

NEWSLETTER

Welcome to 2019 From Your South Wales Region!



Welcome to the 2019 newsletter. For the year ahead, your committee has arranged a varied and interesting programme of events. These range from lectures on subjects as diverse as Member to Fellow progression and Groundwater modelling, to social events including our now-established “Members and Partners” evening in March and of course our Annual Dinner in May. This will be an enjoyable evening of excellent food, convivial company and an entertaining after-dinner speaker, Mr John Paul Davies from Sky News and Sky Sports – hopefully we will see you there.

IMechE President Tony Roche, has assumed office as President of the IMechE. Tony said of his appointment:

“I am delighted and honoured to have been elected by Council and the Trustee Board to take up the role of President for the second time in my life.

“.... The IMechE is first and foremost a membership organisation and our Royal Charter is clear that our object and purpose is to ‘promote the development of Mechanical Engineering’ ...”

within schools and colleges, working with our local industries to provide professional registration events and finally developing new relationships with other engineering institutions within the region for mutual benefit.

Whatever your interests, and with the increasing focus on Continued Professional Development for Engineers we are confident that there will be something in our programme for you. We have had a successful 2018 in terms of attendance at events – join us for a great 2019!

We still have several committee roles left to fill so if you want to get involved with the operation of the South Wales Region then please check out our website and submit an application. The roles will be supporting the vision and strategy of our current chair Mr. Dave Harwood who took over in 2017. Last year saw a number of members show enthusiasm for joining the committee and increasing the profile of the Region with local companies, which is great news as we look to the future.

In 2019, we are aiming to develop our activities in terms of working more closely with our local universities, expanding our promotion of engineering to the next generation



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Written and edited by
Dr. Andrew Bayton

If you have any comments about this Newsletter or would like to contribute to future editions, then please do not hesitate to contact us.

South Wales Administration Team
E: swalesadmin@imechenearyou.org

<https://nearyou.imeche.org/near-you/UK/South-Wales>

Education

Energy

Environment

Manufacturing

Society

Transport

Reviews – Past Events

Lightning Research at Cardiff University – 6th February 2018

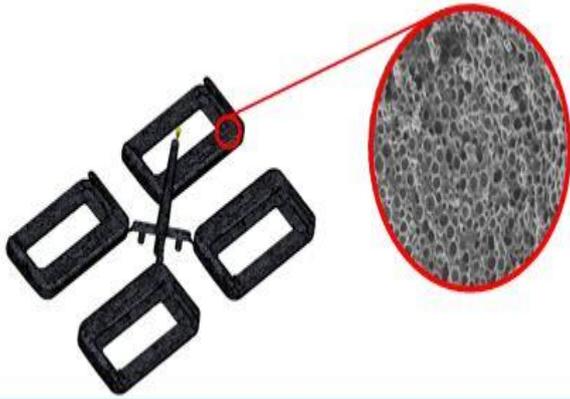


Dr. Daniel Mitchard from the Morgan-Botti Lightning laboratory gave the audience an overview of lightning research at Cardiff University. The laboratory can produce “lightning” of up to 100kV. This is normally three times higher than most lightning strikes. Of particular interest to the research facility is how lightning interacts with materials and in addition to this how the materials respond to being hit with a bolt of lightning.

Dr. Mitchard showed the electromagnetic fields that are generated when a lightning strike occurs and it was interesting to see the mechanics of how a material reacts which is somewhat different to a “normal” energy impact from a more regular force.

The audience was also shown the differences when alternative materials are used to create the lightning arc and the temperatures generated can be in excess of 9500K.

The Next Generation of Polymer Production - 13th March 2018



We held our National Science & Engineering Week lecture in Swansea University. This year Gethin Llewelyn came to talk to us about the advances in polymers used in automotive applications.

The drive to reduce our carbon footprint affects all manufacturing processes. New EU legislations are forcing automotive manufacturers to produce more environmentally friendly cars with lower CO₂ emissions. With 76% of a vehicle's energy consumption being directly related to the mass of the car; making cars more lightweight is deemed highly important to satisfy future legislative directives. The advances in polymer manufacturing has emerged as one technology that could solve this problem. Conventional foaming or Microcellular Injection Moulding offers the potential to deliver polymer components with lower material usage, lower cycle times and reduced processing energy. The

presentation provided an overview of the potential of the process and considered the use of bio-polymers to meet the industrial demand for the next generation of polymer products.

Water Hammer and Surge Analysis in Pipeline Design - 15th May 2018



On Tuesday 15th May, Mr. Nik John, FIMechE gave our pre AGM lecture on hydraulic analysis and pipeline design. Nik has a wealth of experience in this area and can be considered as one of the experts in the field of water hammer and surge analysis.

Nik gave us an overview of hydraulic system design and how water hammer or surge is created in pipelines and some of the fundamentals that are required to understand how surge pressures can be mitigated.

Finally Nik talked us through some of the examples that he has encountered during his career in the design of these systems

The South Wales Region would like to thank Nik for delivering this highly informative talk on our behalf.

South Wales Region Annual Dinner – 4th May 2018



Over 80 people attended what was another successful, and certainly enjoyable annual dinner. Building on the theme of previous years we were joined by President Elect Geoff Baker and Lowri Morgan, Extreme Athlete and Broadcaster.

Lowri is one of only six in the World to ever complete the notoriously difficult 350 mile non-stop footrace '6633 Ultra' in the Arctic and the challenging Jungle Ultra Marathon in the Amazon Forest. The 6633 ultra-marathon is one of the toughest challenges on the planet. The freezing Arctic setting where, competitors are pushed to their physical and mental limits as they strive to complete the 350-mile endurance race in only eight days and in -40°C and 70 mile per hour winds. Lowri Morgan was the sole survivor.

Lowri told us about her achievements and what it takes to succeed against the odds and in some of the harshest environments this planet as to offer.

We were also joined by up close magician Phil Jay, Phil is one of the country's best magicians and has been all over the world performing for a host of celebrities and other leading figures.

The 16th Ian Hewardine Memorial Lecture – Bombs, Mines & Underwater Ordnance Disposal – 13th November 2018



Colonel Robbie Hall QGM served 37 years in the Army, and for 25 of those he was involved in various aspects of Bomb Disposal, both on land and in the sea. His final task before leaving the Service was to command the training organisation for all 3 Services Bomb Disposal specialists, charged with finding and training sufficient high-threat operators to cope with the daunting IED threat in Afghanistan. Life after the Army allows him to pursue his greater calling to ordained Christian ministry.

Fitting in with our safety related theme this amazing lecture not only described some of the more challenging operating environments that ordnance disposal personnel encounter but also the various skill sets and the team approach to disposal of such ordnance. What was surprising was that the army selects personnel based not only on qualifications but on skill set and attitude which is something that may benefit the engineering profession too?

Previews – Future Events

Member to Fellow – Have you got what it takes? – 30th April 2019

Fellowship of the Institution of Mechanical Engineers is the highest class of elected membership, and is awarded to individuals who have demonstrated exceptional commitment to, and innovation in, mechanical engineering.

Venue: Holiday Inn, Junction 32 M4, Merthyr Rd, Tongwynlais CF 15 7LH

Time: Buffet 6.15pm, Lecture 7pm



Book using Link: <http://nearyou.imeche.org/near-you/UK/South-Wales/event-detail?id=16019>

Contact South Wales Administration Team at swalesadmin@imechenearyou.org

Adventures in Ink! - Members and Partners Social Evening – 22nd March 2019

An especially warm invitation is extended to new members and their partners, together with old friends, for this evening of socialising. This year we have Welsh Author Trevor Fishlock as our speaker. Trevor adventured around the world as a foreign correspondent. He reported Wales for The Times in the 1960s-70s. As a foreign correspondent for The Times he lived in India and America. He became the Moscow bureau chief for

The Daily Telegraph. He also wrote from Africa, the Arctic, Australia, South America and more than seventy countries.

Venue: The Ballroom @ the Bear Hotel, 63 High Street, Cowbridge, Vale of Glamorgan, CF71 7AF

Time: 7.30pm

Book using Link: <http://nearyou.imeche.org/near-you/UK/South-Wales/event-detail?id=15555>

Contact South Wales Administration Team at swalesadmin@imechenearyou.org

The South Wales Region Annual Dinner – 10th May 2019 - After Dinner Speaker – Mr. John Paul Davies (Sky Sports and Sky Sports News)

7.30 pm at Cardiff City Hall

This year we will be continuing with our usual format for the annual dinner on the evening of Friday 10th May 2019 at our regular venue of Cardiff City Hall. Following the success of Andy Green in 2016, Ryan Jones in 2017 and Lowri Morgan in 2018 we are pleased to



welcome **Mr John-Paul Davies** as our after dinner speaker. He is a popular and well known face on Sky News and Sky Sports News and has been anchor when some of the World's biggest news stories have broken over the past decade.

He worked for ITV Wales for two years before joining Sky at the start of 2008. Before that he spent four years in the Police becoming the first Police Officer in twenty years from South Wales to gain a place on the Home Office Accelerated Scheme for Graduates.

During his first year working for Sky in London, John presented the Rugby League World Cup, International Rugby Union and International Football where he has been the regular presenter for Wales' Football Internationals.

The Annual Dinner will again take place in the impressive Marble Hall. Just like last year the dress code is formal (dinner jacket and black tie).

The dinner costs £40 per head for Members and their guests and £24 per head for students. Remaining places are rapidly being taken up, and note that booking is essential. Following its successful use for the 2018 Annual Dinner, this year we are managing bookings online at the web address below.

If you are unable to use the online service, please contact The Administration Team on swalesadmin@imechenearyou.org.

Book using Link: <http://nearyou.imeche.org/near-you/UK/South-Wales/event-detail?id=15338>



Support your Region's Universities at **Formula Student 2019**

Silverstone Circuit
17th-21st July

www.formulastudent.com



Regional Matters

Notice of Annual General Meeting

Notice is hereby given that the 2019 Annual General Meeting of the South Wales Region of the Institution of Mechanical Engineers will be held on:

Date: Tuesday 14th May 2019
Time: 6:00 for 6:15 p.m.

Venue: Holiday Inn Hotel
Junction 32 M4, Merthyr Rd, Tongwynlais,
CF15 7LH

Nominations for the Regional Committee, including the signature of the nominator and signed written consent of the nominee(s) should be sent at the earliest opportunity and before 15th April 2019 to:

Mr Andrew Hall, Secretary, IMechE South Wales Region

Email: swalessec@imechenearyou.org

After the list of nominations by the Committee has been presented at the meeting, any member of the Branch/Region who is a Corporate Member of the Institution shall be entitled to add to the list a candidate for election to any or each of the offices to be filled, by causing to be delivered to the Chairman at the meeting nominations signed by him as nominator, together with the written consent of his nominees. Any additions shall be confined to the offices of the Committee for which the nominations have been made by the Committee.

Please note that a technical lecture will follow The Annual General Meeting at 7pm.