives.

New Sustainable Production Method Could Advance Plastics and Pharmaceuticals

Feb. 12, 2018



UT engineers show off their school spirit by molding the new, sustainably produced plastic material into a Longhorn silhouette in Hal Alper's lab. *Cockrell School of Engineering*

AUSTIN, Texas — A team of chemical engineers at The University of Texas at Austin has developed a new, cost-effective method for synthetically producing a biorenewable platform chemical called triacetic acid lactone (TAL) that can be used to produce innovative new drugs and sustainable plastics at an industrial scale, as described this week in *Proceedings of the National Academy of Sciences*.

Led by Hal Alper, professor in the McKetta Department of Chemical Engineering in the Cockrell School of Engineering, the team's new method involves engineering the yeast *Y. lipolytica* to increase production of TAL, a polyketide, to levels that far exceed current bioproduction methods. This was accomplished by rewiring metabolism in the yeast through synthetic biology and genetic engineering. Ultimately, the research team increased production capacity tenfold, enabling polyketides to be mass-produced for incorporation into a variety of new applications in industry.

Polyketides are an important class of naturally derived molecules that can be used to make many useful products such as nutritional supplements, specialty polymers, pigments and pharmaceuticals. Currently, there are more than 20 drugs derived from polyketides on the market, including immunosuppressants, statins and antimicrobials.

Up to this point, synthetic production of polyketides has been constrained by technical challenges, limiting practical applications for consumer- and industry-based needs. In particular, most technologies have limited product yields resulting in difficult chemical synthesis and poor economics. The UT Austin team's breakthrough could change that.

Using their new method, the researchers were able to purify TAL directly from a bioreactor to make a new plastic material that can be formed into a film and is seen to exhibit an orange hue and relative transparency.

“We hope to open up new product and industrial opportunities in the chemical and pharmaceutical spaces,” Alper said. “Our engineering efforts in TAL showcase that we can rewire metabolism to create renewable solutions to traditional chemical manufacturing.”

The UT Austin Office of Technology Commercialization has filed U.S. patent applications for the technology and is working to secure worldwide patents. The office is seeking commercial partners who have interest in improving the economics of polyketide production or creating new materials or products from polyketides.

“An important role for our institution, as one of the nation's leading public research universities, is to move UT Austin's research from the laboratory to useful products and services for the marketplace,” said Dan Sharp, director of the UT Austin Office of Technology Commercialization. “Research like this addresses that priority and provides society with innovative solutions that grow our economy and improve the quality of life.”

This work was funded by the Camille and Henry Dreyfus Foundation and the Welch Foundation.

For more information, contact: [Betsy Merrick](#), Office of Technology Commercialization, 512-293-1174 or 512-232-7399; [Patrick Wiseman](#), Cockrell School of Engineering, 512-232-8060.



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Institute of Chemistry of Ireland Schools' Chemistry Newsletter Competition

Winners

The annual Institute of Chemistry of Ireland **Schools' Chemistry Newsletter** winners have been announced. The Theme was “**Molecular Machines**” The title was prompted by the *Nobel Prize in Chemistry* 2016 which was awarded jointly to Jean-Pierre Sauvage, Sir J. Fraser Stoddart and Bernard L. Feringa "for the design and synthesis of molecular machines". They Developed the World's Smallest Machines.

Winner:

Adam Potterton – St Andrews College, Booterstown, Dublin

Teacher: Ms Hilary Rimbi

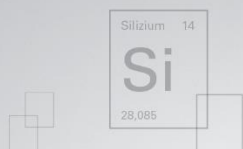
Runner-ups:

Cian Morey – Colaiste an Spioraid Naoimh, Bishopstown, Cork.

Teacher: Ms Aileen O'Mahony

Ema Keyes – St Andrews College, Booterstown, Dublin.

Teacher: Ms Hilary Rimbi



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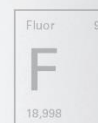


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National Eurachem Analytical Measurement Competition

EAMC Success for 2nd Year Students

Congratulations to student teams from DIT who swept the board at the 19th National Eurachem Analytical Measurement Competition in Letterkenny Institute of Technology on March 23rd, earning both the overall winner and runner-up prizes. The EAMC is designed to raise awareness among student analysts of uncertainty in measurement and the requirement for excellence in analytical skills. This year's competition saw 23 teams from 12 Higher Education Institutions competing for the coveted prize.

The overall winners were Steven Grant & Jonathan Roche (both from DT299), while Dounya Yahi (DT299) & Darragh Roche (DT261) took the runners-up prize. We are so proud of their amazing achievement!

Teams were mentored by Dr Vanessa Murphy & Dr Áine Whelan.

Pictured (L-R): Dr Áine Whelan, Dr Vanessa Murphy, Dounya Yahi, Darragh Roche, Steven Grant, Jonathan Roche





The 70th Irish Universities Chemistry Research Colloquium was held in the David Keir Building, Stranmillis Road, Belfast on 21st – 22nd June.



On Thursday the first Session was opened with Keynote Speaker, Prof Eva Hevia, University of Strathclyde, Glasgow, Scotland. The title of her lecture was “Towards a Paradigm Shift in Polar Organometallic Chemistry”

Eva heads up the Eva Hevia Group, her and her group’s main research thrust is to apply polar organometallic reagents incorporating special cooperative effects to key organometallic transformations and to rigorously understand the chemistry involved. Some of her recent contributions have opened up the exciting new areas of main group metal-mediated cascade activations of M-heterocyclic molecules and Green Chemistry as well as developing new s-block metal catalysis.

Eva gave a very interesting talk and showed the possibilities of using alternatives to toxic solvents and application in Green Chemistry. More information about her work is available at <http://www.evaheviagroup.com>.

An abstract of her presentation is here:-

Towards a Paradigm Shift in Main Group Polar Organometallic Chemistry

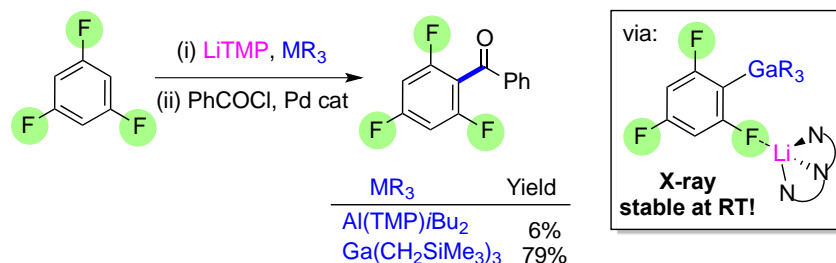
Eva Hevia

*WestCHEM, Department of Pure and Applied Chemistry, University of Strathclyde, Glasgow, G11XL, UK.
eva.hevia@strath.ac.uk*

Organolithium compounds (e.g., alkyls, aryls and amides) have been and remain pivotal to the development of synthetic chemistry. Staple reagents in academic laboratories and chemical industries worldwide, their extensive

utilization reflects their high reactivity and selectivity (notably in directed ortho-metallation). However, in many cases this high reactivity can also compromise their functional group tolerance, imposing the use of severely restrictive protocols (e.g., moisture- and oxygen-free organic solvents, inert atmospheres, extremely low temperatures etc.) and frequently the lithiated organic intermediates can be unstable and decompose.

This presentation will explore alternative organometallic strategies to overcome some of these major drawbacks faced by standard organolithium reagents. This includes the use of bimetallic combinations for deprotonative metallation reactions, which operating in tandem enable the trapping of sensitive anions such as metallated diazines (see Scheme) or fluoroarenes. Furthermore, the promising use of non-conventional solvent systems such as Deep Eutectic Solvents (DESs) in organolithium chemistry will also be discussed, edging closer towards developing greener and air and moisture compatible methodologies.



The Friday the keynote speaker was Prof Eric Anslyn, University of Texas at Austin. His lecture was titled “Physical Organic Chemistry Applied to their Analytical Sciences”. His group focuses on physical organic and supramolecular chemistry. Using mechanistic insights and knowledge of photophysics, we devise sensing systems for real-life applications. In particular, his group creates rapid screening assays for enantiomeric excess, diastereomeric excess, and reaction yield, as a means of facilitating reaction discovery in catalytic asymmetric induction. In addition, their analytical efforts involve the area of differential sensing, where an array of cross-reactive sensors are used to create patterns that are diagnostic of individual analytes or the consistency of complex mixtures. The current focus is on the classification of kinase activity in cells, and the potential to rapidly screen kinase inhibitors in a parallel fashion. Very recently, the group has delved into the area of reversible covalent bonding, creating a suite of reactions that can all occur simultaneously in the same solution with no crossover between them. They are exploiting these reactions for material applications, polymer synthesis, complex assembly formation, and self-replicating oligomers. They engage in active collaborations with the Ellington and Marcotte groups for generating sequence defined polymers and single molecule peptide sequencing routines. More information about his work is available at: <http://anslyn.cm.utexas.edu/research/research.html>. An abstract of his presentation is below:-



Three Tales of Supramolecular Analytical Chemistry

Eric V. Anslyn, UT at Austin

One goal of our group is to design and implement high-throughput screening (HTS) assays for enantiomeric excess (*ee*) in catalytic asymmetric reaction screening. The analysis is performed in microtiter plates where the *ee* values, as well as concentration (reaction yield), of 96 crude reaction mixtures. Assays for diols, amines, carboxylic acids, ketones, and alcohols have been created.

Mechanistic chemistry can be utilized to generate signal amplification in sensing routines. We have recently exploited auto-inductive cascades to measure the biproducts of hydrolysis of nerve agents. In this tale, the concepts and approaches will be delineated to detect fluoride and thiols, the products from V- and G- agents.

The senses of taste and smell operate via a series of cross-reactive protein-based receptors that are non-selective, but create patterns that discriminate solution and vapor composition, respectively. It will be shown that a union of designed receptors targeted to a class of analytes, with combinatorial methods, gives fingerprints that differentiate between the individual members of the class. The technique represents a marriage of supramolecular chemistry and chemometrics.

The 70th Irish Universities Chemistry Research Colloquium
QUB, The David Kier Building, Stranmillis Road

Thursday 21st June – Oral Presentations

- O1: Wayne Travers, ITT**
Spectroscopic studies of the bioactive peptide Nisin
- O2: Muhib Ahmed, Maynooth**
Transition Metal Complexes of Novel Phenanthroline Derivatives as Antibacterial Agents
- O3: Caitlin Buck, QUB**
Photocatalytic Destruction of Bacteria with a view to Developing a Photocatalytic Reactor for Water Disinfection with a Consideration of Bacterial Factors in Promoting Resistance to Treatment
- O4: Craig Mullen, DIT**
Antibacterial Coatings Developed for use in Medical Device Implantation
- O5: Nicolás Fantoni, DCU**
Artificial Metallo-Nucleases for Gene Editing
- O6: Meghan Winterlich, NUIG**
Synthesis and Characterization of a Novel Mixed-Metal Organic Framework with Biomedical and Environmental Applications
- O7: Reece G. Kenny, RCSI**
Design and Development of Novel Dual-Threat Metal Chemotherapeutics
- O8: Matthew Nixon, Maynooth**
Are structure-less protein regions really so structure-less? An atomistic view of the architecture of disorder and its functions in protein-protein Interactions?
- O9: Pia McAleenan, QUB**
Capture and sensing of glyphosate in aqueous samples: Are molecularly imprinted polymers the answer?
- O10: Conor Crawford, UCD**
*Synthesis of capsular polysaccharide fragments of the fungal pathogen *Cryptococcus neoformans* and their potential applications as FRET probes*

The 70th Irish Universities Chemistry Research Colloquium
QUB, The David Kier Building, Stranmillis Road

Friday 22nd June – Oral Presentations

- O11: Paul Wix, TCD**
Hybrid Organic Inorganic Polyoxometalate Cage and Ring Systems
- O12: Annabel Higgins; WIT**
Development of Novel Wound Dressing Formulations Incorporating Antimicrobial Compounds Extracted from Seaweeds for the Topical Treatment of Wound Infections
- O13: Emma MacHugh, DIT**
Development of a Microfluidic Based Multianalyte Biosensor for Medical Diagnostic Applications
- O14: Agnieszka Wadolowska, ITT**
Synthesis of Structural analogues of the Nisin peptide A ring
- O15: Yikai Xu, QUB**
Self-Assembled Nanoparticle Arrays - Bulk Materials with Nano Properties
- O16: Conor Mercer, NUIG**
Automation for Electrochemical Biosensors using Microfluidics and the Internet of Things
- O17: Karen G. Ontiveros-Castillo, DCU**
Synthesis, characterisation and biological evaluation of novel ferrocenyl bioconjugates as potential anti-cancer agents
- O18: Paul Buckley, UCC**
Light Absorbing Components of Atmospheric Particles
- O19: Cara Moloney, UCD**
Towards Next Generation MRI-trackable Drug Delivery Vehicles
- O20: Mark Kelada, Maynooth**
The design, synthesis and evaluation of novel small molecules with potential as anti-diabetic agents
- O21: Elena De Calatrava Pérez, TCD**
Towards The Development of Glycosylated Naphthalimides as Prodrugs for Anticancer Applications

The 70th Irish Universities Chemistry Research Colloquium
QUB, The David Kier Building, Stranmillis Road

Thursday 21st June – Flash Talks (2mins each)

- F01: Brian Murphy, ITT**
Latent fingerprint enhancement on metallic surfaces for forensic analysis (E-PRINT)
- F02: Aisling Ryan, RCSI**
Platinum-Based Anticancer Compounds Targeting Bulk Tumour and Cancer Stem Cells
- F03: Arvind Negi, NUI**
Design and Synthesis of heterocycles as apoptosis inducers
- F04: Keana De Guzman, DCU**
Characterisation of Stretchable Smart Tattoos for Skin Hydration Monitoring
- F05: Keith Byrne, ITT**
Synthesis of coumarin derivatives and antimicrobial peptide.
- F06: Patrick Kielty, NUI**
Nitric Oxide Donor Furoxans via Methylmagnesium Chloride Mediated Acetylations of Isosorbide
- F07: Eduardo Morais, UCD**
Sustainable production of fuels over visible-light-responsive catalyst via artificial photosynthesis
- F08: John Cahir, QUB**
Synthesis and design of new Type 3 Porous Liquids
- F09: Bríonna McGorman, DCU**
Next Generation Antisense Therapeutics
- F10: Patricia Monks, RCSI**
3D Printing of Spatially Patterned Magnetically Addressable Hydrogels

The 70th Irish Universities Chemistry Research Colloquium
QUB, The David Kier Building, Stranmillis Road
Thursday 21st – Friday 22nd June

Poster Presentations
Wellington Park Hotel, Malone Road

- P01: Chunchun Li, QUB**
Transforming Interfacial Self-Assembled 2-D NP Arrays into Freestanding Flexible Plasmonic Sensors
- P02: Jordan Kevin Magtaan, ITT**
Evaluating the Assembly of an Oligopeptide Prepared Using Greener Solid-Phase Peptide Synthesis
- P03: Xinyuan Li, QUB**
Polymer films containing SERS active metal nanoparticles used in a variety of fields
- P04: Alessandra Gihon, DIT**
Synthesis, Characterization and Evaluation of Ruthenium (II) Antibacterial Agents
- P05: Muhammad Qasim Mushtaq, DIT**
Targeted delivery and UV activation of ruthenium (II) based chemotherapeutics
- P06: Sean Hennessey, NUI**
Investigations into the Syntheses and Analysis of Ruthenium-Based Photoactive Porous Materials
- P07: Keith Byrne, ITT**
Synthesis of coumarin derivatives and antimicrobial peptide
- P08: Abdullah A. Hassan, UCD**
Towards the Synthesis of Pseudaminic Acid & Related Analogues as Substrates for Chemoenzymatic Studies
- P09: Aisling Ryan, RCSI**
Platinum-Based Anticancer Compounds Targeting Bulk Tumour and Cancer Stem Cells
- P10: Patricia Monks, RCSI**
3D Printing of Spatially Patterned Magnetically Addressable Hydrogels

The 70th Irish Universities Chemistry Research Colloquium
QUB, The David Kier Building, Stranmillis Road
Thursday 21st – Friday 22nd June

Poster Presentations
Wellington Park Hotel, Malone Road

- P11: Viviane Chiaradia, RCSI**
Poly (GLOBALIDE) functionalization with Phosphoester Groups for production of Electrospun Fibres
- P12: Prabhakar Sidambaram, DIT**
Micro- and Nanoelectrodes: Fabrication, Characterisation and Application in the Detection of Ag⁺ ions in Biological Media
- P13: William McCarthy, Teagasc Food Research Centre**
Development of a Rapid Test Method for Mineral Analysis of Milk Powders Using Energy Dispersive X-Ray Fluorescence Spectroscopy
- P14: Amanda Doyle, Maynooth**
A novel synthetic methodology for biaryl synthesis
- P15: Harlei Martin, Maynooth**
Glycoconjugates to Inhibit Candida Albicans Adhesion
- P16: Nan Mao, Maynooth**
A long wavelength colourimetric chemosensor for fluoride
- P17: Clara Charleton, Maynooth**
Pyrazolopyrimidinones as potential therapeutics for glioblastoma multiforme treatment
- P18: Tatenda Mareya, WIT**
Enantioselective Biocatalytic Synthesis of β amino Acids
- P19: Shahab Ud Din, WIT**
Processing Induced Phase Transformations in Crystalline Active Pharmaceutical Ingredients
- P20: Mariana Gavindova, WIT**
Design and synthesis of novel organocatalysts for the asymmetric aldol reaction via enamine intermediate towards the synthesis of 3-hydroxy-3-alkyl oxindoles

The 70th Irish Universities Chemistry Research Colloquium
QUB, The David Kier Building, Stranmillis Road
Thursday 21st – Friday 22nd June

Poster Presentations
Wellington Park Hotel, Malone Road

- P21: Arvind Negi, NUI Galway**
Design and Synthesis of heterocycles as apoptosis inducers
- P22: Stephen Barrett, Maynooth**
Synthesis, characterisation and evaluation of in vitro and in vivo antibacterial activity of novel Cu (II)-steroid complexes
- P23: Shona O'Brien, RCSI**
Development towards strong double network hydrogels from synthetic polypeptides
- P24: Keana De Guzman, DCU**
Characterisation of Stretchable Smart Tattoos for Skin Hydration Monitoring
- P25: Briónna McGorman, DCU**
Next Generation Antisense Therapeutics
- P26: Stephen O'Reilly, DCU**
Sulfur organocatalysis for aziridine and aryl pyrroline synthesis using the Corey-Chaykovsky reaction
- P27: Teresa Lauria, DCU**
Therapeutic and Biochemical Applications of Oxidative Chemical Nucleases
- P28: Stephen Lyons, DCU**
Tailoring of Superparamagnetic Nanoparticles for Biomarker Targeting In-Vivo
- P29: Sara Usai, DCU**
Novel approaches to electrocatalytic CO₂ reduction using modified ionic liquids
- P30: Roisin McCarthy, UCD**
Approaches Towards the Synthesis of Disaccharides

The 70th Irish Universities Chemistry Research Colloquium
QUB, The David Kier Building, Stranmillis Road
Thursday 21st – Friday 22nd June

Poster Presentations
Wellington Park Hotel, Malone Road

- P31: Vibe B. Jakobsen, UCD**
Piezoelectric and Spectroscopic Characterization of the Spin State Transition in a Mononuclear Manganese (III) Complex
- P32: Suman Sumantray, NUI Galway**
Behaviour of intrinsically disordered proteins at liquid interfaces: insights from molecular simu
- P33: Patrick Kielty, NUI Galway**
Nitric Oxide Donor Furoxans via Methylmagnesium Chloride Mediated Acetylations of Isosorbide
- P34: Anna Christina Vetter, UCD**
Phosphine-Free Wittig Reaction via an Umpolung Approach
- P35: Vincent Duong, UCD**
Reactivity of Vinylsulfonium Salts in Stereoselective Diels-Alder Reactions
- P36: Louise Byrne, UCD**
Hybrid Oxazoline-Imidazoline Ligands for Asymmetric Catalysis
- P37: Colin Evesson, UCD**
Jahn-Teller Distortion and Atypical Geometry in Asymmetric Manganese (III) Schiff Base Complexes
- P38: Oral Patton, UCD**
Asymmetric Grignard Synthesis of Tertiary Alcohols
- P39: Eduardo Morais, UCD**
Sustainable production of fuels over visible-light-responsive catalyst via artificial photosynthesis
- P40: Alexander Doran, UCD**
Synthesis of Axially Chiral P, N Ligands for Application in Asymmetric Catalysis

The 70th Irish Universities Chemistry Research Colloquium
QUB, The David Kier Building, Stranmillis Road
Thursday 21st – Friday 22nd June

Poster Presentations
Wellington Park Hotel, Malone Road

- P41: Cathal Larrigy, UCC**
Fabrication of carbon electrodes by laser engraving and electrochemical detection of MCPA
- P42: Marta Gulman, TCC**
Towards novel optoelectronic materials: benefits of bottom-up nanographene synthesis
- P43: John Cahir, QUB**
Synthesis and design of new Type 3 Porous Liquids
- P44: Peter McNeice, QUB**
Ionic Liquids for Base Catalysed Reactions
- P45: Rachel Andrews, QUB**
Biomimetic Alcohol Oxidation for Electrochemical Energy Conversion
- P46: Ben Hutchings, QUB**
Feedback Kinetics in a Mechanochemical Reaction
- P47: Gavin Irvine, QUB**
Biocompatible polymeric nanoparticles for drug/DNA delivery using biologically friendly polymerisation processes
- P48: Marie Finnegan, QUB**
Preparation of novel 3D Functionalised Polymeric Nanostructures for Tissue Engineering Applications
- P49: Matthew West, QUB**
Microwave Assisted Sintering of Dense Mixed Metal Oxide Ceramic Membranes for Hydrogen and Oxygen Transport

Prize Winners at the 70th Colloquium

70th Irish Universities Chemistry Research Colloquium

Sponsorship Prizes

| SPONSOR | Prize Awarded | Winner |
|----------------------------|--|------------------------------|
| Almac | Day 1 Best Overall Oral presentation (£100) | Meghan Winterlich, NUIG (O6) |
| Kingspan | Day 2 Best Overall Oral Presentation (£100) | Yikai Xu, QUB (O14) |
| Royal Society of Chemistry | Best Overall Flash (£30) | Patricia Monks, RCSI (F10) |
| Evonik/EUCHEMS | 1 st Place Poster Presentation (€100) | Vincent Duong, UCD (P35) |
| Royal Society of Chemistry | 2 nd Place Poster Presentation (£30) | Vibe B. Jakobsen, UCD (P31) |
| Royal Society of Chemistry | Highly commended Poster (£15) | Patricia Monks, RCSI (P10) |
| Royal Society of Chemistry | Highly commended Poster (£15) | Shahab Ud Din, WIT (P19) |
| Royal Society of Chemistry | Highly commended Poster (£15) | Gavin Irvine, QUB (P47) |
| Royal Society of Chemistry | Highly commended Poster (£15) | Arvind Negi, NUIG (21) |
| Royal Society of Chemistry | Highly commended Poster (£15) | Eduardo Morais, UCD (P39) |
| Royal Society of Chemistry | Highly commended Poster (£15) | Peter McNeice, QUB (P44) |

Oral Presentations

Plenary 1

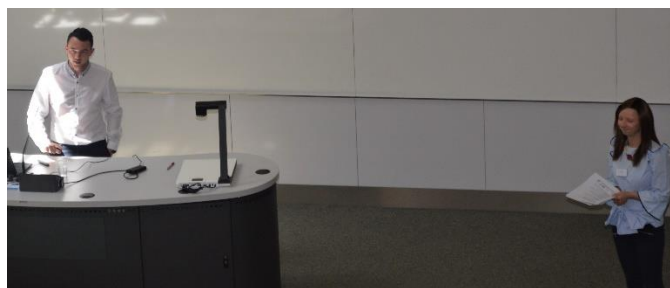


Prof Eva Hevia

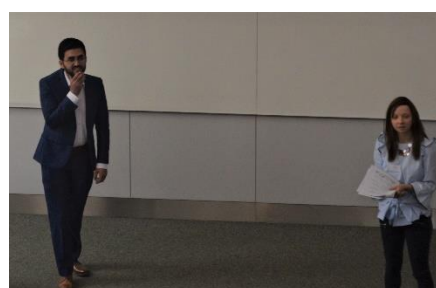
Plenary 2



Prof Eric Anslyn taking questions with Dr Gary Sheldrake



Wayne Travers, ITT



Muhib Ahmed, Maynooth University



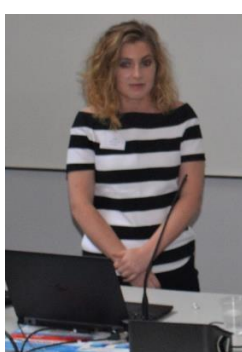
Caitlin Buck, QUB



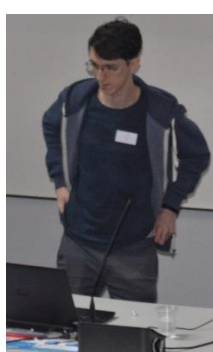
Craig Mullen, DIT



Nicolo Fantoni, DCU



Meghan Winterlich, NUIG



Reece Kenny, RCSI



Matthew Nixon, MU



Paul Wix, TCD



Annabelle Higgins, WIT



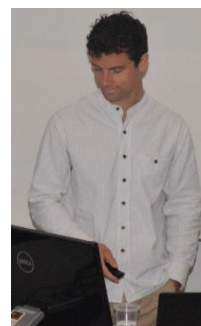
Emma McHugh, DIT



Agnieszka Wadolowska, ITT



Yikai Xu, QUB



Conor Mercer, NUIG



Karen Ontiveros Castillo, DCU



Paul Buckley, UCC



Cara Moloney, UCD



Mark Kelada, MU



Elena de Calatrava Perez, TCD

Break Time & Networking



Mark Kelada EYCH & ICI with Peter McNeice (QUB)



Valia Amir-Ebrahimi with ?



Peter McNeice with Prof AP De Silva



Middle Prof John Cassidy President ICI with Mark Kelada, on right Rachel Whiteside and John Cahir on her right



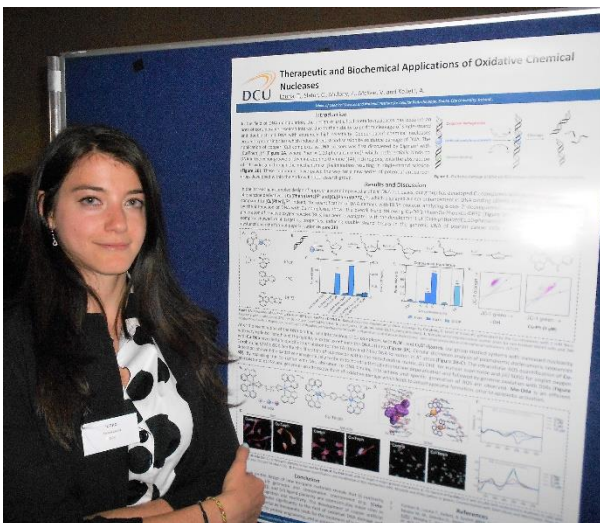


Peter McNeice Rachel Whiteside, A P de Silva and Pia McAleenan (all QUB)

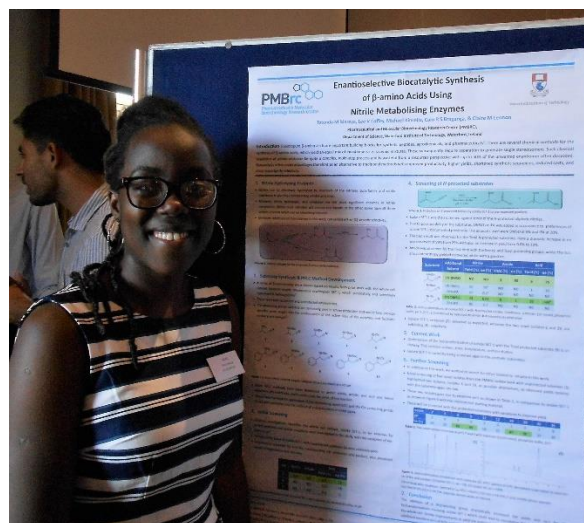


Dr. Eithne Dempsey MU with Dr Brian Murray ITT & ICI

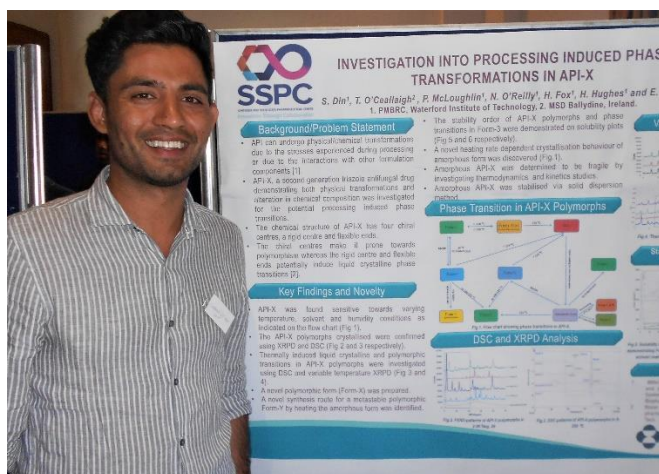
Posters



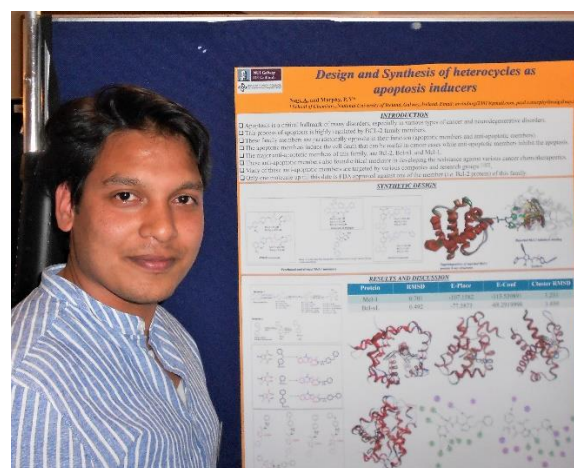
Teresa Lauria, DCU



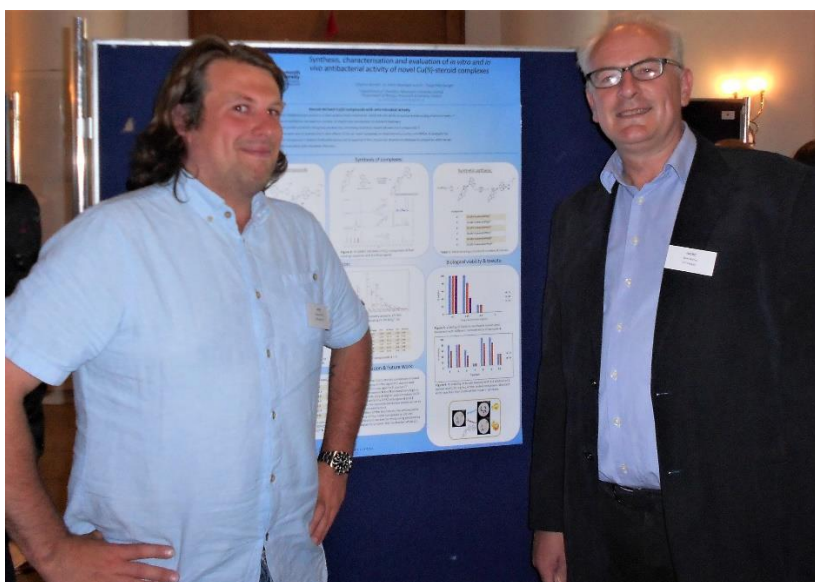
Tatenda Mareya, WIT



Shahab Ud Din, PMBrc, Waterford IT



Arvind Hegi, NUIG



Stephen Barrett, Maynooth University and Dr Brian Murray, ITT & ICI



In December 2017, the United Nations proclaimed 2019 the International Year of the Periodic Table of Chemical Elements (IYPT2019). The year-long celebration will coincide with the 150th anniversary of Russian scientist Dmitri Mendeleev's 1869 breakthrough in recognizing the predictive properties of elements and their compounds. From Mendeleev's initial 63 elements, the Table now comprises a total of 118 elements – ranging from the familiar, such as hydrogen, to the more obscure, like praseodymium.

Today, the Periodic Table stands out as a universally known symbol of science, as well as being itself, an example of science's global language. The UN decision, enthusiastically welcomed by scientists across the globe, offers a unique opportunity to showcase the pivotal role played by science and chemistry over the last 150 years, as well as the importance it continues to play in facing the challenges of today. From the environment to energy, industry to agriculture, health to education, the reach of the chemical sciences is broad and fundamental.

EuCheMS, as the voice of chemistry in Europe, is one of 5 supporters of the [International Union of Pure and Applied Chemistry \(IUPAC\) initiative](#). Along with our Members and Professional Networks, we will actively promote the International Year of the Periodic Table throughout 2019, through articles, social media, games and various activities, but also through many events at both national, European and international level.

We invite you to take a look at [our activities](#), [events](#), as well as how to [get involved](#)! Follow the hashtag #IYPT2019 on social media to follow all the latest news!

Are you a EuCheMS Member or Professional Network organising an event related to the IYPT2019? [Fill in our online form](#) to have your event added to our calendar!

Periodic Table of Younger Chemists



In celebration of the 100th anniversary of IUPAC and the International Year of the Periodic Table, IUPAC and the International Young Chemists Network (IYCN) announced the creation of a Periodic Table of Younger Chemists. Beginning in **July 2018** and ending in July 2019 at the World Chemistry Congress and IUPAC General Assembly, a diverse group

of 118 outstanding younger chemists from around the world who embody the [mission and core values of IUPAC](#) will be celebrated. The resulting periodic table will highlight the diversity of careers, creativity, and dedication of the young chemists leading us into the next century. Winners will be profiled on the IUPAC100 website and will receive a certificate from IUPAC. Elements of the Periodic Table of Younger Chemists will be revealed over time in order of scientific discovery ([see Wikipedia](#)). Approximately eight elements will be revealed each month beginning in July 2018 with the final elements being awarded at the IUPAC General Assembly and World Chemistry Congress in Paris, France in July, 2019. Don't wait any longer, nominate a Young Chemist!

Read more about this IUPAC and IYCN initiative [here](#).

Periodic Table Song:-

https://www.youtube.com/watch?v=rz4Dd1I_fX0

Sir Martyn Poliakoff made video's about every chemical element:-

<https://www.youtube.com/watch?v=6rdmpx39PRk&list=PL7A1F4CF36C085DE1>

Late News Update

EuCheMs is changing to “The European Chemical Society” with new logo:



The official launch of the new name, acronym and logo will be made at the EuChemS Chemistry Congress this August in Liverpool.

Tánaiste Simon Coveney and Minister Pat Breen announce over €12 million in joint research funding with Chinese Science Foundation.

Eight new Science Foundation Ireland - National Natural Science Foundation of China Partnerships announced



June 27th 2018 – Tánaiste and Minister for Foreign Affairs and Trade with responsibility for Brexit, Simon Coveney, TD and Minister of State for Trade, Employment, Business, EU Digital Single Market and Data Protection, Pat Breen, TD today announced details of eight new research collaborations supported through the partnership between Science Foundation Ireland (SFI) and the National Natural Science Foundation of China (NSFC). The projects, which will run over the next four years will support over 30 researchers in areas of strategic importance to the People's Republic of China and Ireland.

The announcement, which was made on the occasion of the Export Trade Council meeting at Iveagh House in Dublin, is a direct result of a joint investment made by the Irish government through Science Foundation Ireland to the value of €8.6 million euro and ¥31,920,000 (ca. €4,273,000) from the National Natural Science Foundation of China.

Speaking at Iveagh House, Tánaiste, Simon Coveney, said: *“Over the last decade Ireland’s engagement with China has grown from strength to strength, with China now ranking as Ireland’s largest trading partner in Asia. Collaboration and partnership in RD&I is vital for expanding this relationship. China’s emphasis on high technology systems, particularly in green-tech is extremely complimentary to Ireland’s research prioritisation and reflected in some of the outstanding projects being launched here today.”*

Minister Pat Breen added: *“Ireland is second in the World – in global scientific rankings by citation –for Nanotechnology. We also have the best wind and wave resources in Europe for renewable energy research. The projects being launched today play to these strengths and build on Ireland’s strong international reputation as an open and engaging country for research and development. We welcome the ongoing collaboration with the NSFC through the SFI-NSFC Partnership Programme and hope to broaden and strengthen this successful bilateral initiative.”*

Madam Hua Yang, Charge d'Affaires, Embassy of the Peoples Republic of China, Ireland, commented: *“Today’s award symbolizes a good start of greater Science, Technology and Innovation cooperation*

between China and Ireland in the years to come. It is our belief and hope that, with concerted efforts from both countries, our cooperation in Science, Technology and Innovation will achieve more accomplishment, benefiting the well-being of the people from both countries and around the world."

The eight projects receiving funding today were subject to rigorous review with approximately 250 international expert reviewers assisting in the peer-review process. The chosen projects feature research into the areas of wireless and optical communications, artificial intelligence, micro- and nano-electronics, climate change, green energy, and nano-materials for biomedical applications. Four academic institutions in Ireland will collaborate with six institutions across the People's Republic of China to carry out this work.

President of the NSFC, President Prof. Li Jinghai, noted that: *"The NSFC-SFI Partnership Programme supports excellent collaborative scientific research that has potential economic and societal impact. The programme builds capacity, expertise and mutually beneficial relationships between Ireland-based and China-based researchers, and will contribute to the global science and to the economic development in both countries. This is a wonderful beginning for our partnership, and I look forward to further cooperation between our two foundations."*

Congratulating the awardees, Dr Ciarán Seoighe, Deputy Director General of Science Foundation Ireland, said: *"I am delighted to welcome the first eight awards under the new SFI-NSFC Partnership Programme. Science Foundation Ireland has been building research links between Ireland and the People's Republic of China for the last number of years and the launch of these partnerships is a testament to the strong collaborative relationship between our two nations. Combining the expertise and resources of both research communities has proven very successful in attracting innovative and impactful project submissions, I am excited to see the outcomes from today's successful applicants."*

www.sfi.ie

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Minister Humphreys announces €1.8 million investment in 23 new Science Foundation Ireland Industry Fellowships



June 25th, 2018 – Minister for Business, Enterprise and Innovation, Heather Humphreys TD today announced €1.8 million in funding to support the latest round of SFI Industry Fellowship Programme awards. The Industry Fellowship Programme, which is funded by the Department of Business, Enterprise and Innovation and awarded through Science Foundation Ireland, will see 23 researchers from the 2017 Programme call, take up temporary placements in industry. The placements – ranging from 2-24 months – have proven a great success, with over 130 industry partnerships to date.

Congratulating the awardees, Minister for Enterprise and Innovation, Heather Humphreys TD said: *“Collaboration with industry is a key objective of “Innovation 2020”. Ireland has a highly skilled workforce driving our knowledge economy and programmes such as the SFI Industry Fellowship provide a vital platform for the flow of talent and expertise between our academic institutions and the corporate world. Industry partners benefit from access to leading edge technology within Irish academic institutions and our research community gains first-hand knowledge of research in a commercial setting.”*

The SFI Industry Fellowship Programme offers researchers from academia the opportunity to gain valuable insight into the commercial working environment; the cultural differences, and industrial approach to project management. For industry researchers entering academic institutions, they can benefit from access to highly specialised equipment and the deep repository of knowledge and insight within the academic community.

Dr Ciarán Seoighe, Deputy Director General of Science Foundation Ireland, added: *“Science Foundation Ireland is delighted to support the ongoing collaborative framework provided by the Industry Fellowship Programme. The Irish higher education institutions are an excellent source of highly skilled individuals, with nearly a third of PhD students and Postdocs departing to industry as a first destination. The Industry Fellowship Programme is an ideal conduit for industry partners to grow their talent base and stimulate excellence through knowledge exchange and training.”*

Discussing his participation in the Industry Fellowship Programme, Dr Sibú Padmanabhan said; *"I am looking forward to the year ahead with Versatile Packaging. My research will focus on developing an antimicrobial coating process for food packaging, to ensure safety, reduce food waste and in turn support sustainable food development. The SFI Industry Fellowship Programme has enabled me to connect with a relevant industry partner in Versatile Packaging, where access to real world expertise and high throughput processing technology will be a huge benefit to my research."*

The 23 projects supported by funding announced today cover a range of topics, including; renewable energy; cancer research; medical devices; environmental sensors; and materials science. These projects are supported by 20 industry partners ranging from Irish start-ups and SMEs to large MNCs.

"Versatile Packing is an Irish SME with a relentless focus on continuous improvement and a passion for providing unparalleled packaging solutions using leading edge technologies, so for us, the SFI Industry Fellowship Programme offers a fantastic opportunity to link into the latest research taking place in Irish Universities and bring some new ideas and perspectives in-house. We are very excited to have Sibú join our team, his project fits in very well with the company's portfolio and having him on board allows us to explore new, more speculative product ideas using the latest in materials innovation." Richard Mulligan, Director, Versatile Packaging, Monaghan.

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Contact Information:

GPE Scientific Ltd, Unit 5, Greaves Way Industrial Estate, Stanbridge Road, Leighton Buzzard, Bedfordshire, LU7 4UB. UK.

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E-mail: info@gpescientific.co.uk

Website: <http://www.gpescientific.co.uk/products/chemistry/nanalysis-nmready-benchtop-spectrometer>

Company Information:

GPE Scientific Ltd was established in 1962 and is a leading distributor and manufacturer of laboratory equipment, glass blowing products and specialised glass components for the industrial, laboratory and research markets. There are many reasons to choose GPE Scientific above our competitors; we pride ourselves in stocking thousands of products from leading suppliers providing you with the best selection of laboratory equipment on the market. This includes being the exclusive distributors for Chemglass Life Sciences and Chemical Reactors, Norell NMR Tubes and Accessories and the portable Nanalysis NMReady Benchtop Spectrometer.



Ministers Humphreys and Halligan announce 2018 Science Week Festivals and events supported by Science Foundation Ireland

12 festivals and 15 events will receive funding to improve public understanding of science and technology

Monday, 2nd July 2018 – Minister for Business, Enterprise, and Innovation Heather Humphreys, TD together with Minister of State for Training, Skills, Innovation, Research and Development, John Halligan TD, today announced investment of more than €470,000 through Science Foundation Ireland (SFI) for organisations to host Science Week festivals or events during Science Week, which takes place from the 11th – 18th November year. The funding provided through the SFI Discover Programme will support 12 festivals and 15 events across the country. Science Foundation Ireland are calling on businesses, communities and professionals to take part in Science Week 2018, which will be the biggest yet with over 1,000 events nationwide that encourage people of all ages and walks of life to be informed, inspired and involved in science, technology, engineering and maths (STEM).

Making the announcement in Cootehill, Co. Cavan today, Minister Humphreys, said: *“As the world around us continues to evolve, encouraging more people in Ireland to explore science-related careers is a priority for this Government. However, in order to achieve this goal, we must ensure that our citizens have access to science at a local level. The investment in the Science Week festivals and events will provide an opportunity to reach new audiences in locations right across the country. Crucially, many of these festivals reach areas where we know there are lower levels of engagement in science. These initiatives will form part of a wider programme of over 1,000 events taking place throughout Ireland during Science Week 2018. Through the programme, people will be given a platform to celebrate research in their community, stimulate important conversations about science and participate in interactive experiences.”*

Commenting on the announcement, Minister John Halligan, said: *“Science, technology, engineering and maths all play a very important role in all of our lives and are vital for our economic prosperity. Science Week is a great opportunity for us to celebrate our scientific achievements and find out more about the research and discovery taking place throughout the country. I would encourage everyone to get involved, run their own event, volunteer at festivals or attend an event that will be happening countrywide. Let’s aim to make this year’s Science Week bigger and better than ever.”*

The 12 Science Week regional festivals offer a range of opportunities for the public to engage in Science Week featuring family open days, schools outreach events and public talks across more than 20 counties across Ireland. Co-ordinated and co-funded by multiple partners, the Science Week festivals involve a programme of events which engage the public in STEM with a regional focus and celebrates science and research in the community.

This year sees the addition of a new festival – **“WexSci, Wexford Science Festival”** taking place throughout the County and will include an open day, family events and a science teacher conference. It is being organised by Wexford County Council in partnership with Waterford/Wexford Education & Training Board, Local Link Wexford and the Environmental Protection Agency.

The festivals that have been approved for funding in 2018 are:

- Cavan Monaghan Science Festival
- Cork Science Festival
- EUREKA Science & Technology Festival
- The Festival of Farming and Food
- Galway Science & Technology Festival
- Limerick Science Festival
- Mayo Science and Technology Festival
- Midlands Science Festival
- Sligo Science Festival
- Southeast Science Festival
- Tipperary Science Festival
- WexSci, Wexford Science Festival

Margie McCarthy, Interim Director Innovation and Education, Science Foundation Ireland said:

“We know from research we’ve carried out that about half the Irish population feel uninformed about science, technology and engineering but that more than half are interested in these areas. Science Week is not only aimed at engaging and informing the public but also to normalise science in our everyday lives and creating a long-lasting appetite for science culture. The SFI Science Week funding allows us to support and invest in quality events that will take place across the country and allow us to reach as wide and as diverse an audience as possible. We’re really looking forward to seeing some of the exciting events and speakers that our festival partners have in store for 2018. We are also calling on communities and businesses to play their part in Science Week, by organising events during the week.”

In addition to the 12 festivals, 15 other events received funding under the SFI Discover Programme Science Week call. These include a range of different events for adults and children looking at topics including baking in space, technology in archaeology, astronauts, climate change, health and vaccinations, creativity, and Ireland’s astronaut candidates.

Events include:

- **Louth Libraries Science Week Library Programme** - 40+ events over 2 weeks in Co. Louth
- **Seeing space from the islands** - varied events including 3D show (celestial Journey) presentations and astrophotography workshops on Tory, Arranmore, Inishmore and Clare Islands.
- **Vaccines: Health, Trust and Evidence** - panel discussions in regional venues to engage parents and young people to discuss the science and issues around vaccines

Science Week 2018 runs from 11th – 18th November nationwide. The full programme will be available in the coming months on www.sfi.ie.



Ministers encourage communities across Ireland to get involved in what will be the biggest Science Week yet!



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Phibro Animal Health to establish new biotech facility in Sligo, creating up to 150 jobs.



July 5th 2018 – Sligo, Ireland. Phibro Animal Health Corporation (Nasdaq:PAHC) today announced plans to establish a biotech facility producing a range of innovative animal health vaccines on the IDA Ireland Finisklin Business Park in Sligo, creating up to 150 jobs over 5 years.

The project is supported by the Irish Government through IDA Ireland.

Phibro develops, manufactures and markets a broad line of animal health and nutrition products for poultry, swine, cattle, dairy and aquaculture customers around the globe. The company had \$764 million in annual sales in over 65 countries during its most recent fiscal year and employs over 1,400 people globally. Phibro is a publicly traded company headquartered in Teaneck, New Jersey, United States.

The Sligo plant will be the company's first biologicals manufacturing location in Europe and will allow Phibro to expand its presence in Europe.

The new manufacturing facility will initially focus on producing Phibro's innovative line of vaccines for the treatment of a range of poultry diseases for sales globally. In the future, Phibro expects to expand production to include vaccines for livestock and aquaculture.

Making the announcement in Sligo today, **Minister for Agriculture, Food and the Marine, Michael Creed T.D.**, said, "This significant investment by Phibro is a great vote of confidence in Sligo, and will offer even more opportunities for local residents and communities to grow and thrive. It further strengthens Ireland's Life Sciences capability in the North West and builds on a series of new IDA projects announced for Sligo and elsewhere in the region over recent times. The Government is tirelessly working to achieve job creation in locations which are away from the main cities, and this new biotech facility in Sligo is testament that the policy is working."

Welcoming the announcement, **Minister for Business, Enterprise & Innovation, Heather Humphreys TD**, said, “I was delighted to see Phibro announce that their first biologicals manufacturing location in Europe will be in Sligo, creating up to 150 highly skilled jobs. This has been a fantastic few weeks for Sligo with announcements from Abtran, E3 Retail, and Live Tiles, showing how the county is benefiting from both indigenous and FDI investment. This is another example of the success of our commitment under the Regional Action Plans for Jobs to ensure we have the right conditions in place to encourage job creation in regional locations.”

Speaking at today’s announcement, **Jack Bendheim, Phibro’s Chairman, President and Chief Executive Officer**, commented, “The creation of Phibro Ireland marks an important milestone in our development as a leading global player in the animal health biological market. The winning combination of Phibro’s expertise in the development and manufacture of biological products, the driven and experienced workforce available in the Sligo area, and the strong support of the IDA makes us very excited about the potential of the Sligo facility.”

Speaking at today’s announcement in Sligo, **IDA Ireland’s Executive Director Mary Buckley** said, “This announcement of a new company into Ireland, which is a global leader in diversified animal health and nutrition, is great news for Sligo and the North West Region. IDA is committed to winning investments for regional locations across Ireland and the North West Border Region is a key area of focus for us. The 150 jobs being created by Phibro will significantly benefit the regional economy. I wish you and your team every success here and will follow your progress with interest.”

The new roles will include management, quality analysis, quality control, regulatory, engineering, operators and maintenance staff. For more information on the new roles email hr.sligo@pahc.com. While not immediately material to Phibro’s business, the company believes Sligo-produced products will meaningfully contribute to financial results over the next 3 to 5 years.

About Phibro

Phibro Animal Health Corporation is a diversified global developer, manufacturer and marketer of a broad range of animal health and mineral nutrition products for use in the production of poultry, swine, cattle, dairy and aquaculture. For further information, please visit www.pahc.com.

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BD Opens new state-of-the-art R&D Facility, Creating 85 New Jobs in Limerick

Minister Pat Breen Officially Opens New Global R&D Centre of Excellence 85 new high-tech positions for Limerick region

Limerick, 11th July 2018 - BD, a leading global medical technology company, today announced the creation of 85 new jobs for the Limerick region. The announcement was made as Minister for Trade, Employment, Business, EU Digital Single Market and Data Protection Pat Breen T.D., officially opened BD's Research Centre Ireland (RCI) in Limerick's National Technology Park. The €21 million investment in BD's new centre of excellence has already seen 100 jobs recruited for the facility in 2017 and early 2018. The announcement of these 85 additional positions will bring the total number of employees across BD's two Limerick sites to 285.

The project is supported by the Department of Jobs, Enterprise & Innovation through IDA Ireland.

BD was founded in 1897 and has had a presence in Ireland since 1964. The company provides solutions that help advance medical research and genomics, enhance the diagnosis of infectious disease and cancer, improve medication management and infection prevention and support the management of diabetes. BD's new Research Centre Ireland (RCI) is focused on product and software development, clinical research instrumentation and prototype development, expanding the existing community of Life Sciences companies in the region.

The 85 new roles are for a variety of highly skilled positions such as software, hardware and systems engineering, scientists, and technical management, with the majority being brought on-stream by the end of this year.

Speaking at the announcement, **Dennis Gilbert, Senior Vice President for R&D** at BD said that the new roles are critical to BD's long term global growth plan, "The opening of BD's R&D Centre of Excellence in Limerick today marks a new era for BD and the Life Sciences community in Ireland. This new centre has been established to serve as a global R&D hub for our businesses and is key to our long-term strategic growth plans. BD's decision to open our global research centre here in Limerick is based on the region's highly skilled talent, our strong relationships with local universities and Limerick's stellar reputation as an important Life Sciences hub. Announcing 85 additional new jobs today further strengthens our

commitment to investing in Ireland, and we will be able to further accelerate our recruitment efforts here to continue to build on our expertise and capabilities.”

Officially opening the new facility today, **Minister Breen** said “This announcement by BD is a vote of confidence in the Mid-West region as a destination for high-end medical technology companies. It will provide excellent employment opportunities and contribute greatly to the local economy of the region. I would like to wish BD continued success and assure them of our ongoing support.”

Mary Buckley, Executive Director, IDA said, “This significant investment by BD in its new R&D Centre of Excellence in Limerick today is a very welcome addition to the Life Sciences sector in the Mid-West region. Winning investment for regional locations is a key focus for IDA Ireland and this project is an excellent one to secure for this region.”

BD has invested significantly in Irish Jobs and the Irish economy over the last 50 years since it established its first manufacturing site in Drogheda. BD currently employs more than 1,300 employees , in Ireland across Drogheda, Dun Laoghaire and its two sites in Limerick.

About BD

BD is one of the largest global medical technology companies in the world and is advancing the world of health by improving medical discovery, diagnostics and the delivery of care. The company supports the heroes on the frontlines of health care by developing innovative technology, services and solutions that help advance both clinical therapy for patients and clinical process for health care providers. BD and its 65,000 employees have a passion and commitment to help improve patient outcomes, improve the safety and efficiency of clinicians’ care delivery process, enable laboratory scientists to better diagnose disease and advance researchers’ capabilities to develop the next generation of diagnostics and therapeutics. BD has a presence in virtually every country and partners with organizations around the world to address some of the most challenging global health issues. By working in close collaboration with customers, BD can help enhance outcomes, lower costs, increase efficiencies, improve safety and expand access to health care. In 2017, BD welcomed C. R. Bard and its products into the BD family. For more information on BD, please visit [bd.com](https://www.bdcareers.ie). For more information on BD Ireland. Visit <https://www.bdcareers.ie>

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 Agilent Technologies

Henkel opens major European hub for 3D Printing technology in Tallaght

Press Release 25 Jun 2018

Company reiterates commitment to Ireland with an €18million, four-year investment plan

Dublin, 25 June 2018 – Henkel Ireland today announced the opening of its new Innovation and Interaction Centre for Additive Manufacturing (3D Printing) in Tallaght.

The Centre, which is the first in a new generation of industrial customer centres, will become Henkel's European regional hub for technology presentations, demonstrations, training, testing as well as customer service for 3D Printing solutions.

Henkel, which also owns beauty care and laundry & home care divisions, is the world's largest manufacturer of adhesives, sealants and functional coatings and, in Dublin, has a significant manufacturing and R&D operation for a wide range of adhesive technologies, serving a global market.

Henkel's Additive Manufacturing project, which is supported by the Irish Government through IDA Ireland, is based on a 4-year investment plan with an estimated maximum spend of about €18million to expand the company's capabilities in R&D, application and product development. The company aims to support a team of highly skilled scientists and engineers who will develop new advanced materials for use in a broad range of industrial manufacturing.

Officiating at the opening event, **Minister of State at the Department of Housing, Planning and Local Government, Damien English TD**, said: *"The opening of this new Additive Manufacturing centre of excellence further consolidates Henkel's operations in Ireland where the company already employs 400 people across three sites. The company's choice of Dublin for this European hub for 3D Printing technology is a clear endorsement of the innovation ecosystem in Ireland. We very much appreciate Henkel's investment and the quality jobs being provided, which will help put Ireland at the forefront of a new and exciting chapter in manufacturing".*

Speaking at the opening of the Innovation and Interaction Centre, **Dr Michael Todd, Global Head of Innovation at Henkel Adhesive Technologies**, said: *"The opening of the Innovation and Interaction Centre strengthens Henkel's operations in Ireland and will bring customers and strategic partners to what is now an extremely important European regional hub for the business. Additive Manufacturing has the potential to change value chains and businesses across many industries. As such, Henkel is convinced that this is the market to get involved with next. Henkel's Tallaght site was chosen as the regional hub for Europe due to the existing team's leading R&D knowledge and experience in resins and other adhesive technologies; and because of the site's proximity to Henkel Ireland's production and R&D bases."*

Henkel Technology Centre Director, Dr Matthew Holloway, said: *"Additive Manufacturing will be a significant disruptor to future manufacturing methodologies. The decision to locate this centre in Dublin demonstrates Henkel's commitment to Ireland and cements its position as a vital European hub for the*

global business. At Henkel Ireland, we have a proven track record of developing world-class adhesives and, as such, we look forward to focusing our expertise on creating new chemistries and technologies for 3D Printing. In addition, the cluster of leading med-tech, aerospace and other industries using 3D printing, made Ireland a natural choice to create a regional hub for Europe.”

Executive Director of IDA Ireland, Mary Buckley, said: *“Henkel is a significant employer in Ireland employing 400 people and is a long-standing IDA client. Additive Manufacturing will be of crucial importance globally, with its potential applications in industries such as healthcare and automotive. It presents a fantastic opportunity for Ireland to enhance our global reputation in R&D in novel technologies so that we continue to be at the heart of delivering innovative new products to market.”*

Through its strategic partnerships with global technology leaders, Henkel is driving adoption in the rapidly growing market for additive manufacturing beyond prototyping to final parts production, and offers novel materials, specialised equipment and a variety of solutions for post-processing.

In addition to Henkel’s Innovation and Interaction Centre in Ireland, two further regional centres are also currently in development, one in Rocky Hill (for North America) and another in Shanghai (for Asia).

The initial stage of the Innovation and Interaction Centre comprises 700sqm of laboratories, customer service offices, meeting rooms and 3D printing facilities. Henkel plans to further expand the centre to 2000sqm to include 5 additional laboratories, workstations & meeting spaces over the next 2 years.

The Centre is equipped with Carbon and HP printers in addition to specialised Henkel equipment, technology and devices for Additive Manufacturing. The Innovation and Interaction Centre is a hub for training and customer service from sectors as diverse as med tech, automotive and manufacturing will be able to discover the world-leading solutions Henkel offers.

About Henkel

Henkel operates worldwide with leading brands and technologies in three business units: Laundry & Home Care, Beauty Care and Adhesive Technologies. Every day, millions of customers and consumers use products from Henkel with brands such as Loctite, Sellotape and UniBond; Bloo, Dylon and Colour Catcher; Schwarzkopf, LIVE, Got2B and Right Guard.

In Ireland, Henkel employees circa 400 staff and has three sites; Tallaght (Adhesives R&D, production, bottling & packaging), Ballyfermot (adhesives manufacturing) & Little Island, Cork (DYLON Colour Catcher manufacturing).

In 2017, Henkel reported global sales of €20bn and an adjusted operating profit of €3.5bn. Its shares are listed in the German stock index DAX.

Quidel Corporation supports global growth with new European facility in Galway.

PRESS RELEASE 25 JUN 2018

GALWAY - Quidel Corporation (NASDAQ: QDEL) a provider of rapid diagnostic testing solutions, cellular-based virology assays and molecular diagnostic systems, celebrated opening its new Business Service Centre in Galway city today. The celebration marks the company's first expansion into international facilities.

The new office will support Quidel's growing international business, a portfolio that has experienced substantial growth due to the recent acquisition of Alere's Triage® business.

New jobs created at the Galway facility include roles in Finance, Human Resources, Customer, Service, Technical Support, Sales, IT and Legal. Hiring is ramping up quickly as Quidel works with the IDA in recruiting local talent to support its new international business, targeting the creation of 75 jobs over five years.

The project is supported by the Irish Government through IDA Ireland.

The company, headquartered in San Diego, California, employs approximately 1,200 people in operations in North America, Europe, Latin America, Japan, and other parts of Asia.

"Since our acquisition of Alere's Triage business in October, Quidel's international presence has increased markedly, and we're investing throughout the world to support our international growth, especially in the European region," said Douglas Bryant, Quidel Corporation's President and CEO. "We are proud to partner with Martin Shanahan and IDA Ireland to bring jobs to Galway, and are pleased that our new Galway facility will serve as the headquarters for our European commercial operations."

Speaking at the company's office opening event, Mayor Niall McNelis said: "I'm delighted to join with you to celebrate the official opening of your new offices. It reaffirms Quidel's commitment to Galway and the West region. As the hub for your international business, this new Business Service Centre represents an exciting and progressive milestone in your growth. I wish you, and all who come to work here, every success."

IDA Ireland's Head of Life Sciences Michael Lohan said: "Having announced your plans in February to establish headquarters here in Galway for your European commercial operations, I'm delighted to be here today to mark the opening of your new permanent offices in the heart of the city. We are delighted to welcome you as a new name investor in the innovative medical device space to Galway and Ireland. The activities and roles you are creating, and I understand a number of staff have already been recruited, are high value service roles which will greatly benefit the economy of the region."

Quidel is excited to partner with Collins McNicholas on the recruiting efforts for the Galway business centre. For more information on open roles go to: www.collinsmcnicholas.ie/quidel

About the Company

Quidel Corporation serves to enhance the health and well-being of people around the globe through the development of diagnostic solutions that can lead to improved patient outcomes and provide economic benefits to the healthcare system. Marketed under the Sofia®, QuickVue®, D3® Direct Detection, Thyretain®, Triage® and InflammDry® leading brand names, as well as under the new Solana®, AmpliVue® and Lyra® molecular diagnostic brands, Quidel's products aid in the detection and diagnosis of many critical diseases and conditions, including, among others, influenza, respiratory syncytial virus, Strep A, herpes, pregnancy, thyroid disease and fecal occult blood. Quidel's recently acquired Triage® system of tests comprises a comprehensive test menu that provides rapid, cost-effective treatment decisions at the point-of-care (POC), offering a diverse immunoassay menu in a variety of tests to provide healthcare providers with diagnostic answers for quantitative BNP, CK-MB, d-dimer, myoglobin, troponin I and qualitative TOX Drug Screen. Quidel's research and development engine is also developing a continuum of diagnostic solutions from advanced immunoassay to molecular diagnostic tests to further improve the quality of healthcare in physicians' offices, hospital and reference laboratories, and other alternate sites, like urgent care centres and retail clinics, where healthcare is provided.

For more information about Quidel's comprehensive product portfolio, visit www.quidel.com

IDA Ireland

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About Sigma-Aldrich: Sigma-Aldrich is a leading Life Science and High Technology company whose biochemical, organic chemical products, kits and services are used in scientific research, including genomic and proteomic research, biotechnology, pharmaceutical development, the diagnosis of disease and as key components in pharmaceutical, diagnostics and high technology manufacturing.

Sigma-Aldrich customers include more than 1.3 million scientists and technologists in life science companies, university and government institutions, hospitals and industry. The Company operates in 35 countries and has nearly 9,000 employees whose objective is to provide excellent service worldwide.

Sigma-Aldrich is committed to accelerating customer success through innovation and leadership in Life Science and High Technology.

For more information about Sigma-Aldrich, please visit its website at www.sigma-aldrich.com

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Export sales by Enterprise Ireland client companies up 7 per cent in 2017 to €22.71bn, hitting new record

12th July, 2018



Pictured at the announcement of Enterprise Ireland's Export Results 2017 are from left, David Moffitt from Kayfoam, an Enterprise Ireland client company, with, Julie Sinnamon, CEO, Enterprise Ireland, Terence O'Rourke, Chairman, Enterprise Ireland and Minister for Business, Enterprise and Innovation, Heather Humphreys T.D.

Survey of Irish companies finds 85 per cent taking action on Brexit

Enterprise Ireland launches new Operational Excellence Offer, a Brexit measure to improve exporters' competitiveness

Watch Enterprise Ireland's new Global Ambition video here

Enterprise Ireland, the state agency responsible for helping Irish companies export to international markets, has announced that its clients recorded export sales of €22.71bn in 2017, representing a 7 per cent increase on 2016.

This is the highest level of export sales recorded in the history of the agency and the eighth-consecutive year of clients' export growth. In 2017, Enterprise Ireland clients achieved total sales of €44.4bn, up 8 per cent on 2016.

Exports to the Eurozone region, which account for 20 per cent of all exports, saw strong growth of 9 per cent to €4.61bn in 2017. Enterprise Ireland supported 89 Irish companies to export to the Eurozone for the first time in 2017. In addition, close to 300 new contracts were secured for Irish companies in the Eurozone with Enterprise Ireland assistance.

Exports to the UK, the largest market for Irish exports, representing 34 per cent of exports, delivered growth of 4 per cent to €7.62bn.

In tandem with the export results, Enterprise Ireland also released findings of a recent Brexit survey of over 2,400 clients which found that 85 per cent of clients are taking Brexit related actions. The top measures that they are taking are; diversifying their export markets, improving operational competitiveness, strengthening their business in the UK, developing strategic partnerships, improving financial management and investing in R&D.

Additionally, 53% of clients surveyed said that in 2018, Brexit would not change their ability and appetite to invest, while 65% said it would not change their employment plans.

Welcoming today's results, Minister for Business, Enterprise and Innovation, Heather Humphreys TD said: "These export figures by clients of Enterprise Ireland reflect the robustness and success of Irish companies across the globe, who are availing of State supports to be competitive, innovative and market-diversified. While the Irish exporting landscape is strong and we are winning business worldwide, Brexit is the biggest challenge currently facing Irish business. Our officials in Enterprise Ireland are very focused on supporting clients to prepare for a hard Brexit and clearly this work is paying off, so I would urge any homegrown firm not currently tapping into this offering to consider doing so."

Presenting the results today, Julie Sinnamon, Enterprise Ireland CEO said: "Irish companies are achieving international global sales at record levels, following consistent year-on-year growth for the past eight consecutive years. Our target is to achieve export sales of €26bn per annum by 2020 and Enterprise Ireland is strategically focused on supporting clients to achieve this growth and a more diversified export market portfolio. The economic indicators are positive for continued growth, and we are working with the strongest cohort of companies ever, competing and winning in more diversified export markets than ever before."

On Brexit, Julie Sinnamon said: "The UK market which is, and will remain, our largest market, performed well in 2017, delivering growth of 4 per cent, despite the prevailing challenges, including volatility and uncertainty. We are working closely with UK dependent clients to help them to trade through the unpredictability and to protect hard-won market share in the UK. With our support, Enterprise Ireland clients are taking the necessary actions to offset the impact and manage the risks posed by Brexit. At the same time, we are progressing with our strategic ambition to expand the Irish export footprint in diversified global markets, reducing overall UK market exposure to one-third by 2020."

Commenting on today's announcement, Minister of State for Trade, Employment, Business, EU Digital Single Market and Data Protection, Pat Breen TD said: "The figures released by the agency show that the strongest growth globally was in food exports, which totaled €11.58bn, up 10 per cent on 2016, while the combined category of lifesciences, engineering, paper, print & packaging, electronics and cleantech saw exports of €4.05bn, up 7 per cent on 2016. In addition to strong growth across the Eurozone and the UK, exports also performed strongly in other territories, with 7 per cent growth in exports to the US and Canada to €3.96bn, while exports to the Asia Pacific region grew by 9 per cent to €1.97bn. Today's figures demonstrate the strong opportunities for international trade for ambitious Irish companies and that the efforts by Enterprise Ireland in encouraging companies to diversify their export markets and improve competitiveness is working."

To further strengthen the supports to Irish businesses in the face of Brexit, Enterprise Ireland has today launched a new Operational Excellence Offer to enable Irish companies trading internationally to develop or transform their wider business in order to compete more effectively. The Operational Excellence Offer covers funding, capability building and capital investment offers for companies trading internationally, to incentivise companies to address their needs across key aspects of their value chain and business operations; from supply chain management, internal business and production operations, and through to logistics and distribution networks.

Enterprise Ireland today also launched a new Global Ambition website www.globalambition.ie providing a focal point for resources, supports and international market access information for Irish exporters.

Ireland Rises to 9th in the European Innovation Scoreboard

by admin June 28



Minister for Business, Enterprise and Innovation, Heather Humphreys, TD has welcomed Ireland's strong innovation performance reported in the European Commission's European Innovation Scoreboard 2018. The annual Innovation Scoreboard provides a comparative assessment of the research and innovation performance of the EU Member States and the relative strengths and weaknesses of their research and innovation systems.

Minister Heather Humphreys said: "I am delighted to note the encouraging news that Ireland has risen to 9th place, and continues to be recognised as a Strong Innovator in this year's European Innovation Scoreboard. Innovation is a cornerstone of our overall economic development policy. We know that it is key to maintaining competitiveness for Ireland in global markets, and for providing jobs and sustainable growth in our economy. As committed to in our Innovation 2020 Strategy, the Government's vision is for Ireland to become a Global Innovation Leader."

Performance in innovation is assessed using 27 indicators across 10 Innovation dimensions. This year, Ireland tops three of these dimensions.

Ireland remains the overall leader in the Innovators dimension which demonstrates how innovative Irish SMEs are as European leaders in product, process and marketing innovation. Ireland has also retained first place in the Employment impacts dimension which captures employment in knowledge intensive activities and in fast-growing sectors.

Ireland has also gained one place to become the overall leader in Sales impacts. This dimension measures the economic impact of innovation, including exports of medium and high-tech products, knowledge-intensive services as well as sales due to innovation activities.

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AllinAll Ingredients Officially Opens New €5 Million Facility in Dublin



June 19 by admin

An Taoiseach Leo Varadkar, TD (pictured above left), has officially opened AllinAll Ingredient's new state-of-the-art manufacturing and Research and Development facility in Rosemount, Dublin. The company, which has been in the food industry for over 20 years, develops and manufactures ingredients, sauces and blends for the processed food market. Its R&D lead team have developed over 500 new products so far this year and last year it developed over 900.

Previously based in Parkwest, Dublin, AllinAll Ingredient's new facility at Rosemount includes a Pilot Plant which provides the infrastructure and scientific equipment which food scientists use to trial, develop and demonstrate new products. The new facility will support the company's growth ambitions as it looks to further grow its sales in Eastern Europe and the Middle East as well as seek new export markets by linking up with new Distributors.

The growth trajectory which AllinAll Ingredients has been on has been substantial, doubling its employee numbers over the last four years to forty, and the expanded facilities will provide for an expanded workforce as the company plans to hire a further twenty people over the next four years.

An Taoiseach Leo Varadkar, TD, said: "It is very encouraging to see cutting edge food research and innovation being developed in Dublin West. AllinAll Ingredients has been at the forefront of innovation in the food sector and the investment in this new state of the art facility should help the company to expand

into more new markets in the years ahead. The new facility, located beside Dublin Airport, will also welcome international food scientists seeking to make improvements, innovations and develop products of the future. The Government is prioritising Research and Development through Innovation 2020, our strategy for R&D, science and innovation and we recently launched a new €500m Disruptive Technologies to drive innovation and build new markets for Irish businesses. I wish all of the staff at AllinAll Ingredients the very best with this exciting new venture.”

Julie Sinnamon, CEO, Enterprise Ireland, said: “Research and development drives innovation which is a proven source of advantage and instrumental in helping companies compete internationally. Enterprise Ireland has worked closely with AllinAll Ingredients as the company has evolved over the years and we wish them every success with their ambitious plans for significant growth in export markets.”

Commenting on the significant investment, Daniel Hickey (pictured above right), Chief Executive Officer at AllinAll Ingredients, said: “AllinAll Ingredients has been at the cutting edge of the food ingredients industry for many years and we are proud to open our new manufacturing and R&D facility in Dublin, which will allow us grow and expand our business in Ireland and around the world.”

“As people’s tastes and food needs change, we need to change with them. Our new R&D facility and Pilot Plant are an important part of the new operation as it allows us trial and demonstrate new ideas and solutions for customers. We will over the coming months not only be trialling and developing new products for our customers, but we will also welcome food scientists from at home and abroad who will be coming to jointly work with us and use our facilities.”



Photographer – Paul Sherwood paul@sherwood.ie 087 230 9096
All In All ingredients, Ballycoolin, Dublin. June 2018

These newly designed laboratories provide the state-of-the-art space in which AllinAll’s R&D Food Scientists can engage in new product development for key clients in the processed meat, ready meal, snacks and bakery sectors. A key benefit is the ability to conduct scaled-up product trials in partnership with customers in the new pilot plant.

Daniel Hickey added: “This facility provides us with the capacity to create new products faster and with greater confidence launch them on the market. It’s also more cost-effective as the scale of the trial work is smaller than if the customer used their own full scale production plant. The blending capacity of the Rosemount plant is three-times the size of the old plant, with a larger range of blending equipment

available too. This means we can be far more flexible and provide a greater speed of service than existed before. At AllinAll, we see our role as helping our customers to stay current, in whatever way they deem right for them and their business while delivering a service that observes the highest quality standards which is guaranteed by the new plant being granted the BRC AA accreditation.”

“With our new plant located less than fifteen minutes from Dublin International Airport which has direct air links throughout Europe, the Middle East and North America we are uniquely well-located to be able to work closely with our customers at home and abroad and develop the partnership relationship that can deliver for both parties. We can easily and quickly bring in technologists from our international customers here to develop the solutions they need, undertaking full trial and verification work. We can also get our Technologists go abroad to visit current and potential customers and in partnership develop products that deliver for our customers a bespoke solution that when used by them in their production process and gives them the end product they wish to sell on to their customer.”

AllinAll Ingredients has signed up to the Origin Green programme promoted by Bord Bia. The overall ambition of the Origin Green programme is that farms and food manufacturing businesses throughout Ireland sign up to the sustainability agenda, making measurable commitments to producing in a sustainable manner, with progress independently assessed and verified. AllinAll has committed to deliver on sustainability targets covering a number of areas including raw materials sourcing, manufacturing processes and operations and social sustainability.

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College Group to Construct New €10 Million Biofuel Facility in County Meath



June 21

College Group is to invest €10 million in building a new renewable energy facility producing biofuel from used cooking oil and animal fats in north County Meath. The investment is supported by the Irish government through Enterprise Ireland. The new 25 million litre purpose-built plant will be set on a 47.5 acre site and will be the first of its type in Europe. Additionally, the process itself is innovative and efficient using minimal energy and recovering any waste energy to be reused within the facility. College Group currently operate two plants at Monery, County Cavan and Nobber, County Meath.

College Group has invested 5 years of R&D in developing new methods for the production process of biofuel, some of which are being used for the first time in the industry. In particular, a fractional distillation system will be employed to ensure that the biofuel produced will be of the highest quality and free from environmental contaminants.

Speaking at the sod-turning event, Minister for Business, Enterprise and Innovation, Heather Humphreys TD said: “Supporting job creation in the regions is a priority for the Government and the investment in this new biofuel facility producing a higher grade biodiesel product is a hugely positive development for Nobber and the surrounding area. The company’s long-term commitment to the locality will result in the creation of 25 new jobs and will provide a boost to other local businesses and the wider region. Successful investment in R&D has resulted in innovative production methods, which supports the company’s global ambition, giving it the edge in international markets.”

John Gilroy, Chief Executive of College Group, said that the plant will assist Ireland in reducing its carbon emissions and meeting its EU targets for 2020. “This plant will allow us to help Ireland achieve and exceed European requirements for renewable energy. We will take waste products including used cooking oil and animal fat and produce clean, green, sustainable fuel. The renewable fuels produced are part of the strategy for combatting climate change.

“Using biofuel produced from animal fat, a renewable product, will result in an 85% lower green-house gas emission compared with the traditional fossil diesel. Individually and collectively, we all have a responsibility to improve our carbon footprint and this carbon-neutral fuel is critical in helping us to achieve that. Additionally, it will help Ireland to avoid the imposition of substantial penalties by the EU.”

Under NORA, each member state must ensure that the renewable energy share in all forms of transport is at least 10% of the final consumption by 2020. In Ireland in 2017, 226 million litres of renewable fuel were used, but Ireland only produced about 22 million litres. 240 million litres will be required to fulfill Ireland’s obligation for the 2020 deadline highlighting the significant shortfall in biofuel production that exists in Ireland.

The College Group Chief Executive believes that the new facility will put Ireland at the forefront of renewable energy production. “This facility leads the way for other biofuel companies in Europe and worldwide by implementing extensive process improvements, state-of-the-art engineering and energy efficiency measures as well as using artificial intelligence to monitor production and performance. Economically and environmentally this new facility puts Ireland at the forefront of renewable energy production.”

Orla Battersby, Manager, Food Division, Enterprise Ireland, said: “College Proteins’ commitment to innovation has been instrumental in the growth of the business over the last 29 years and this new investment of €10 million in a bio-diesel plant in Nobber, County Meath is the next step in the company’s business development. Supporting innovation is a key priority for Enterprise Ireland as a driver of export growth and we wish the team success as they continue to innovate, grow and scale internationally.”

Job Opportunities

90 jobs will be created during construction and commissioning of the plant with 25 long-term job opportunities for graduates in chemical engineering, mechanical engineering, health and safety and environmental as well as administration and financial roles. College Group believe that 50 indirect long-term jobs will be created in transport, support services and additional spin-off to the local community.

“This is an opportunity for highly-skilled people from local and surrounding areas to find employment close to home in their rural communities. It will help achieve targets set out in the North East Action Plan for Jobs. Recruitment will commence in November 2018,” added John Gilroy.

The company upholds a strong ethos of employing local people and giving back to the community. They are currently the main sponsors of Kingscourt Harps FC, Wolfstones Ladies GAA and Moynalty GAA, provide a yearly scholarship to O’Carolan College, Nobber to support a graduate through their university studies and have supported the local Friendship Club by provision of iPads, the locally hosted Feile Peile Na nÓg 2018, Nobber Vintage Club and O’Carolan Harp Festival. Most recently, they have sponsored the Meath Steam Run in aid of Meath Palliative Care and Hospice Homecare.

CAPTION:

Minister Humphreys turns a royal sod at the new College Group, Bio Fuel facility in Nobber, Co. Meath much to the delight of CEO John Gilroy.

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Public Consultation For Ireland's Space Strategy For Enterprise

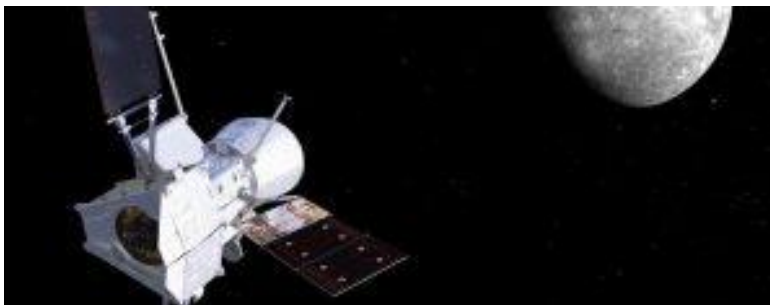


July 06

Minister of State for Training, Skills, Innovation, Research and Development, John Halligan TD, has published a consultation document for Ireland's Space Strategy for Enterprise. The consultation document seeks input from stakeholders on issues to be considered in the development of Ireland's Space Strategy for Enterprise. The strategy will set out how Ireland will maximise on its investment in space within the evolving global space market, which is expanding to present numerous opportunities for private industry and researchers. The consultation is open for input until the 27th August 2018.

In recognising the expanding global space sector, Enterprise 2025, Ireland's National Enterprise Policy, identified the space sector as a new area of opportunity for Ireland. Furthermore, the National Development Plan called out a New Space Technologies Programme as a Strategic Investment Priority, 2018–2027. In order to seize the opportunities presented by the growing global space sector, the Department of Business, Enterprise and Innovation and Enterprise Ireland are currently developing a strategy with the key objective, to develop a strong and sustainable space industry in Ireland and to optimise and grow the economic return from Ireland's investment in space. Ireland primarily invests in space through its membership of the European Space Agency (ESA) and the European Union space programmes, Copernicus, Galileo and also, Horizon 2020.

Speaking about the consultation and strategy, Minister Halligan said: "On foot of the expanding space sector, the time is now ripe for Ireland to develop a Space Strategy for Enterprise. The strategy will set out how Ireland can maximise the benefit of its investment in space for industry, researchers, citizens and the wider economy. The consultation process will inform the final strategy and help determine what actions the Government can take to develop a strong and sustainable sector in Ireland.



“Companies involved in the space sector in Ireland increasingly come from a broad range of disciplines and include companies without a conventional space background. A growing number of Irish companies, including SMEs and start-up companies, are winning contracts with the European Space Agency. I would strongly encourage all companies to read the consultation paper and consider its relevance to them.”

In recent years the global space sector has been undergoing a major change, as the global space market has expanded from largely Government-driven projects to increased participation by private industry, often referred to as ‘NewSpace’. This trend is being driven by several factors, such as the increasing demand for communication services, location information and space-derived data. ‘New Space’ has opened up opportunities for private enterprises, research centres and entrepreneurs working in many sectors not traditionally associated with space, such as data analytics, software, data systems and advanced materials as well as the more obvious sectors, including electronics, opto-electronics, telecommunications geo-science and astrophysics. With support from ESA, and also Enterprise Ireland, which supports Irish companies to successfully bid for ESA contracts, Irish industry are progressively establishing themselves in this sector and are increasingly winning contracts to develop technologies, products and services for the commercial space market.

The consultation process will help to identify the opportunities and challenges within the evolving international space sector, and importantly, what action can be taken to seize these opportunities and address the challenges. The purpose of the consultation document is to seek input from interested parties on issues for consideration in the development of the National Space Strategy for Enterprise.

Stakeholders can access the consultation document, ‘Consultation Paper for the National Space Strategy for Enterprise, 2019 – 2025’ at: <https://dbei.gov.ie/en/Consultations/Consultation-Paper-National-Space-Strategy-for-Enterprise-2019-2025.html> and are requested to submit their response, using the consultation response form, by 27th August 2018 to Space@dbei.gov.ie.

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