IChemE ADVANCING CHEMICAL ENGINEERING WORLDWIDE

Global AWARDS 2019 IChemE

IChemE Global Awards 2019 Review

Recognising excellence in chemical engineering


IChemE Global Awards
2019
Categories

Outstanding Achievement

The outstanding entry from the IChemE Global Awards across all categories, received the Outstanding Achievement in Chemical and Process Engineering Award 2019.

Birmingham Centre for Energy Storage, University of Birmingham and Jinhe Energy, UK - *The NexGen-TEST Project*

'Wrong-time' generation of electricity from renewables leads to economic and resource losses and wastes clean energy. The NexGen-TEST project led by the Birmingham Centre for Energy Storage, in collaboration with industrial partners across UK and China, addresses this problem. A novel composite phase change material (CPCM) based thermal energy storage technology utilises surplus wind power to store energy as heat for space heating. The technology has been demonstrated as commercially viable at scale at the world's first CPCM based plant in Altay of Xinjiang, China and has significant potential as a low-carbon heating technology in countries with surplus renewable generation.

Sponsored by

ExxonMobil

ExxonMobil Fawley is a refining and petro-chemical plant located on the edge of Southampton Water. Esso Petroleum Co., Ltd and ExxonMobil Chemical Ltd share the site. Fawley refines over 270,000 barrels of crude/day. It is the largest refinery in the UK, representing about 20 percent of the country's refining capacity. The site manufactures a wide range of petroleum products, including liquefied petroleum gas, petrol, diesel, jet fuel, marine fuels, etc.

Fawley chemicals is highly integrated with the refinery and produces about 800,000 tons of petrochemicals annually. It is the major European manufacturer of halobutyl rubber, and is one of the few places in the world to produce pharmaceutical-grade rubber.

Biotechnology

Recognises achievement, innovation and discoveries in the fields of biochemical, bioprocessing, bioengineering, bioenergy, biocatalysis, bioreactor and nanotechnology. Entries should demonstrate existing or potential industrial application, especially in the healthcare, food, agriculture, energy, water and chemical sectors.

CPI, UCB Celltech, Lonza Pharma and Biotech, Horizon Discovery, Sphere Fluidics, and Alcyomics, UK - *Defining and Developing New Generation Medicines*

The BioStreamline collaborative project which brought together complementary assets and cutting-edge expertise from the six partner organisations, across the spectrum of drug discovery and development, with funding from the UK Government's Advanced Manufacturing Supply Chain Initiative (AMSCI). The six partners were Lonza Pharma & Biotech, UCB Celltech, Sphere Fluidics, Horizon Discovery Group (Horizon), Alcyomics and CPI.

The project has been very successful and a similar approach could be used with other therapeutics, such as viral vectors, which are rapidly emerging as a major therapeutic area.

Finalists

- CPI, UCB Celltech, Lonza Pharma and Biotech, Horizon Discovery, Sphere Fluidics, and Alcyomics, UK
  Defining and Developing New Generation Medicines
- Institute of Biological Sciences, University of Malaya, Malaysia
  Co-cultivation of Microalgae-bacteria for Wastewater Treatment
- Malaysian Pepper Board, Malaysia
  Bio-pepper Enhancer
- National University of Singapore
  Microbes Converting Polymerized Sugars to Chemicals
- Proklean Technologies, India
  Next Generation Biochemicals Using Probiotics
- University College London, UK
  Bioprocess Engineering Leadership Centre

Sponsored by

WSP is one of the world's leading engineering and professional services consultancies. With over 48,000 talented people across 40 countries, we engineer projects that will help our clients and their societies grow for years to come.

With a rich understanding of industrial processes and multi-disciplinary design expertise, we plan, design and build new plants and optimise the production of existing facilities. Each of our sector-specific solutions is designed with a sustainable future in mind.

From front-end studies to complete facility projects, WSP has over 50 years' experience in the chemicals, oil, gas, pharmaceutical, biotechnology, food, beverage and consumer products industries.

Business Start-Up

Recognises the top organisation, within or serving the chemical, biochemical and process industries, to be formed in the last five years. Entries should demonstrate contribution to advancing the chemical, biochemical or process industries and evidence of successful business performance and financial viability.

University College London, UK - *Continuous Graphene Manufacturing by Microwave*

Considering the excellent performance and extremely wide application of high-quality graphene, a reproducible and robust manufacturing process is of key importance. A sustainable, economical and up-scalable system has been engineered to generate defect-free, single and few layer graphene in air without the need of toxic and expensive chemicals by a single-mode microwave reactor. Such a green approach is safe to both operators and the environment and can be carried out in a fluidic reactor with the potential for the production of tons of high-quality graphene annually.

Finalists

- Engineurs, UK
  Flawless Executions and Operational Excellence Specialist
- Flocess, Germany
  Software for Pillow-plate Heat Exchangers
- University College London, UK
  Continuous Graphene Manufacturing by Microwave

Sponsored by

Sellafield Ltd

Sellafield Ltd, a subsidiary of the Nuclear Decommissioning Authority, is responsible for the safety, security and environment protection of all nuclear facilities at Sellafield in West Cumbria.
Nearly 80 years in the making, Sellafield site covers 6 square kilometres and is home to more than 200 nuclear facilities and the largest inventory of nuclear waste in the world.
The company is transforming as we prepare for the end of reprocessing and delivering our mission to remediate the Sellafield site to the benefit of the industry and the nation.
Our Risley office in Cheshire provides professional engineering, design and functional support.

Diversity & Inclusion

Recognises the organisation or group that best demonstrates a commitment to promoting diversity and inclusion* within its workforce, sector or business practises. Diversity means respecting and valuing all forms of difference in individuals. Inclusion is about positively acknowledging this diversity and taking deliberate action to create environments where everyone feels respected and able to achieve their full potential.

Global AWARDS WINNER 2019 IChemE

Costain, UK - *Costain's Inclusion Strategy: Implementation and Results*

Costain's goal is to be a safe and great place to work where people thrive and can be at their best every day. The company has taken significant proactive action in recent years to address the lack of diversity and inherent poor culture of inclusion in our industry.

An inclusion strategy has been developed to help Costain reflect the communities that it serves, embracing diverse thinking. The strategy links to wider corporate objectives and is embedded into all business activities. This enables the company to attract, develop and retain the very best people, recruited and developed by merit.

Finalists

- Costain, UK
  Costain's Inclusion Strategy: Implementation and Results
- Ecolab, UK
  Ecolab E3: Empower Engage Energise
- ExxonMobil Chemical and Esso Petroleum Company, UK
  Diversity and Inclusion
- Fluor, UK
  Driving Innovation Through Diversity and Inclusion
- Rolls-Royce, UK
  Continuing to Make a Difference

Sponsored by bp

BP is a global energy company with wide reach across the world's energy system. The energy we produce serves to power economic growth and lift people out of poverty. In the future, the way heat, light and mobility are delivered will change. We aim to anchor our business in these changing patterns of demand, rather than in the quest for supply. We have a real contribution to make to the world's ambition of a low carbon future.

We have operations in Europe, North and South America, Australasia, Asia and Africa, and employ around 74,000 people.

Meet demand for energy or reduce its impact?

Technology can help us do both.

Energy

Recognises the best project or process to demonstrate innovation in renewable, alternative or nuclear energy, efficient energy use or the development of energy production methods that reduce energy intensity.

Birmingham Centre for Energy Storage, University of Birmingham and Jinhe Energy, UK - *The NexGen-TEST Project*

'Wrong-time' generation of electricity from renewables leads to economic and resource losses and wastes clean energy. The NexGen-TEST project led by the Birmingham Centre for Energy Storage, in collaboration with industrial partners across UK and China, addresses this problem. A novel composite phase change material (CPCM) based thermal energy storage technology utilises surplus wind power to store energy as heat for space heating. The technology has been demonstrated as commercially viable at scale at the world's first CPCM based plant in Altay of Xinjiang, China and has significant potential as a low-carbon heating technology in countries with surplus renewable generation.

Finalists

- AquaBattery, The Netherlands
  BlueBattery – Energy Storage in Table Saltwater
- Birmingham Centre for Energy Storage, University of Birmingham, UK, and Chinese Railway Rolling Stock Company (CRRC), China
  Cold Storage for Integrated Road/Rail Transportation
- Birmingham Centre for Energy Storage, University of Birmingham and Jinhe Energy, UK
  The NexGen-TEST Project
- CST Wastewater Solutions, NH Foods Australia, and Oakey Beef Export, Australia and Global Water & Energy (GWE), Belgium
  NH Foods Australia Biogas Sustainability Initiative
- Heriot-Watt University, Dearman Engine Company, Green Data Center, UK, and Universiti Teknologi Malaysia, Malaysia
  Green Data Centres for Sustainable Future
- Perlemax and Viridor Waste Management, UK
  Enhanced DZAD Cycle
- Tri-Y Environmental Research Institute and Qilu University of Technology, Canada
  Biobased Natural TCM Energy Saver
- University of Sheffield, Imperial College London, and Newcastle University, UK
  Assessment of Intensified Solvent-based CO_2 Capture

Sponsored by

Rolls-Royce

Rolls-Royce designs, develops, manufactures and services integrated power systems for use in the air, on land and at sea.
Our products include gas turbines, reciprocating engines and nuclear steam raising plants. For over 50 years, we have been designing and manufacturing the reactors that power the Royal Navy's fleet of nuclear submarines. We are also providing engineering services and solutions to operational nuclear reactors all over the world, supporting clean and efficient power generation.
Our highly skilled engineers are driven by our aspiration to pioneer the power that matters.

Food & Drink

Recognises the best project, process or product that demonstrates innovation to optimise manufacturing operations and contribute to the manufacturing of safe, sustainable food or drink.

Global AWARDS WINNER 2019 IChemE

Bitrez, UK - *Bitrez Curaphen*

Curaphen bisphenol A (BPA) free phenolic resin is used with non-epoxy-based systems in lacquers for the internal coatings of food and drink packaging. Its development was driven by worldwide health scares surrounding the use of BPA following scientific research picked up by the mass media (with emphasis on expectant mothers and babies) which resulted in legislative changes.

An alternative to BPA based grades, Curaphen meets new regulations without the associated health risks, while maintaining the performance qualities of BPA derivatives. The acceptance of the product by industry has enabled Bitrez to deliver strong growth and enter new markets.

Finalists

- Bitrez, UK
  Bitrez Curaphen
- Ecolab, UK
  Ecolab's Manufacturing Processes Improve Food Safety
- Global Water & Energy (GWE), Belgium
  Water Reclamation for Breweries

Sponsored by

The Chemical Engineer

The Chemical Engineer is the member magazine of IChemE. It brings members and subscribers breaking news and thought leadership from across the world of chemical, biochemical and process engineering.

As our flagship publication it benefits from our close involvement with industry, education and regulators to publish the latest chemical engineering industry and research news from around the world as well as in-depth articles, technical features and opinion-led pieces.

Visit www.thechemicalengineer.com to access the online edition of the magazine, read exclusive online-only technical and CPD content as well as search for news and jobs related to the sectors in which you work.

Industry Project

Recognises the best chemical or biochemical engineering project to be implemented in industry after 1 July 2016. Entries may relate to construction of new industrial plant or to the enhancement of existing facilities.

Sellafield Ltd, UK - *Safe Retrieval of Legacy Nuclear Waste*

The First Generation Magnox Storage Pond (FGMSP) contains some of the most radioactive sludges within Sellafield, contained within an ageing building, and this sludge needs to be removed from this location to modern stainless steel containment from where it can go on for forward processing. A previous attempt at remobilising and removing sludge from this particular location had been unsuccessful, so a new system needed to be developed to relocate the sludge.

This new approach implemented by rigorous and extensive application of chemical engineering skills combined with support from external experts from around the UK has underpinned the design of what is a simple 'concept' and has successfully started the process of relocating this hazardous material.

The result is a major step in reducing the overall UK legacy nuclear hazard.

Finalists

- CPFD Software, USA and Viva Energy Reining, Australia
  Risk Reduction Through Virtual Reactor Digitalisation
- CPI, UCB Celltech, Lonza Pharma and Biotech, Horizon Discovery, Sphere Fluidics and Alcyomics, UK
  Defining and Developing New Generation Medicines
- Haldor Topsøe A/S, Denmark
  Topsoe Improved Gasoline Process (TiGAS™)
- Johnson Matthey, UK
  Johnson Matthey Delivers Commercial Manufacturing in Annan
- Johnson Matthey and Eastman Chemical Company, UK
  Methanol and Syngas to MEG
- Sellafield Ltd, UK
  Safe Retrieval of Legacy Nuclear Waste
- Sellafield Ltd and National Nuclear Laboratory, UK
  Dynamic Modelling Effluent Treatment Facilities
- Synthomer, UK
  Synthomer NBR Expansion Project

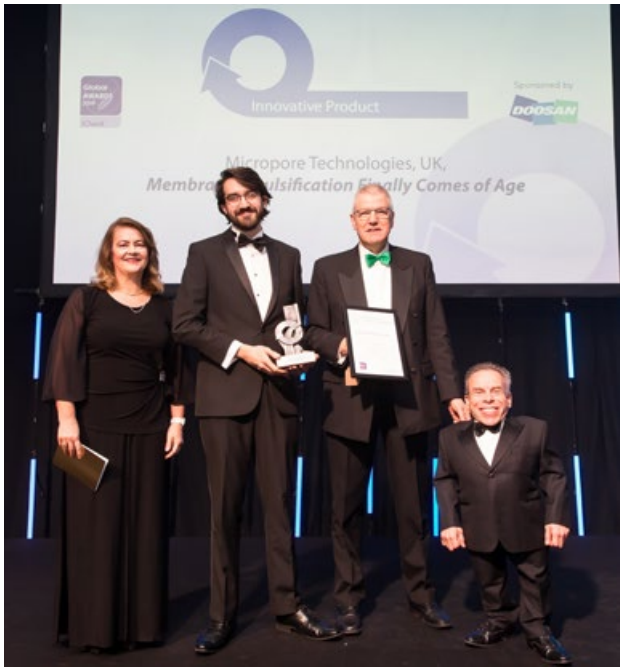
Sponsored by

Engenda Group

Engenda Group is uniquely positioned to deliver essential, value adding mechanical, electrical and instrumentation (ME&I) engineering services. Our people, tools and processes are aimed at 'Engineering Change', with fit for purpose solutions that take into account our customer capability, constraints and required levels of external support. We can be trusted to deliver high quality, technically advanced, accurate, educationally specified equipment and facilities safely, on time and within budget. Engenda Group is proud of being an organisation powered by innovation, founded on a reputation of safety, trust, integrity and ethical business practices.

Innovative Product

Recognises the best product originating from the process industries to be manufactured commercially after July 2016. The product should demonstrate innovation, and a social, commercial, safety and/or environmental benefit.



Micropore Technologies, UK - *Membrane Emulsification Finally Comes of Age*

Micropore Technologies has overcome the long-standing scalability limitations of membrane emulsification, which has demonstrated many benefits for formulators including product performance enhancement, increased yields and lower energy usage. With the Micropore AXF-7 retaining the precision of near monodispersity while scaling to capacities of up to 10,000 tes/yr is now a reality. Scalability of membrane emulsification together with its long-established but hitherto unreachable cost and performance benefits is no longer an issue.

Finalists

- CPFD Software, USA and Viva Energy Refining, Australia
  Risk Reduction Through Virtual Reactor Digitalisation
- Dow Chemical, Belgium
  DOWSIL™ ACP-3073 ANTIFOAM COMPOUND
- Dow Chemical, Republic of Korea
  UV-Moisture Hybrid Curing Silicone Adhesive
- Dow Performance Silicones, USA
  Si-Foam Enabling Efficient Renewable Energy Storage
- Johnson Matthey, Catalyst Technologies, UK
  Chromium-free Hydrogenation Catalyst
- Micropore Technologies, UK
  Membrane Emulsification Finally Comes of Age
- Stora Enso, Finland
  Renewable Micro-fibrillated Cellulose Replaces Fossil Materials
- Tri-Y Environmental Research Institute, Canada and Qilu University of Technology, China
  Biobased Natural TCM Energy Saver

Sponsored by

DOOSAN

Doosan Babcock is a specialist engineering company delivering diverse and innovative full life cycle project management and control, engineering, construction and support services to global clients across the oil & gas, petrochemical, refining, pharmaceutical, fine chemicals, power generation, industrial, and nuclear sectors.

Our portfolio ranges from concept and FEED studies through full EPC project delivery to comprehensive long term service agreements (maintenance, repair and overhaul), as well as multidisciplinary engineering and specialist professional services e.g. relating to plant life management, and construction management.

Working collaboratively with our clients, our extensive experience ensures we consistently provide advanced and cost effective solutions and long term value.

Oil & Gas

Recognises the best project or process to demonstrate engineering excellence in the oil and gas sector, efficient energy use and the development of energy production methods that reduce energy intensity.

Haldor Topsøe A/S, Denmark - *Topsoe Improved Gasoline Process (TiGAS™)*

Haldor Topsøe has successfully commercialised its TiGAS™ or Topsoe Improved Gasoline Process gas-to-gasoline technology in a first industrial scale facility. This first full-scale 15,500 BPSD (600,000 ton/y) TiGAS™ facility has been constructed in Turkmenistan and successfully started-up. This facility converts natural gas into gasoline that meets all the required fuels specifications.

After more than 20 years of process development and R&D, Topsøe's TiGAS™ process has now successfully being proven at a commercial scale. This deployment is the culmination of years of complex heterogenous catalyst development and process engineering.

Finalists

- ExxonMobil Chemicals, UK
  10" Heavy Hydrocarbon Line Freeze
- Fluor, UK
  Oxygen Enhanced Claus CO_2 Recovery Process
- Haldor Topsøe A/S, Denmark
  Topsoe Improved Gasoline Process (TiGAS™)
- PETRONAS Penapisan (Terengganu), Malaysia
  Efficient Sampling using Desorbent Sight Glass (DSG)
- Saudi Aramco, Saudi Arabia
  Flare Gas Recovery System (FGRS)
- Saudi Aramco, Saudi Arabia
  Saudi Aramco Flare Gas Recovery System
- Saudi Aramco, Saudi Arabia
  Water Management Dashboard
- University College London, UK
  Solar Driven Methane to Fuels

Sponsored by

NES Global Talent

NES Global Talent is an international workforce specialist that has placed over 123 different nationalities into 90 countries across the chemicals, downstream, oil & gas, power and mining sectors since 1978. We have over 40 years' experience in the process and chemical manufacturing sector sourcing and managing personnel for a complete range of contract, search and managed service solutions.

Our UK & European chemical division work with global manufacturers of bulk chemicals, speciality chemicals, circular economy chemicals and oil Refining. Their knowledge of process development, operations and project execution ensures we deliver the best candidates for our clients' projects.

Pharma

Recognises the best project, process or technology demonstrating chemical engineering excellence in the Pharmaceutical sector. The scope covers all development phases (research to supply), types of processes and designs (API, biopharm, sterile manufacture, clean services, SIP/CIP, OSD, biological and high potency containment), and products (from dose forms to medical devices). Entries should demonstrate both innovation in meeting patient need at affordable cost, and compliance with all relevant requirements of GMP.

Micropore Technologies, UK - *Membrane Emulsification Finally Comes of Age*

Micropore Technologies has overcome the long-standing scalability limitations of membrane emulsification, which has demonstrated many benefits for formulators including product performance enhancement, increased yields and lower energy usage. With the Micropore AXF-7 retaining the precision of near monodispersity while scaling to capacities of up to 10,000 tes/yr is now a reality. Scalability of membrane emulsification together with its long-established but hitherto unreachable cost and performance benefits is no longer an issue.

Finalists

- Johnson Matthey, UK
  Johnson Matthey Delivers Commercial Manufacturing in Annan
- Micropore Technologies, UK
  Membrane Emulsification Finally Comes of Age
- North Carolina State University, USA
  Fast-Acting, Broad-Spectrum Antimicrobial Polymers

Sponsored by

PM GROUP

PM Group is a 100% employee owned, international project delivery company operating across Europe, the USA and Asia. We have a 46 year track record in project management, process design, facility design and construction management for leading multinational companies.

We are leaders in the pharmaceutical, food, mission critical, medtech, advanced manufacturing and energy sectors. Our reputation is built on great people with a flexible 'can do' attitude who consistently deliver successful projects safely for our clients.

PM Group 's specialism in the delivery of multi-million dollar projects employing the latest cutting-edge technology, is the result of over 40 years' close association with the world's leading players in the pharmaceutical industry.

Process Safety

Recognises an organisation that has an exemplary record in implementing process safety best practice and improvements to reduce major hazards and risks. Entries may include a structured programme – such as HAZOP, PHR, PSM – or technology to minimise risk in operating practices and human factors.

ExxonMobil Chemical, UK - *Delta HAZOP*

ExxonMobil are committed to making a step change in its process safety performance through enhancing process safety and becoming a clear industry leader in this area. Learning from others, we identified the need to focus our existing risk discovery processes and begin to also manage by scenario. EMCL Fawley has led the development of this new way of thinking. Amongst other measures we introduced the Delta HAZOP methodology, and improved it based upon learnings from industry and the regulator.

The site is significantly more focused on major accident hazard related activities, both in study execution and its follow-up.

Finalists

- AstraZeneca, UK
  Duty of Care When Outsourcing
- Environment Agency on behalf of the COMAH Strategic Forum (CSF), UK
  Improved Process Safety for Flooding Events
- Esso Australia
  Data Insights Drive Improved Process Safety
- ExxonMobil Chemical, UK
  Delta HAZOP
- JGC New Energy UK Ltd, Arcadis, The Netherlands and Atkins, DBD, GSB, UK
  Wylfa ABWR Radwaste Process Safety
- Novartis Grimsby, UK
  Implementation of a Human Factors Programme
- PETRONAS Penapisan (Terengganu) Malaysia
  Early Warning Analytics using DRA
- Sellafield Ltd, UK
  Using History to Improve the Future

Sponsored by

PM GROUP

Environmental health and safety (EHS) is a fundamental requirement for businesses across the world. PM Group's EHS consultants provide technical expertise and specialist skills across a broad range of environmental and health and safety areas, including process safety.

Process safety is central to all our projects. We provide continuous evaluation throughout the project life cycle in accordance with in-house safety reviews and regulatory guidelines. Our EHS team also provides standalone process safety services to a range of clients across a variety of sectors.

Research Project

Recognises the project or process that best demonstrates a novel chemical or biochemical engineering solution to improve resource efficiency, lifetime value and/or process automation. Entries should demonstrate potential or actual application within the chemical or biochemical engineering sector and are welcomed from industry, academia and collaborative working groups.

Global AWARDS WINNER 2019 IChemE

Birmingham Centre for Energy Storage, University of Birmingham and Jinhe Energy, UK - *The NexGen-TEST Project*

'Wrong-time' generation of electricity from renewables leads to economic and resource losses and wastes clean energy. The NexGen-TEST project led by the Birmingham Centre for Energy Storage, in collaboration with industrial partners across UK and China, addresses this problem. A novel composite phase change material (CPCM) based thermal energy storage technology utilises surplus wind power to store energy as heat for space heating. The technology has been demonstrated as commercially viable at scale at the world's first CPCM based plant in Altay of Xinjiang, China and has significant potential as a low-carbon heating technology in countries with surplus renewable generation.

Finalists

- Birmingham Centre for Energy Storage, University of Birmingham, UK and Chinese Railway Rolling Stock Company (CRRC), China
  Cold Storage for Integrated Road/Rail Transportation
- Birmingham Centre for Energy Storage, University of Birmingham and Jinhe Energy, UK
  The NexGen-TEST Project
- Fluor, UK
  Oxygen Enhanced Claus CO_2 Recovery Process
- Heriot-Watt University, UK
  Low Carbon Jet Fuel
- Johnson Matthey and Eastman Chemical Company, UK
  Methanol and Syngas to MEG
- National Energy Technology Laboratory, USA
  CO_2-SCREEN
- Tianjin University, China and Loughborough University, UK
  Next-Gen Fuel Cell Engine
- University of Sheffield, Imperial College London, and Newcastle University, UK –
  Assessment of Intensified Solvent-based CO_2 Capture

Sponsored by

OTTO SIMON

Otto Simon is a process-led engineering consultant and project delivery organisation providing services to the process and industrial sectors in the UK and around the world. Established in 2004 but with origins dating back to 1872, Otto Simon builds upon our experience with innovation. We work successfully with a wide range of clients to deliver cost-effective, innovative and practical solutions across the full project life-cycle; including due diligence, technology integration, front end design, project management, turnkey project delivery and O&M asset management. We pride ourselves on the flexible nature of our project delivery, and tailor our services to suit individual client's needs.

Sustainability

Recognises the project, process or product that best demonstrates innovation in waste reduction, recycling, reuse or the lengthening of product lifecycles.

Avertana, New Zealand - *Industrial Waste to Essential Raw Materials*

Avertana is a process technology developer and licensor.

Our proprietary technology converts industrial waste streams into drop-in raw materials used to make everyday products like paint, paper, fertilizer and cement. It both consumes existing industrial waste and leaves behind no residual solid waste.

Avertana's technology has a significantly lower production cost and much smaller environmental footprint than existing routes. Our process can either be deployed at new, greenfield plant or retrofitted to certain existing brownfield production facilities, reducing capital cost and buildout time.

Finalists

- Avertana, New Zealand
  Industrial Waste to Essential Raw Materials
- CST Wastewater Solutions, NH Foods Australia, and Oakey Beef Export, Australia and Global Water & Energy (GWE), Belgium
  NH Foods Australia Biogas Sustainability Initiative
- Dow Chemical, Belgium
  DOWSIL™ ACP-3073 ANTIFOAM COMPOUND
- Econic Technologies, UK
  Turning CO_2 into Endless Potential
- Heriot-Watt University, Dearman Engine Company, Green Data Center, UK, and Universiti Teknologi Malaysia
  Green Data Centres for Sustainable Future
- JTI, Malawi
  Waste to Community Assets
- London South Bank University and MEL Chemicals, UK
  Novel CO_2 Utilisation Process
- Sime Darby Research and Novozymes Malaysia
  Enzymatic Assisted Extraction of Palm Oil

Sponsored by

JM Johnson Matthey
Inspiring science, enhancing life

As a global leader in sustainable technologies, we apply our cutting-edge science to create solutions with our customers that make a real difference to the world around us.

We've been leaders in our field for more than 200 years, applying unrivalled scientific expertise to enable cleaner air, improved health and the more efficient use of our planet's natural resources.

And our story doesn't end there. Through continued investment in sound research and development, we're tackling the world's big challenges into our third century and beyond.

Team

Recognises the best team responsible for implementing and/or developing initiatives, products, projects, processes or services. Teams, of five or more people, can be multi-disciplinary and include colleagues from different professions, functions and organisations.

Global AWARDS WINNER 2019 IChemE

Engie Fabricom UK, Nippon Gohsei, INEOS Oxide, and Zeeco, UK - *Design and Build Temporary Site Flare*

This project was a collaboration between Nippon Gohsei, INEOS, ENGIE Fabricom, and Zeeco to design and install a temporary flaring solution enabling Nippon Gohsei's EVOH Plant in Hull to continue manufacturing whilst its permanent flaring facility was non-operational due to turnaround activities. The project was completed within 7 months from concept to commissioning, seemingly a 'near-impossible' task at the outset. It was achieved by the complete commitment and dedication of all parties, placing the success of the project above any individual organisational interest. As a result, over 2000 tonnes of product were manufactured which otherwise would have been lost.

Finalists

- Dow Performance Silicones, USA
  Si-Foam Enabling Efficient Renewable Energy Storage
- Engie Fabricom UK, Nippon Gohsei, INEOS Oxide, and Zeeco, UK
  Design and Build Temporary Site Flare
- Environment Agency on behalf of COMAH Strategic Forum, UK
  Improved Process Safety for Flooding Events
- National Nuclear Laboratory, Lancaster University, University of Liverpool, University of Manchester, and Sellafield, UK
  CINDe: Bridging the Research-Industry Gap
- Petroleum Development Oman
  Accident Prevention and "Lessons Learnt" in Safety
- Sellafield Ltd and Axiom Collaborative Solutions, UK
  Thorp Evaporative Capacity Project
- Synthomer, Malaysia
  Synthomer NBR Expansion Project
- University of Chester and Unilever R&D, UK
  Chemical Engineering Degree Apprenticeships

Sponsored by

BakerHicks.

BakerHicks is a design and engineering company specialising in complex process, infrastructure and built environments across the full project life cycle. We have delivered numerous projects for our chemical, biopharmaceutical, manufacturing and nuclear customers; using the latest innovations in Building Information Modelling (BIM) to deliver a complete design service.

Supporting internationally recognised brands from our offices in the UK and Europe, our process and engineering teams use specialist knowledge to guide clients on their improvement and investment goals. From high containment and continuous processing to modularisation and process safety; our team can support the successful delivery of your projects.

IChemE ADVANCING CHEMICAL ENGINEERING WORLDWIDE

Global AWARDS 2020
IChemE

IChemE Global Awards 2020

Recognising excellence in chemical engineering

Save the dates

Open for entries:	**6 March**
Entry deadline:	**26 June**
Global Awards:	**12 November**

To sponsor the IChemE Global Awards 2020, email awards@icheme.org

www.icheme.org/globalawards

Training & Development

Recognises the team or organisation that best demonstrates excellence in training, development of staff or education of a wider community. Entries should demonstrate how a skills/knowledge gap has been addressed, how a training programme has had a positive impact on business performance and/or how public perception of chemical engineering has been improved.

University College London, UK - *Bioprocess Engineering Leadership Centre*

Biochemical engineering skills underpin the translation of life science discoveries into industrial products and processes. Sectors reliant on these skills include chemicals and bio/pharmaceuticals, vaccines and the emerging cell and gene therapy market. For 20 years, the EPSRC CDT in Bioprocess Engineering Leadership has developed future leaders of the international bioindustries. The Centre helped pioneer Engineering Doctorate (EngD) programmes and has continually evolved to meet the research needs of the sector. To date, 171 EngD projects have been completed with 66 companies. 96% of graduates have progressed to relevant leadership positions in industry or established their own spin-out companies.

Finalists

- BP European Acetyls, Honeywell, UK, and BP Petrochemicals RT, USA
  Accurate Simulation Ensures Safe Operator Training
- IChemE Nuclear Technology Special Interest Group and Chester University, UK
  Nuclear Lectures at Chester University
- National Nuclear Laboratory, Lancaster University, University of Liverpool, University of Manchester, and Sellafield Ltd, UK
  CINDe: Bridging the Research Industry Gap
- PETRONAS Chemicals Methanol, Malaysia
  Process Safety R2C2
- PM Group
  Pharma SME Development Programme
- Sellafield, Ltd UK
  Sellafield Ltd "Cradle to Grave" Training Scheme
- University College London, UK
  Bioprocess Engineering Leadership Centre
- University of Queensland, Australia
  Risk and Safety Education for the Next Generation

Sponsored by

AVEVA™

AVEVA is a global leader in engineering and industrial software driving digital transformation across the entire asset and operations life cycle of capital-intensive industries. The company's engineering, planning and operations, asset performance, and monitoring and control solutions deliver proven results to over 16,000 customers across the globe. Its customers are supported by the largest industrial software ecosystem, including 4,200 partners and 5,700 certified developers. AVEVA is headquartered in Cambridge, UK, with over 4,400 employees at 80 locations in over 40 countries.

Water

Recognises the best project or process to demonstrate engineering excellence in water use, clean-up and re-use, with a particular emphasis on reducing environmental impact while preserving commercial viability.

Jacobs Engineering and Public Utilities Board, Singapore - *Tuas Nexus and Tuas WRP*

Tuas WRP is a process plant being developed by the Public Utilities Board of Singapore to address the country's long-term needs for used water collection, treatment and reclamation.

Tuas WRP will be co-located with the Integrated Waste Management Facility (IWMF) being developed by the National Environment Agency. This will allow realisation of the synergies of integrating used water and solid waste treatment while optimising land use.

Tuas WRP will be a compact and highly automated plant with an initial treatment capacity of 800 MLD and a production capacity of 114 MLD NEWater and 90 MLD Industrial Water.

Finalists

- Global Water & Energy (GWE), Belgium
  Water Reclamation for Breweries
- Jacobs Engineering and Public Utilities Board, Singapore
  Tuas Nexus and Tuas WRP
- Sellafield Ltd and National Nuclear Laboratory, UK
  Dynamic Modelling Effluent Treatment Facilities
- United Utilities and Royal Haskoning DHV, UK
  Magic Granules

Sponsored by

ECOLAB®

A trusted partner at nearly three million customer locations, Ecolab (ECL) is the global leader in water, hygiene and energy technologies and services that protect people and vital resources. With annual sales of $15 billion and 49,000 associates, Ecolab delivers comprehensive solutions, data-driven insights and on-site service to promote safe food, maintain clean environments, optimize water and energy use, and improve operational efficiencies for customers in the food, healthcare, energy, hospitality and industrial markets in more than 170 countries around the world.

Young Industrialist

Recognises the individual who best demonstrates their achievements and tangible application of chemical, biochemical or process engineering skills to address important economic, environmental or social issues. All entrants must have been born on or after 1 January 1989.

Thomas Isaac - Progressive Energy, UK

Tommy is a chartered chemical and mechanical engineer with a passion for harnessing engineering fundamentals such as thermodynamics and fluid mechanics to deliver technical solutions to societal problems. His career has spanned multiple aspects of the energy industry and has led him to focus on enabling energy transition towards sustainability. By combining technical ability, industry knowledge and consortium management skills, Tommy has played a key role in overcoming barriers to hydrogen deployment within the UK energy system. Tommy continues to support the industry to overcome the remaining barriers through his drive to see commercial scale decarbonisation via hydrogen deployment.

Finalists

- **Adedolapo Oyawoye**
  PM Group
- **Ahsan Zafar**
  Bouygues Energies & Services, UK
- **Angus William John Strowbridge**
  AECOM, UK
- **Ashira Bindels**
  GlaxoSmithKline, Italy
- **Edison Tan Hong Seng**
  Shell Eastern Petroleum, Singapore
- **Georgia Kotsiopoulou**
  OMV, Austria
- **Irene Lock Sow Mei**
  PETRONAS Group Technical Solutions, Malaysia
- **Thomas Isaac**
  Progressive Energy, UK

Young Researcher

Recognises the individual who best demonstrates the impact of their research in helping to address important economic, environmental or social issues. All entrants must have been born on or after 1 January 1989.

Florence Gschwend - Chrysalix Technologies, UK

Dr Florence Gschwend is co-founder and CEO of Chrysalix Technologies, an Imperial College spin-out company commercialising the BioFlex process, a circular bio-economy technology. A chemist by training, she co-founded Chrysalix after completing her PhD in chemical engineering. The BioFlex process enables the use of unwanted waste wood for the production of renewable chemicals, material and fuels. Dr Gschwend has won several awards in relation to it and was named by Forbes 30under30 as one of Europe's most promising game changers under 30 in Science and Healthcare.

Finalists

- **Florence Gschwend**
  Chrysalix Technologies, UK
- **Leandro Buchmann**
  ETH Zurich, Switzerland
- **Leela Sarena Dilkes-Hoffman**
  University of Queensland, Australia
- **Serene Lock Sow Mun**
  Monash University Malaysia
- **Vasileios Charitopoulos**
  University of Cambridge, UK