



IES

News Bulletin

May 2021

The Institution of Engineers in Scotland A Multi-disciplinary Engineering Institution

Message from our President Dr Andy Pearson

The Institution's 2020-21 session concluded with a fascinating lecture by Peter Noble on the subject of "Why Civil Society Needs Engineers". Peter's passion for his subject shone through in his tour de force description of his career in naval architecture, starting at Denny's in Dumbarton and encompassing all aspects of Ocean and Arctic Engineering. You would be well advised to direct any young person thinking about a career in engineering to Peter's presentation. This is a good time to be an engineer.

The whole 2020-21 session was of course massively disrupted by the Covid-19 pandemic and resultant restrictions on public gatherings. I am extremely grateful to all of our speakers throughout the year for their willingness to engage with the technology of online meetings and to our faithful audience for their willing participation in the events. One of the upsides of the situation is that we were able to welcome speakers like Peter Noble, calling in from his home just outside Houston, Texas and audience members from around the globe. This not only gave wider access to excellent presentations but also enabled old friends and colleagues to reconnect in a way that would not otherwise had happened. This

is a valuable benefit that we do not want to lose when we return to live audience events. The robustness of the technical platforms on which our events have been hosted, including our Council meetings, the AGM, sub-committee meetings and the Rankine 2020 conference as well as our evening papers, is testament to the skills of the hardware developers, software writers, production engineers and IT infrastructure operators who made these various platforms possible. Just imagine what operating the Institution under lockdown conditions would have been like ten, twenty or even thirty years ago – it would have been well nigh impossible to achieve what has been done over the past year. It's still a good time to be an engineer.

Looking forward to the 2021-22 session the most significant addition to our programme will be the return of our premier social event, the James Watt Dinner. This was the one occasion last year that we were simply unable to replicate online but, regulations permitting, our plans are now well under way for the 8th of October – more details later in the bulletin. We will also continue, subject to a demand from members, with the Cuppa and Chat



sessions that have been so enjoyable this year. This is a chance for up to a dozen members to get online for a wide-ranging group discussion. If you haven't already participated then please drop Laura a note to let her know that you are interested and she will slot you in to one of the future events. With COP-26 coming to Glasgow in the autumn we will be at the centre of world attention and our active and vibrant Institution has a chance to reach a wider audience and make a difference. 2021 is a great time to be an engineer.

I hope that you enjoy this copy of the bulletin – we would love to receive your suggestions, comments, topical discussion points and book reviews to include in the next issue so please stay in touch over the summer.

Welcome Back James Watt Dinner!



Whilst we are taking nothing for granted in these troubled Covid times. We are planning to hold the James Watt Dinner on Friday October 8th 2021. (We will keep a close eye on developments with the pandemic).

We will launch full details soon and shall start taking provisional bookings shortly after that. Please start asking your friends, family and colleagues if they would like to come along this year. After such a difficult and isolating year this year's James Watt Dinner promises to be a very special occasion indeed!

Cuppa and Chat

There are some great ideas and suggestions coming from the 'Cuppa' meetings. We have two more meetings planned before the summer. The meetings have been popular and we would like to continue them in the next session. If you would like to take part please let Laura know

Managing our Subscriptions

Over the next few weeks we will be trialling some new software (MemberMojo) which, we hope, will help streamline our renewal notices for subscriptions. We hope that you will appreciate the communication and that making payments will be easier for you. We will be very happy to receive any feedback during the trial.

This is a good point to remind you all that we are actively seeking new members in all categories and if you know anyone who would be interested please send them a personal invitation by email, encouraging them to visit engineers.scot/membership.joining

New members of Council

Graham Bibby is a graduate of the University of Glasgow, and a "Rude Mechanical". He has latterly been managing director of a number of mechanical engineering companies, serving the water treatment, mechanical and fluid handling, renewable technology and engineering services markets worldwide.

Latterly Graham has been focussed on developing technologies for the burgeoning renewable energy market, focussing on offshore technologies, where his passion for technology and the environment combines with his love of the sea.

Graham has focussed on the development of young engineers, via mentoring, support of Young Engineers Clubs, and by identifying and nurturing appropriate talent.

Graham is a keen sailor, and also spends as much time as possible in SW France.

Gregor J. Colville is Head of Teaching for Chemical & Process Engineering at Heriot-Watt University, and is also a Visiting Scholar at Queen's University Belfast. He holds an MEng Chemical Engineering with Energy Resource Engineering from Heriot-Watt, and an MSc Petroleum Engineering from Imperial College.

Gregor spent 15 years in the upstream oil and gas industry working in Aberdeen, Sydney, Houston and Luanda, before joining Heriot-Watt in 2016. In addition, he was a founding member and chairman from 2010-12 of Heriot-Watt's Chemical Engineering Industrial Advisory Board.

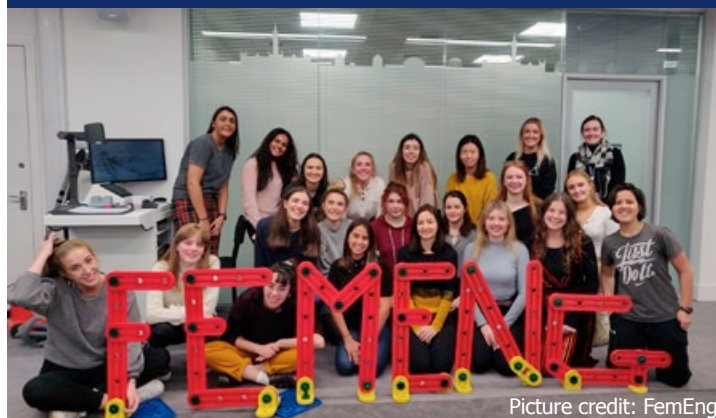
Gregor is a Fellow of IES and a chartered engineer and chartered petroleum engineer through the Energy Institute. He was Chairman of the Aberdeen, Highlands & Islands Branch of the Energy Institute from 2011-12, and has also served on the Aberdeen committees of the Society of Petroleum Engineers and the Institute of Corrosion.

A sneaky peek at our 2021-2022 programme!

We are planning another marvellous programme and have invited speakers on diverse topics but with an environmental theme. Topics such as electric bicycle design and manufacture, district heating systems, off-shore wind farms, smartgrid switchgear, innovative distillery structure and whisky processing, latest innovations in compressors, advanced manufacturing.....and hydrogen trains!

In recognition of the importance of the COP 26 conference in Glasgow in November we have scheduled two lectures to coincide with this significant event.

FemEng in Malawi



Picture credit: FemEng

IES is pleased to support the work of the FemEng group.

FemEng – Glasgow University's Female Engineers – are launching a new project in collaboration with engineering students at Malawi University of Science and Technology with the aim of encouraging more young people to pursue STEM.

Due to COVID-19 and the new 'normal' of virtual working, the team of 20 students are developing STEM workshops online for primary school pupils in Malawi which will be delivered in Summer 2021.

These workshops range from techniques in mechanical, biomedical, product design, chemical, civil and other engineering disciplines. Each workshop will teach children about engineering disciplines through practical experiments, presentations and fun worksheets. FemEng are also incorporating soft skill workshops and cross-cultural activities online for the student team members. Further, the project is working to strengthen links between the nations through the Scotland Malawi Partnership. This virtual international collaboration is a first for FemEng, and the team are excited to bring preparations to fruition!

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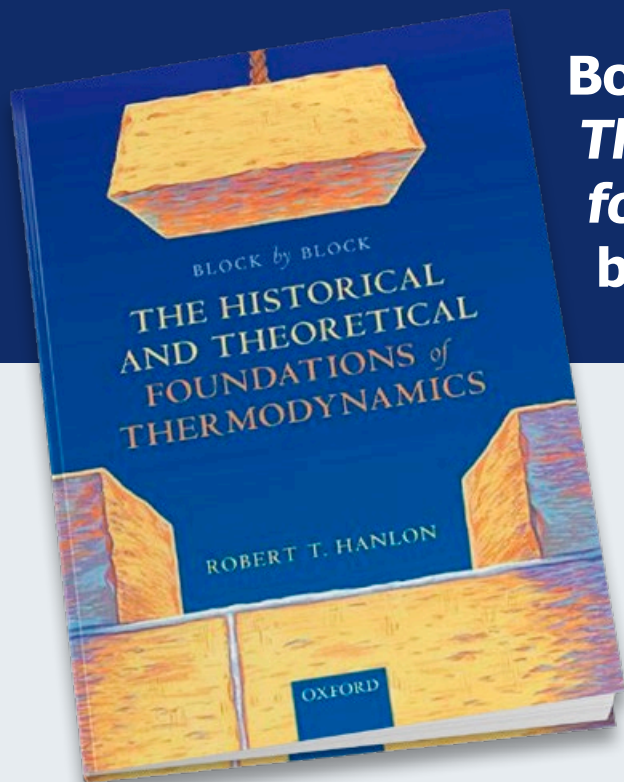
It is with regret that we inform you of the recent death of Ian Ramsay, Ian has been a key member of the Institution for many years, serving as Secretary from 1997 to 2004 and was recently presented with the Sir Robert Easton Award for his contributions.

We are pleased to congratulate IES Council Member Paul Sweeney on his recent election to the Scottish Parliament as an MSP.

Looking for something interesting to do?

We are now able to feature events from other institutions and organisations on our website – some of our members have already commented on the interesting lectures that they have been able to listen to after finding them on our new website.

Bookshelf – “Block by block: The historical and theoretical foundations of thermodynamics”, by Robert Hanlon



Review by Andy Pearson

I had honestly thought that my days of buying weighty textbooks at high prices were long since passed but I received an email late last year from Bob Hanlon, a Chemical Engineer now teaching at MIT, which changed my mind. Bob had read a piece I had written for an American journal about the Rankine 2020 conference and associated celebrations and he wrote to tell me how much he appreciated the fact that William Rankine was receiving recognition for his work in the development of thermodynamics.

Bob has spent almost twenty years developing his unique presentation style to help to demystify the science of heat and work. The result can best be described as “popular science without dumbing down”. The book is in four parts and starts with a short analysis of the origins of the universe 13.75 billion years ago. Bob’s style is not only to give the basic facts of the science but to explain how the discoveries were made, adding character and context to the individuals who re-wrote our understanding of everything around us. Part I (The Big Bang”) is short – about 30 pages – and Part II (The Atom) is only about twice as long, following the same pattern of briefly explaining the science as we currently know it and then delving into the stories behind the journey.

The essence of the book is in Parts III and IV. First the story of Energy and the Laws of Conservation is explained and then Entropy and the Laws of Thermodynamics are tackled. This may seem daunting and not a book that you would open for pleasure but the style of presentation and the array of sub-plots and side-stories that are presented make it a compelling read. Each of the four parts starts with a “Discovery map”; a graphic that lays out the key elements of the story and sets the scene for what follows.

I found the telling of Sadi Carnot’s story particularly interesting and enlightening. Carnot is often portrayed as a “lone wolf”, battling against scientific orthodoxy on his own and failing to establish his ideas because he had no powerful supporters. Bob explains that he was educated from the age of 16 at the École Polytechnique in Paris where the staff at that time included Ampère, Gay-Lussac, Arago and Poisson and their international contacts included Biot, von Humboldt, Foucault and Faraday. Far from being on the periphery, he was at the centre of scientific thought at the beginning of the nineteenth century. However Carnot had the misfortune to graduate from the École as a second lieutenant in Napoleon Bonaparte’s army one year before the Battle of Waterloo which rather dented his military career prospects. The rest of the world had the misfortune of Carnot’s death from cholera at the age of 36, before he had managed to reconcile his ideas with contemporary thinking. This was a double misfortune because almost all of Carnot’s papers were burned after his death due to the fear of infection and so the development of the science of heat and work was set back almost twenty five years.

The dedication at the opening of Bob’s prologue to “Block by Block” says “For those of us who didn’t get it the first time around.” I certainly count myself among that number – anyone who has ever looked at any aspect of the physical or chemical world around them and wondered “why?” will enjoy this book. As for the price, well it’s less than 50p per page.

PS - Join me in celebrating Sadi’s 225th birthday on June 1st.

Can you help?

The Institution has been asked whether members would be interested in offering short (10 minute) presentations on the opportunities that are available in engineering careers for Maths graduates. The presentations would be delivered to undergraduate students in their final year and would cover a range of engineering fields. Several ideas have already been suggested but if you have an example of an interesting way in which engineering can benefit from the input of skills and ideas from Maths graduates please get in touch with the Secretary. We hope to be able to deliver this series of talks at an event on campus in the autumn, so don’t wait until after the summer holidays.

Have your say

There are so many topics that affect and interest engineers, if there is a matter you would like to raise why not contribute an opinion piece to our new website? Please visit the site and have a look at the existing opinions – lots there to get you thinking!



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Ian Ramsay (1932–2021)



Ian Ramsay was a Shipbuilder and Naval Architect, a Fellow of the Royal Institution of Naval Architects, a Fellow of the Institution of Engineers in Scotland (formerly the Institution of Engineers and Shipbuilders in Scotland) and a Chartered Engineer. He was educated at Rutherglen Academy and studied Naval Architecture at the Royal Technical College (now the University of Strathclyde) and during this college period from 1949 to 1954, served a full premium apprenticeship as a shipbuilder and naval architect with A & J Inglis Ltd at Pointhouse Shipyard, Glasgow, on the site of the Riverside Museum.

After national service he joined Lloyd's Register of Shipping as a ship surveyor until returning to Inglis in 1960 at the behest of the shipyard's owners, Harland & Wolff, as General Manager where he remained until the shipyard was closed by its owners in 1963. He then joined Yarrow & Co as Hull Estimator but was soon appointed Shipyard Manager and, in 1971 was appointed to the Board of the newly constituted Yarrow (Shipbuilders) Ltd as Shipbuilding Director.

With a pending unwelcome appointment to British Shipbuilders' Headquarters in Newcastle in 1983, he retired from Yarrow and joined the Board of Sir J H Biles & Co, a long-established Glasgow firm of consulting naval architects and marine engineers where he was heavily

involved with the modernization of the Hindustan Shipyard in Visakhapatnam, India working alongside James Lenaghan (former President of IESIS and past Managing Director of Fairfield Shipbuilding and Engineering). Shortly thereafter, he was instrumental in forming Sir J. H. Biles (Naval Services) where he served as Managing Director and eventually Chairman providing an engineering and refit service for the Royal Navy, Royal Fleet Auxiliary, and the Royal Maritime Auxiliary Services along with Royal Yacht Britannia. The foregoing was in addition to the routine marine work of Sir J. Biles & Co including acting as marine Superintendents for the multi-purpose cargo ships of Ghana's Black Star Line.

He retired from active business in 1997 upon reaching the age of 65 but retained an executive interest in the operation of the paddle steamer Waverley where he served as Safety Director from 1996 until 2014 during which time, he was responsible for creating and introducing a safety regime complying with the International Safety Management System; one of the first British shipping companies to obtain

international accreditation – so that Waverley could call at Isle of Man ports!

Ian served on the Technical Committee of Lloyd's Register of Shipping for 10 years until 2000 and for 7 years after retirement was the Secretary of the Institution of Engineers & Shipbuilders in Scotland. In recognition of his outstanding contributions, he was awarded the Institution's Sir Robert Easton Award in 2014.

Ian was involved with the restoration of the Clyde Maritime Trust's three-masted barque Glenlee which returned to the Clyde from Spain in 1993. During this time, he served as a Trustee and latterly as technical advisor, a role he continued, despite failing health, to the end.

A remarkable man who, as a shipbuilder and Naval Architect, straddled the change from riveted to welded steel ship construction. Ian wrote a book "Glenlee How a Riveted Sailing Ship was Built" which documents the building of an iron sailing ship constructed in 1896; by ship builders based in a Port in Glasgow. His historical knowledge of Clyde shipbuilding was second to none and one who will be greatly missed by all.



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