

# NEWSLETTER

**January 2018**

## Happy New Year From Your South Wales Region



Welcome to the 2018 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 Professional Registration and Lightning Research, 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, Ms Lowri Morgan, Extreme Athlete and Broadcaster – hopefully we will see you there.

*IMechE President Carolyn Griffiths at Atlantic College as part of the Heritage Award Celebrations. The Awards recognise irreplaceable artefacts to celebrate and raise public awareness for the vital role mechanical engineering plays in modern life. World famous engineering projects like the Concorde, Alan Turing’s cipher decoder, the Channel Tunnel, London’s Tower Bridge, and the Jaguar E Type have all received this award.*

In 2018, 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 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. Furthermore, we have expanded how we communicate with you, our members, including a new regional presence on Twitter and Facebook. Watch this space, as they say!

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

**Education**

**Energy**

**Environment**

**Manufacturing**

**Society**

**Transport**

### CONTENTS

- Welcome from the South Wales Committee
- Reviews – Past Events
- Previews – Future Events
- Regional Matters

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](mailto:swalesadmin@imechenearyou.org)

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 2017 in terms of attendance at events – join us for a great 2018!

I would like to express the committee’s thanks to Mr Andy Pugh, who completed a highly successful period as Regional Chairman at the 2017 AGM. Andy’s commitment to the Institution is an example to us all, and we are delighted that he remains an active member of the committee, supporting Mr. Dave Harwood who took over as Chairman. 2017 has also seen 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.



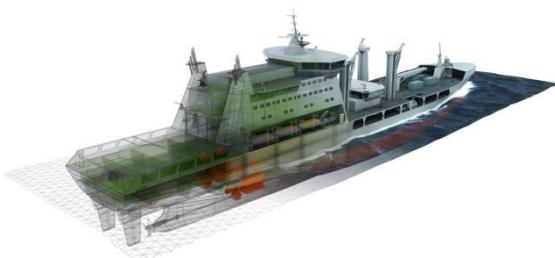
**Facebook**  
Search “IMEche South Wales Region”



**Twitter**  
@imeche\_swales

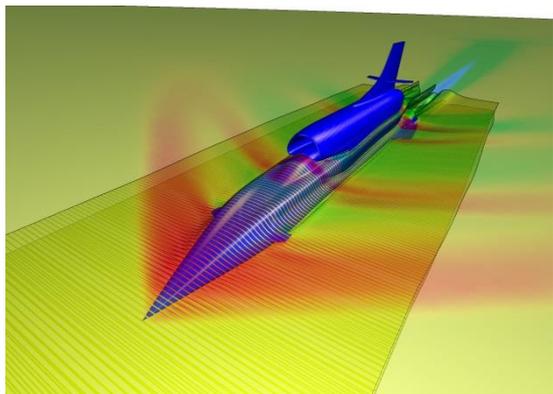
## Reviews – Past Events

### Hybrid Propulsion of Naval Auxiliary Vessels – 7<sup>th</sup> February 2017



John Buckingham, Chief Mechanical Engineer for BMT Defence Services gave an in depth presentation on the challenges that face the design and power requirements of naval vessels. The introduction of affordable and reliable Active Front End (AFE) power electronics technology now enables the marine Power and Propulsion designer to employ a hybrid design to achieve efficient electric drive for cruise speeds and cost effective mechanical drive for faster speeds. The electric drive allows the Main Diesel Generators (MDG) to provide power to Ships Electrical Load and the propulsion motors whilst those same motors operate as alternators when running on the Main Diesel Engines at higher speeds.

## The Design of the Worlds Fastest Car, BLOODHOUND SSC – An Engineering Adventure - 14<sup>th</sup> March 2017



We held our National Science & Engineering Week lecture in Swansea University. This year Dr. Ben Evans came to talk to us about the design of the Bloodhound SSC, the car that will be attempting the world land speed record and aiming to achieve 1000mph.

Dr. Evans showed us the varying engineering challenges that presented themselves when trying to evaluate how a vehicle will perform at these speeds and also how it will interact with the ground when the car is finally launched in South Africa in 2018.

Dr Evans started the talk by showing us what happens when you move from sub-sonic speeds to super-sonic speeds and the physical effects from stationary to supersonic and the pressures that are involved, which, are in excess of 12t/m<sup>2</sup> over the surface of the vehicle. Next, we were given an overview of the Spray Drag

Model using Computational Fluid Dynamics. It was also refreshing to see how the technology has been transferred to process industries which has resulted in competitive advantage for partner companies.

---

## IMechE Heritage Awards – The Hidden Story - 16<sup>th</sup> May 2017



John Wood who is a past President of the IMechE and current chair of the heritage division gave our pre-AGM lecture this year. John described the work of the heritage division and what criteria need to be met when considering a particular engineering artefact for heritage status. John gave the audience a brief tour of the UK's engineering heritage and what is left of the estate after much has been demolished or left to ruin.

John then proceeded to show us the many success stories that have been preserved or renovated for the benefit of all.

Of particular interest to the audience, was the selection criteria of what makes a good candidate for a heritage award. The definitions of “significant”; “accessible”; and are replicas and reproductions considered? These headings provided attendees with a valuable insight as to how the heritage division works and how they make the decision of what gets an award – or not!

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



## South Wales Region Annual Dinner – 5<sup>th</sup> May 2017

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 Carolyn Griffiths and Ryan Jones, former Wales Rugby Captain. Ryan gave a very entertaining talk to the audience on the many “characters” that populate the world rugby scene and what his pursuits and vocational interests currently are. He regaled us with several tales of playing rugby around the globe with Wales and The Lions.

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.

Presentations were also made on the night to Chairman Andy Pugh who stood down as Chair of the Region and to Eric Godding, a Chartered Engineer for over fifty years and a long standing member of the Region Committee. Both will be missed by us all at the South Wales Region.

## Renewable Energy Devices and Artificial Reefs – 26<sup>th</sup> September 2017



It was a welcome return to Pembrokeshire for the South Wales Region and the audience was treated to a very informative lecture from Dr Ruth Callaway who is part of the SEACAMS2 Project running in Swansea University. Dr Callaway described how renewable energy equipment can serve as an artificial reef for marine life and depending on the materials used, can help with populating the equipment with a variety of marine life.

It was very interesting to see how marine biology and engineering can work side by side to secure renewable energy and improve the marine population of various species.

You can download the conference paper on this subject here:  
[Seacams Project Conference Paper](#)

## The 15<sup>th</sup> Ian Hewerdine Memorial Lecture – Lifeboat in a Box – 14<sup>th</sup> November 2017



### LIFEBOAT IN A BOX

This was a particularly poignant lecture when considering that Atlantic College has received an Engineering Heritage Award from the IMechE in July. Atlantic College was the testing ground for the rigid inflatable boat (RIB) that was conceived by Rear Admiral Desmond Hoare and built by students in the 1960s. Michel Creber, Tom Coe and Robin Jenkins gave an excellent presentation about the history of the RIB at the College, and the recent developments that have led them to set up the Atlantic Pacific International Rescue Boat charity to create the Lifeboat in a Box. Currently they are deploying these facilities around the World to provide Lifeboats where there are none. A particularly heart warming part of the presentation was given around the relief work conducted in the Mediterranean and the rescue work with refugees off the coast of Italy and the Greek Islands.

## Previews – Future Events

### How to Prepare for the IMechE Professional Review Interview - 18th April 2018

Attendees will be able to learn all about the IMechE Professional Review Interview for CEng and IEng. The presentation will cover all aspects of the interview process, format, typical questions, mandatory questions and competencies covered. There will be opportunity to ask the presenter questions. This session is invaluable for anyone looking to become professionally registered in the future.

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

**Time:** Buffet 6.15pm, Lecture 7pm

Contact Dr Andrew Bayton at [swalesadmin@imechenearyou.org](mailto:swalesadmin@imechenearyou.org)

### Members and Partners Social Evening – 23<sup>rd</sup> March 2018

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 baritone Mark Llewellyn Evans as our speaker.

**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=14197>

Contact Dr Andrew Bayton at [swalesadmin@imechenearyou.org](mailto:swalesadmin@imechenearyou.org)

## The South Wales Region Annual Dinner – 4<sup>th</sup> May 2018 - After Dinner Speaker – Ms. Lowri Morgan

7.00pm for 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 4<sup>th</sup> May 2018 at our regular venue of Cardiff City Hall. For 2018, we have decided to hold the Annual General Meeting separately (see formal notice below) to allow more time for socialising and enjoyment at the Annual Dinner. Following the success of Wynne Evans in 2015, Andy Green in 2016 and Ryan Jones in 2017 we are pleased to welcome **Ms Lowri Morgan** as our after dinner speaker.

Lowri Morgan 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 were pushed to their physical and mental limits as they strived 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.



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 £45 per head for Members and their family or guests and £25 per head for students. Remaining places are rapidly being taken up, and note that booking is essential.

Following its successful use for the 2017 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](mailto:swalesadmin@imechenearyou.org).

Book using Link: <http://nearyou.imeche.org/near-you/UK/South-Wales/event-detail?id=14189>



Support your Region's Universities at

### Formula Student 2018

Silverstone Circuit  
11<sup>th</sup>-15<sup>th</sup> July

[www.formulastudent.com](http://www.formulastudent.com)



## Regional Matters

### Notice of Annual General Meeting

Notice is hereby given that the 2018 Annual General Meeting of the South Wales Region of the Institution of Mechanical Engineers will be held on:

Date: Tuesday 15<sup>th</sup> May 2018

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 15<sup>th</sup> April 2018 to:

Mr Andrew Hall, Secretary, IMechE South Wales Region

Email: [swalessec@imechenearyou.org](mailto: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 at 7pm will follow The Annual General Meeting.