IChemE Medals and Prize Winners 2023

Medal	Winner	Winning paper / supporting information
Ambassador Prize The Ambassador Prize is awarded to a volunteer who has made exceptional contributions, likely within an IChemE Special Interest Group (SIG), Member Group or as an ambassador for the Institution and/or profession more widely. This prize is typically awarded in recognition of a sustained period of work on a short to medium term project.	Dr Pablo Garcia - Trinanes	Pablo Garcia-Trinanes has been an active member of IChemE since 2011, participating as Chair in the IChemE London and South East Member Group and Vice Chair in the Particle Technology SIG. Pablo is also a member of the Society Of Chemical Industry where he has participated as an academic member and a mentor for early career researchers. Pablo has been involved in bringing the discipline of chemical engineering to the University of Greenwich, actively involved in creating and establishing a new Chemical Engineering Degree including BEng, MEng, DA and MSc.
Clean Energy Medal The Clean Energy Medal is awarded to an individual in recognition of outstanding service in the field of clean energy, for example mitigation of climate change, reduction of pollutant emission and reducing utilisation of non-renewable feedstocks.	Dr Rose Amal	Professor Amal is awarded this Medal for the breadth of her contributions to academic research and to industrial deployment. She has run numerous multimillion Australian dollar research institutes and moreover has acted as a mentor to numerous students and Post-doctoral Research Associates (PDRAs). Professor Amal is highly respected nationally and internationally as an exceptional chemical engineer. She is an influential leader in both the discipline and tertiary sector, is a passionate and highly respected mentor, and an outstanding role model for young women in science and engineering.
Davis Medal The Davis Medal honours George E. Davis, the founding father of the profession and is awarded to an eminent individual who has rendered exceptional service to chemical engineering. It is given not more frequently than every three years.	Professor Adisa Azapagic	Professor Adisa Azapagic is pre-eminent for her work on sustainable production and consumption and is particularly known for her leadership in, and contributions to, carbon footprinting, life cycle assessment and sustainability.
Davidson Medal The Davidson Medal recognises individuals who have been activementors in industry or academia.	Professor Alexander F Routh	Alexander has provided mentoring support for over twenty years which has had a significant impact across the student population and community service, promoting the careers of undergraduate and postgraduate students as well as post-doctoral researchers. Over the twenty years, Alexander has supervised 21 PhD students to graduation and currently has a further ten PhD students in his research group, as well as supervising 12 postdoctoral researchers with many going into academic posts, and 65 final year undergraduate research projects.

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Donald Medal The Donald Medal is awarded to an individual for outstanding services in biochemical engineering and recognises outstanding service and innovation within the field.	Professor Cleo Kontoravdi	Professor Kontoravdi has made a huge impact in the field of biochemical engineering with sustained contributions in research, teaching and mentorship. Her multidisciplinary work combines experimental and computational tools to address challenges in therapeutic protein manufacturing and has been widely adopted in industry. She serves as an ambassador for chemical engineering in the media and a role model for women of all ages including inspiring school children to STEM careers.
Greene Medal The Greene medal is awarded every year to an individual who has made a highly commendable long-term contribution to the progress of IChemE.	The late John O'Shea	The late John O'Shea held a variety of volunteering roles over the years: Professional Formation Forum (PFF) Member, Virtual Election Panel (VEP) Registrar, university assessor, Accredited Company Training Schemes (ACTS) assessor, Appeals Panel member to list a few. Were it not for John's hard work, IChemE would have struggled to maintain its throughput of membership decisions. As a university academic and former head of department, John was a key accreditation assessor, providing valuable advice for the Education and Accreditation Forum (EAF) to support the development of documentation and processes.
Geldart Medal The Geldart Medal recognises a major contribution to research in the area of particle technology. The medal is awarded to one or more individuals who have made a significant recent contribution to research in particle technology. This will be recognised through scientific advancements widely acknowledged within the community and high impact findings recognised outside the particle technology community.	Professor Mojtaba Ghadiri	Professor Mojtaba Ghadiri is awarded the Geldart Medal for their outstanding contribution to Particle Technology. By looking at the microstructure of particulate solids and the micromechanics of their interactions in process equipment, Professor Ghadiri's work has influenced the performance of the processes and product characteristics.
Guggenheim Medal The Guggenheim Medal recognises a major contribution to research in the area of thermodynamics and complex fluids.	Professor Amparo Galindo	Professor Amparo Galindo is an outstanding academic who has graduated more than 30 PhD students so far and develops and applies various aspects of the SAFT EOS to solve practical problems involving complex systems such as electrolytes, pharmaceuticals and multi-component mixtures. The high positive impact of this research has been demonstrated in the energy, chemicals, and pharmaceuticals industrial sectors.

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Hanson Medal The Hanson medal is awarded to the author or authors of the best article to appear in *The Chemical Engineer* magazine each year.	Dame Judith Hackitt	Dame Judith has been awarded the Hanson Medal for her article: *Ethics Series: Did you sleep well?* in *The Chemical Engineer*, May 2022. A thought-provoking and well-written article that draws on personal experience to reflect on the choice between making an expedient decision that people want to hear versus making a decision that allows you to know you have done the right thing when safety of people and the environment are at stake.
Hutchison Medal The Hutchison Medal is awarded for both practical and wide-ranging, philosophical or thought provoking published papers.	Aaron Hicks Matthew Johnston Max Mowbray Maxwell Barton Professor Philip Martin Dongda Zhang (all of University of Manchester) Amanda Lane Dr César Mendoza-Fernández (both of Unilever Research Port Sunlight UK)	These authors have been awarded the Hutchison Medal for their paper: *Digital Chemical Engineering, Volume 1, December 2021, 100003*. The authors apply a two-step approach to reduce data dimensionality and to design soft-sensors using personal care products as an example. They used existing techniques in a new way to give better visualisation and understanding.

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Lees Medal The Lees Medal is awarded to the author, or authors, of the best articleon the topic of safety and loss prevention in an IChemE publication.	Peter Marsh	Peter Marsh has been awarded the Lees Medal for the preparation of the Lessons Learned Database which was highly relevant to IChemE's centenary and the growing need for the passing on of process safety information to the next generation. The database is a valuable resource allowing an engineer to gain a good appreciation of a range of major incidents and allowing for historical knowledge to be readily available.
Macnab Lacey Prize The Macnab-Lacey Prize is awarded to the undergraduate student design project team whose design project submission best shows how chemical engineering practice can contribute to a more sustainable world.	University of Manchester	This year the Prize was awarded to the University of Manchester for their project "*Biobased Acrylic Monomers for Greener Paints and Coatings*". The judges thought the submission was well presented with clear objectives and conclusions. The team used the 12 Green Engineering Principles and sustainability metrics were adopted to calculate the Net Present Value (NPV) of the design and a Life Cycle Analysis (LCA) was performed to look at the carbon footprint.
Morton Medal The Morton Medal is awarded to the individual who has best demonstrated excellence in chemical engineering education. In particular, it looks to recognise the work of outstanding educators as well as 'game changers', and to promulgate best practice in chemical engineering education.	Associate Professor Greg Birkett	Greg Birkett has held leadership roles since 2009. He has set up new BE/ME programs and worked to design new teaching spaces for a new chemical engineering department building in 2020, and was in the leadership group who developed a new sustainability thread. Greg's work formed a case study for an international report on teaching achievement in Engineering Education in Higher Education and Imperial College have tested a curriculum tool (tJM) that Greg developed.
Senior Moulton Medal The Senior Moulton Medal is awarded to the author, or authors, of the most meritorious paper published by IChemE during the last year.	Elysia Lucas Dr Miao Guo Dr Gonzalo Guillen-Gosalbez	The authors were awarded this medal for their paper: *Sustainable Production and Consumption, 2021, 28, 877-892* paper. The authors used linear programming-based multi-objective optimisation to evaluate various scenarios for dietary patterns in the UK. The outcome of the work is potentially life changing and was noted as being important for consideration by people that make decisions at government level.
Junior Moulton Medal The Junior Moulton Medal follows the same criteria but recognises thebest author, or co-author, who has graduated within the last ten years (excluding career breaks) at the time of submission of the paper.	Catherine Azzaro-Pantel Martial Madoumier Geneviève Gésan-Guiziou	The authors were awarded this medal for their paper: *Food and Bioproducts Processing 2022, 131, 40-59*, for development of an eco-design framework for food manufacturing including process flow sheeting and multiple-criteria decision-making. The paper looks at a set of specific problems that are experienced in food processing that differ to challenges faced in chemical processing in general.

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Nicklin Medal The Nicklin Medal is an early careers award and was introduced in 2014 to recognise talented chemical engineering researchers. Nominees must, at the time of the awards nomination deadline, have no more than ten years postgraduate research experience and should have produced international quality research outputs.	Dr Yuval Elani	Dr Elani has established the area of Chemical Synthetic Biology as an emerging research discipline. Instead of re-designing cellular systems using traditional genetic and metabolic engineering techniques, Yuval has pioneered technologies for bottom-up construction of synthetic cells using biomolecular building blocks. Yuval is demonstrating impact via multiple collaborations. Yuval's technologies have pushed the frontiers of the research area and redefined the state of the art, leading to a host of awards and high-profile papers in recognition of this.
Sargent Medal The medal is awarded to an individual who has made a significant recent contribution to research into computer-aided product and process engineering. The contribution could encompass, but need not be limited to, a concept that has promoted much interest, the solution of an unsolved problem, new methods/tools leading to innovative processes/products, or a significant advance of the state of the art within the area of process systems engineering.	Professor Sandro Macchietto	Professor Macchietto is an extensive researcher in chemical engineering with innovative methods for simulation, design, control and optimisation of process systems that are widely applied in industry. He has also launched and managed two successful spin-off companies as well as having a distinguished career as an academic. He is also an advisor to research institutions and a consultant. He combines strategic thinking with a strong sense of implementation, the ability to devise and lead imaginative solutions and bring people together in strategic relations, teams and projects.
Junior Sargent Medal This medal uses the same criteria as above but is reserved for an early career individual.	Joint Award to: Dr Maria Papathanasiou and Alexander W Dowling	This is a joint award this year. Dr Maria Papathanasiou is viewed as one of the top young process system engineers of her generation. She is recognised for her pioneering work and research program on personalised health care systems engineering, with significant contributions in the areas of the CAR T-cell therapies supply chain optimisation, bio-pharmaceutical process development and model-based control and monitoring. Professor Dowling has developed and applied advanced maths programming formulations and tools to the full spectrum of process systems engineering activities, from materials design to the enterprise-wide scale. He has pushed the boundaries of Equation-Oriented Optimisation to solve real-world problems in advanced separations, power generation, energy distribution and carbon capture and sequestration.

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Sharma Medal The Sharma Medal was launched in 2014 and recognises sustained outstanding research contributions in chemical engineering across an individual's career.	Professor Nilay Shah	Professor Nilay Shah is renowned for his leadership in the field of systems approaches to chemical engineering, with a strong emphasis on sustainability, industrial practice and influencing policy makers. Nilay has developed a range of mathematical modelling approaches to solving important industrial problems such as production, optimisation, plant design and industrial decarbonisation, and has applied these to sectors as diverse as hydrogen and vaccine manufacturing.
SIESO Medal The SIESO Medal seeks to raise awareness of process safety among science, business, and engineering students. The medal was launched in 2019 following a donation from SIESO (a society called Shared Information and Experience for Safer Operation) who ceased operations in 2018 and bequeathed the bulk of its reserves to IChemE. The medal will be awarded annually to an individual or group of students for the best presentation of a major accident and the learning outcomes.	University of Bath	The winning team from the University of Bath produced a wooden triptych of the Flixborough incident, showcasing different artistic techniques including Nylon fabric patchwork and a 3-D printed model of the plant. This was accompanied by a video explaining how the triptych was produced and a paper outlining the background of the incident and its relevance to today's process industry. The entry demonstrated a high level of engagement and collaboration. In particular, the panel appreciated that the team was composed of students from a wide background of disciplines – i.e., textiles, robotics, as well as chemical engineering.
Underwood Medal The Underwood Medal is awarded to one or more individuals from academia or industry who are making a significant, sustained contribution to research in the area of separations. The contribution can be, but need not be limited to, the development of the science, engineering or understanding behind one or more separation technologies. Impact of the contribution should be seen to address global challenges in engineering and/or sustainable development.	Professor Liyuan Deng Dr Marius Sandru Distinguished Professor Richard J Spontak	The multinational research team of Professor Liyuan Deng, Dr Marius Sandru, and Professor Richard Spontak represents an industrial-academic partnership that has made a significant and sustained contribution to researching the area of membrane separations. This contribution has helped to advance the research field and solve industrial problems. Their patented gas separation membranes have been commercialized and applied for carbon capture in the power generation and cement industries.

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Warner Medal The Warner Medal is presented to an individual, normally in the early stages of their career, who has shown exceptional promise in the field of sustainable chemical process technology, nuclear technology, combatting climate change, in making chemical engineering more accessible to a wider scientific community and in working with organisations and the public to educate and inform.	Dr Massimiliano Materazzi	Dr Materazzi has made a significant contribution in the sustainability field following on from a very creditworthy PhD thesis and he continues to contribute in the fields of bioenergy and biofuels. With a significant number of quality publications and lecturing commitments his efforts on outreach and mentoring are widely appreciated.