



South Branch



Sussex and Kent



South Eastern Region

PROGRAMME OF EVENTS 2021/2022

~~~~~

## Joint Programme Booklet

IET Kent and Sussex and the IMechE South Eastern region have cooperated for some years in producing a booklet containing a chronologically ordered list of events. For some time, we have included events from the RCEA (Sussex) (an association of retired professional engineers), but this year we also include events from the Institution of Civil Engineers, South Branch.

At least for this season, our printed booklet is replaced by this pdf document.

## Visits and Events

The Institutions accept no responsibility for any loss, injury or inconvenience caused to members or guests in consequence of their attendance at events or visits. Members/guests who are concerned as to the availability of disabled access to any event/visit should enquire in the first instance to the person indicated in the programme. Failing this, any committee member will be willing to assist. Tickets/registration are/is shown as being required for all visits and certain meetings where numbers have to be restricted, and this is indicated within the programme. Where the event is shown as requiring tickets/registration, then the organiser or other named person in the programme should be contacted in the first instance, even though a physical ticket may not be required for every such indicated event.

All IET and IMechE events advertised in this booklet are open to members of the BCS, ICE, IET, IMArEST, IMechE, IOM and RAeS irrespective of the Institution organising the event and guests are

welcome at all non-ticketed events. Where the expression ‘TBC’ (to be confirmed) or ‘TBA’ (to be announced) are used, then members should look out for finalised details on the relevant organising institutions web site (see below).

## Programme Updates

From time-to-time circumstances require changes to the programme published in this booklet. Up to date programmes can be found on the following web sites:

|                                              |                                                                                                                                                                               |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Institution of Civil Engineers, South Branch | <a href="https://www.ice.org.uk/events">https://www.ice.org.uk/events</a>                                                                                                     |
| IET Kent Network                             | <a href="https://engx.theiet.org/local-networks/se1">https://engx.theiet.org/local-networks/se1</a>                                                                           |
| IET Solent Network                           | <a href="https://engx.theiet.org/local-networks/s3">https://engx.theiet.org/local-networks/s3</a>                                                                             |
| IET Surrey Network                           | <a href="https://engx.theiet.org/local-networks/se2">https://engx.theiet.org/local-networks/se2</a>                                                                           |
| IET Sussex Network                           | <a href="https://engx.theiet.org/local-networks/se3">https://engx.theiet.org/local-networks/se3</a>                                                                           |
| IMechE Sussex & Surrey                       | <a href="http://nearyou.imeche.org/near-you/UK/South-Eastern/Sussex---Surrey-Area/events">http://nearyou.imeche.org/near-you/UK/South-Eastern/Sussex---Surrey-Area/events</a> |
| IMechE Automotive Division Southern Centre   | <a href="http://nearyou.imeche.org/near-you/UK/South-Eastern/Southern-Automobile/events">http://nearyou.imeche.org/near-you/UK/South-Eastern/Southern-Automobile/events</a>   |
| Retired Chartered Engineers Association      | <a href="http://www.rceasussex.org.uk/">http://www.rceasussex.org.uk/</a>                                                                                                     |

## Events 2021

|                                                       |                                          |              |
|-------------------------------------------------------|------------------------------------------|--------------|
| <b>Worthing</b>                                       | <b>Tuesday 21<sup>st</sup> September</b> | <b>14:30</b> |
| <b>RCEA</b>                                           |                                          |              |
| <b>AGM and talk - London Curiosities and Oddities</b> |                                          |              |
| Presenter                                             |                                          |              |
| Synopsis                                              |                                          |              |
| Pavilion, Field Place, Worthing                       |                                          |              |
| Contact                                               |                                          |              |

|                                                       |                                        |              |
|-------------------------------------------------------|----------------------------------------|--------------|
| <b>Worthing</b>                                       | <b>Tuesday 12<sup>th</sup> October</b> | <b>14:30</b> |
| <b>RCEA</b>                                           |                                        |              |
| <b>Railway Rolling Stock – a generation of change</b> |                                        |              |
| Presenter                                             |                                        |              |
| Synopsis                                              |                                        |              |
| Pavilion, Field Place, Worthing                       |                                        |              |
| Contact                                               |                                        |              |

|                                                                                                                                                                                                                                                                                                                                                       |                                        |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------|
| <b>Webinar</b>                                                                                                                                                                                                                                                                                                                                        | <b>Tuesday 26<sup>th</sup> October</b> | <b>19:00</b> |
| <b>IET Sussex</b>                                                                                                                                                                                                                                                                                                                                     |                                        |              |
| <b>How to use light to make aircraft lighter</b>                                                                                                                                                                                                                                                                                                      |                                        |              |
| Dr Christopher Holmes, Optoelectronics Research Centre, University of Southampton                                                                                                                                                                                                                                                                     |                                        |              |
| Next generation aircraft shall use more optical fibre technology in order to reduce an aircraft's total weight. This weight saving shall make flight more efficient and so environmentally greener. This talk discusses the research being conducted at the University of Southampton including advances in new types of optical fibre for aerospace. |                                        |              |
| Zoom Webinar                                                                                                                                                                                                                                                                                                                                          |                                        |              |
| Registration required: <a href="https://communities.theiet.org/communities/home/200">https://communities.theiet.org/communities/home/200</a>                                                                                                                                                                                                          |                                        |              |

|                                                                                                                                                                                                                              |                                        |              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------|
| <b>Webinar</b>                                                                                                                                                                                                               | <b>Tuesday 2<sup>nd</sup> November</b> | <b>19:00</b> |
| <b>IET Sussex</b>                                                                                                                                                                                                            |                                        |              |
| <b>6G Wireless: A New Strategic Vision</b>                                                                                                                                                                                   |                                        |              |
| Regius Professor Rahim Tafazolli FREng, Director of the 6GIC, University of Surrey                                                                                                                                           |                                        |              |
| Now is the time to push forward the programme of research and development for the next generation of wireless: 6G, likely to be commercialised from 2030 and beyond.                                                         |                                        |              |
| The University of Surrey vision for 6G redefines 'teleportation' as a new wireless paradigm combining:                                                                                                                       |                                        |              |
| <ul style="list-style-type: none"> <li>• Ultra-high resolution</li> <li>• Immersive user experiences</li> <li>• Integration of human senses and ambient data</li> <li>• Fusion of the physical and virtual worlds</li> </ul> |                                        |              |
| All supported by massive machine intelligence, and horizontally integrated networks. 6G must take a new direction, not only to meet new and ongoing market needs, but also to be economic viability.                         |                                        |              |
| Zoom Webinar                                                                                                                                                                                                                 |                                        |              |
| Registration required: <a href="https://communities.theiet.org/communities/home/200">https://communities.theiet.org/communities/home/200</a>                                                                                 |                                        |              |

|                                                                |                                        |              |
|----------------------------------------------------------------|----------------------------------------|--------------|
| <b>Worthing</b>                                                | <b>Tuesday 9<sup>th</sup> November</b> | <b>14:30</b> |
| <b>RCEA</b>                                                    |                                        |              |
| <b>novaSAR – A new concept in earth observation satellites</b> |                                        |              |
| Presenter                                                      |                                        |              |
| Synopsis                                                       |                                        |              |
| Pavilion, Field Place, Worthing                                |                                        |              |
| Contact                                                        |                                        |              |

|                                                                                                                                                                                                                                                                                                                                              |                                         |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------|
| <b>Webinar</b>                                                                                                                                                                                                                                                                                                                               | <b>Tuesday 16<sup>th</sup> November</b> | <b>19:00</b> |
| <b>IET Sussex</b>                                                                                                                                                                                                                                                                                                                            |                                         |              |
| <b>Can Artificial Intelligence help make our critical infrastructure more resilient?</b>                                                                                                                                                                                                                                                     |                                         |              |
| Dr Spyros Skarvelis-Kazakos, University of Sussex                                                                                                                                                                                                                                                                                            |                                         |              |
| Artificial Intelligence (AI) is a popular tool to help solve many technological problems, one of which is our ageing energy network and the new challenges it faces. Climate change, pandemics and other extreme events threaten the stability of our critical infrastructure. This lecture explores the usefulness of AI in this situation. |                                         |              |
| Zoom Webinar                                                                                                                                                                                                                                                                                                                                 |                                         |              |
| Registration required: <a href="https://communities.theiet.org/communities/home/200">https://communities.theiet.org/communities/home/200</a>                                                                                                                                                                                                 |                                         |              |

|                                                                                                                                                                                                                                                                                                                                                                                             |                                        |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------|
| <b>Webinar</b>                                                                                                                                                                                                                                                                                                                                                                              | <b>Tuesday 7<sup>th</sup> December</b> | <b>19:00</b> |
| <b>IET Sussex</b>                                                                                                                                                                                                                                                                                                                                                                           |                                        |              |
| <b>Advanced Manufacturing Techniques to accelerate Small Modular Reactor Deployment</b>                                                                                                                                                                                                                                                                                                     |                                        |              |
| David Stoddart, Sheffield University (Nuclear Advanced Manufacturing centre)                                                                                                                                                                                                                                                                                                                |                                        |              |
| Brief introduction to the Nuclear AMRC (Advanced Manufacturing Research Centre).<br>Why Small Modular Reactors? Overview of advantages of SMR when compared to gigawatt size reactors.<br>Advanced manufacturing techniques – A look at some of the techniques being developed by the Nuclear AMRC to accelerate manufacture and improve quality.<br>Opportunities for the UK Supply chain. |                                        |              |
| Zoom Webinar                                                                                                                                                                                                                                                                                                                                                                                |                                        |              |
| Registration required: <a href="https://communities.theiet.org/communities/home/200">https://communities.theiet.org/communities/home/200</a>                                                                                                                                                                                                                                                |                                        |              |

|                                                                                                                           |                                         |              |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------|
| <b>Worthing</b>                                                                                                           | <b>Tuesday 14<sup>th</sup> December</b> | <b>14:30</b> |
| <b>RCEA</b>                                                                                                               |                                         |              |
| <b>Alternatives to the high carbon internal combustion engine including, hydrogen, fuel cell and electric propulsion.</b> |                                         |              |
| Gerard Sauer                                                                                                              |                                         |              |
| The title says it all.                                                                                                    |                                         |              |
| Pavilion, Field Place, Worthing                                                                                           |                                         |              |
| <a href="http://www.rceasussex.org.uk/">http://www.rceasussex.org.uk/</a>                                                 |                                         |              |

## Events 2022

|                                                                                                                                                                                                                                          |                                |              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|
| <b>Worthing</b>                                                                                                                                                                                                                          | <b>11<sup>th</sup> January</b> | <b>14:30</b> |
| <b>RCEA</b>                                                                                                                                                                                                                              |                                |              |
| <b>History of weather forecasting</b>                                                                                                                                                                                                    |                                |              |
| Ian Currie, Fellow Royal Meteorological Society. Freelance weather consultant                                                                                                                                                            |                                |              |
| Starting from the days when many people worked out of doors and were attuned to what the clouds and wind were telling us, to a developing knowledge of airmasses, jet streams, radar, satellites and use of ever greater computer power. |                                |              |
| Field Place                                                                                                                                                                                                                              |                                |              |
| <a href="http://www.rceasussex.org.uk/">http://www.rceasussex.org.uk/</a>                                                                                                                                                                |                                |              |

|                                                                                                                                                                                                                                                                                                                                                                           |                                        |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------|
| <b>Webinar</b>                                                                                                                                                                                                                                                                                                                                                            | <b>Tuesday 11<sup>th</sup> January</b> | <b>19:00</b> |
| <b>IET Sussex</b>                                                                                                                                                                                                                                                                                                                                                         |                                        |              |
| <b>Antennas in Laptops, Tablets and Foldable Devices</b>                                                                                                                                                                                                                                                                                                                  |                                        |              |
| Marc Harper, Microsoft                                                                                                                                                                                                                                                                                                                                                    |                                        |              |
| The antenna designs of our speaker, the lead antenna architect and Senior Director of Antenna Design for Microsoft in Seattle, USA, have been reproduced as more than 500 million antennas (Wi-Fi, Bluetooth, GPS, etc.) in laptop computers, PlayStations and other computer accessories. He will provide us with insights on antenna design, constraints and solutions. |                                        |              |
| Zoom Webinar                                                                                                                                                                                                                                                                                                                                                              |                                        |              |
| Registration required: <a href="https://enqx.theiet.org/local-networks/se3">https://enqx.theiet.org/local-networks/se3</a>                                                                                                                                                                                                                                                |                                        |              |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------|
| <b>Webinar</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Thursday 13<sup>th</sup> January</b> | <b>18:00</b> |
| <b>Institution of Civil Engineers – South Branch</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                         |              |
| <b>Sustainable Travel in SE Dorset</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                         |              |
| Helen Littler CEng MICE and Mike 'Gorman CEng MICE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                         |              |
| Gear Change and LTN 1/20 Cycle Infrastructure Design brought about a step change in design standards and ambition when designing for cyclists. In conjunction with significant investment, it seeks to make walking and cycling a preferred choice of travel for short trips. Supporting this step change is the Transforming Cities Fund (TCF) programme. This talk will focus on the South East Dorset Transforming Cities Fund delivery of cycling, walking and public transport infrastructure highlighting the challenges and opportunities of delivering this tune of infrastructure for communities |                                         |              |
| Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                         |              |
| Registration required: <a href="https://www.ice.org.uk/events/sustainable-infrastructure-online">https://www.ice.org.uk/events/sustainable-infrastructure-online</a>                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                         |              |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------|
| <b>Webinar</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Tuesday 1<sup>st</sup> February</b> | <b>19:00</b> |
| <b>IET Sussex</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |              |
| <b>Once explorers, always explorers - ESA's space science and exploration missions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |              |
| Professor Mark McCaughrean, Senior Advisor for Science & Exploration - Senior Advisor for Science & Exploration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |              |
| The European Space Agency's science and exploration missions have been much in the news in recent years, with exciting results from its Gaia Milky Way surveyor and other astronomical observatories, the decade-long adventure of the Rosetta comet-chasing spacecraft and its Philae lander, the ExoMars Trace Gas Orbiter at the Red Planet, and the launch of the international BepiColombo and Solar Orbiter missions to Mercury and the Sun, respectively. In this talk, I'll give you some insight into these missions and others in ESA's fleet, their challenges and scientific discoveries, and tell you what's coming next as we continue our exploration of the solar system and the wider Universe beyond. These include a new mission to Jupiter and new space telescopes spanning the electromagnetic spectrum, as well as preparations for humans to return to the Moon and travel beyond. |                                        |              |
| Zoom Webinar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                        |              |
| Registration required: <a href="https://engx.theiet.org/local-networks/se3">https://engx.theiet.org/local-networks/se3</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                        |              |

|                                                                                                                                                                                                                                                                     |                                |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------|
| <b>Worthing</b>                                                                                                                                                                                                                                                     | <b>8<sup>th</sup> February</b> | <b>14:30</b> |
| <b>RCEA</b>                                                                                                                                                                                                                                                         |                                |              |
| <b>Sun and space technology for solar observations</b>                                                                                                                                                                                                              |                                |              |
| Chris Brockley-Blatt BEng (Hons), CEng, FI Meche, MAPM Senior Project Manager                                                                                                                                                                                       |                                |              |
| The Solar Orbiter is currently observing the Sun with 10 specialised instruments on board. For 13 years, our speaker (from the Mullard Space Science Laboratory) has been project manager for one of these, the Solar Wind Analyser. She will describe the project. |                                |              |
| Field Place                                                                                                                                                                                                                                                         |                                |              |
| <a href="http://www.rceasussex.org.uk/">http://www.rceasussex.org.uk/</a>                                                                                                                                                                                           |                                |              |

|                                                                                                                                                                                                                                                                              |                                 |                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------|
| <b>Southampton and online</b>                                                                                                                                                                                                                                                | <b>10<sup>th</sup> February</b> | <b>17:30 for 18:00</b> |
| <b>Institution of Civil Engineers – South Branch</b>                                                                                                                                                                                                                         |                                 |                        |
| <b>Q&amp;A: How is Net Zero Carbon being achieved in practice?</b>                                                                                                                                                                                                           |                                 |                        |
| Panel: Nick Flinn, Shell and Chitra Nadarajah, Hampshire County Council                                                                                                                                                                                                      |                                 |                        |
| The ICE is delighted to announce the South branch will be hosting an in-person panel discussion about how Net Zero Carbon is being achieved in practice. This Q&A event will be Chaired by Emily Duncombe from Arup and open to the audience so please bring your questions. |                                 |                        |
| University of Southampton, Bolderwood Campus and online                                                                                                                                                                                                                      |                                 |                        |
| <a href="https://www.ice.org.uk/events/q-and-a-southampton">https://www.ice.org.uk/events/q-and-a-southampton</a>                                                                                                                                                            |                                 |                        |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                         |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------|
| <b>Webinar</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Tuesday 15<sup>th</sup> February</b> | <b>19:00</b> |
| <b>IET Sussex &amp; IMechE ADSC</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                         |              |
| <b>Looking at the road ahead reduces NOx and Soot simultaneously and improves the fuel economy of the cars</b>                                                                                                                                                                                                                                                                                                                                                                                |                                         |              |
| Dr Arash Moradinegade Dizqah, University of Sussex                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                         |              |
| Communication between vehicles provides information of the road ahead. We demonstrated that two seconds of this look-ahead information improves the torque tracking, Nox and soot emissions by, respectively, 6.8%, 10.3% and 8.0%. A hierarchical controller is proposed to exploit the look-ahead information and directly commands turbocharger and dual-loop EGRs. The worst-case computational time of 8.92 ms, demonstrates that the controller is suitable for different applications. |                                         |              |
| Zoom Webinar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                         |              |
| Registration required: <a href="https://engx.theiet.org/local-networks/se3">https://engx.theiet.org/local-networks/se3</a>                                                                                                                                                                                                                                                                                                                                                                    |                                         |              |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------|
| <b>Webinar</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Tuesday 1<sup>st</sup> March</b> | <b>19:00</b> |
| <b>IET Sussex</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |              |
| <b>Soft Material Technologies for Bioinspired Robots</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |              |
| Dr Hareesh Godaba, Lecturer in Engineering and Design - School of Engineering and Informatics, University of Sussex                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                     |              |
| Nature, with its multitude of forms and species, is a great source of inspiration for engineering. The biological muscles in humans, bioluminescence in octopus and adhesive feet in lizards all provide insights into new technologies that can be created to enable a range of applications. Recent advances in soft active materials offer us the opportunity to develop technologies that enable us to replicate what we see in nature and unravel new applications. In this talk, Dr Godaba will discuss his experiences in developing and investigating fundamental soft material technologies such as dielectric elastomer artificial muscles, self-healing electroluminescent. |                                     |              |
| Zoom Webinar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |              |
| Registration required: <a href="https://engx.theiet.org/local-networks/se3">https://engx.theiet.org/local-networks/se3</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |              |

|                                                                                                                                                          |                             |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------|
| <b>Worthing</b>                                                                                                                                          | <b>8<sup>th</sup> March</b> | <b>14:30</b> |
| <b>RCEA</b>                                                                                                                                              |                             |              |
| <b>Submarines through the ages</b>                                                                                                                       |                             |              |
| Captain Nigel Manger RN retired. (An engineer Submariner)                                                                                                |                             |              |
| The history and technology of submarines from early WW1 to the latest nuclear subs. Ian was a senior engineering officer and has many anecdotes to tell. |                             |              |
| Field Place                                                                                                                                              |                             |              |
| <a href="http://www.rceasussex.org.uk/">http://www.rceasussex.org.uk/</a>                                                                                |                             |              |

|                                                                                                                            |                                      |                        |
|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------|
| <b>Webinar</b>                                                                                                             | <b>Tuesday 15<sup>th</sup> March</b> | <b>18:30 for 19:00</b> |
| <b>IET Sussex</b>                                                                                                          |                                      |                        |
| <b>Development of a Combined MR Imaging and Radiotherapy Treatment System</b>                                              |                                      |                        |
| Dr Ian Shinton, Elekta                                                                                                     |                                      |                        |
| Synopsis                                                                                                                   |                                      |                        |
| The Richmond Building, University of Sussex, Brighton, BN1 9QT                                                             |                                      |                        |
| Refreshments from 18:30                                                                                                    |                                      |                        |
| Registration required: <a href="https://engx.theiet.org/local-networks/se3">https://engx.theiet.org/local-networks/se3</a> |                                      |                        |



|                                                                                                                                                                                                                                                                                                                                                             |                                     |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------|
| <b>Webinar</b>                                                                                                                                                                                                                                                                                                                                              | <b>Tuesday 5<sup>th</sup> April</b> | <b>19:00</b> |
| <b>IET Sussex</b>                                                                                                                                                                                                                                                                                                                                           |                                     |              |
| <b>Synchronous Condensers – Supporting the roadmap to 100% Renewables</b>                                                                                                                                                                                                                                                                                   |                                     |              |
| Mr Christian Payerl, ABB AB                                                                                                                                                                                                                                                                                                                                 |                                     |              |
| Transmission systems are facing increased challenges from the rise of renewables and inverter-based generation on the Grid, coupled with a decline in inertia historically provided by large conventional power station generators. This presentation explains what Synchronous Condensers are and why, when and where they are needed to help the UK Grid. |                                     |              |
| Zoom Webinar                                                                                                                                                                                                                                                                                                                                                |                                     |              |
| Registration required: <a href="https://enqx.theiet.org/local-networks/se3">https://enqx.theiet.org/local-networks/se3</a>                                                                                                                                                                                                                                  |                                     |              |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                      |              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------|
| <b>Worthing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Tuesday 12<sup>th</sup> April</b> | <b>14:30</b> |
| <b>RCEA</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                      |              |
| <b>Hydrogen – can it decarbonise our lives?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                      |              |
| Prof Andrew Atkins and Dr Penny Atkins                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |              |
| Hydrogen has been identified as having a key role in our journey to net zero carbon by 2050. The UK Hydrogen Strategy identifies it as a replacement for the hydrocarbon fuels we rely on that is both clean at point of use and low carbon. The Strategy sets out an ambition for a thriving hydrogen economy by 2030 producing 5GW of the gas. But how will we make, store, distribute and use this energy vector? There are a range of technological options with widely varying commercial and environmental impacts. This talk will present an overview of recent technological developments in the developing hydrogen sector to understand the role it can play in efforts to reduce the environmental impact of our everyday activities. |                                      |              |
| Field Place                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                      |              |
| <a href="http://www.rceasussex.org.uk/">http://www.rceasussex.org.uk/</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                      |              |

|                                                                                                                                                                                                                                                                                  |                         |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------|
| <b>Webinar</b>                                                                                                                                                                                                                                                                   | <b>Tuesday 19 April</b> | <b>19:00</b> |
| <b>IET Sussex</b>                                                                                                                                                                                                                                                                |                         |              |
| <b>The Zero-Carbon Council</b>                                                                                                                                                                                                                                                   |                         |              |
| Paul Nicholls, Brighton and Hove City Council                                                                                                                                                                                                                                    |                         |              |
| This talk will explore how Brighton and Hove is facing the challenges of building a convenient electric vehicle charging infrastructure for residents and visitors. We'll look at the part this has to play in meeting our ambition of becoming net carbon neutral city by 2030. |                         |              |
| Zoom Webinar                                                                                                                                                                                                                                                                     |                         |              |
| Registration required: <a href="https://enqx.theiet.org/local-networks/se3">https://enqx.theiet.org/local-networks/se3</a>                                                                                                                                                       |                         |              |

|                                                                                                                                                                                                                                                                                                                                                                    |                                    |                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------|
| <b>Crawley</b>                                                                                                                                                                                                                                                                                                                                                     | <b>Tuesday 10<sup>th</sup> May</b> | <b>18:45 for 19:30</b> |
| <b>IET Sussex</b>                                                                                                                                                                                                                                                                                                                                                  |                                    |                        |
| <b>An Appreciation of the Mars Landers</b>                                                                                                                                                                                                                                                                                                                         |                                    |                        |
| Professor Mike Underhill                                                                                                                                                                                                                                                                                                                                           |                                    |                        |
| Successful Mars landings started with Viking 1 in 1976 and Viking 2 in 1977. This talk is an appreciation of what is being achieved by the 5 Rovers now operational on Mars, and how it has been achieved. Published results so far and 'mission simulation videos' will be shown. These Mars Landers really are a major success story and brilliant achievements. |                                    |                        |
| Studio Theatre, The Hawth Theatre, Crawley and simultaneous Zoom Webinar.<br>Refreshments from 18:45                                                                                                                                                                                                                                                               |                                    |                        |
| <i>Registration required: <a href="https://enqx.theiet.org/local-networks/se3">https://enqx.theiet.org/local-networks/se3</a> for either the Studio Theatre or for the Webinar.</i>                                                                                                                                                                                |                                    |                        |

|                                                                                                                                                                                     |                                    |                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------|
| <b>Falmer</b>                                                                                                                                                                       | <b>Tuesday 24<sup>th</sup> May</b> | <b>18:30 for 19:00</b> |
| <b>IET Sussex</b>                                                                                                                                                                   |                                    |                        |
| <b>TBD</b>                                                                                                                                                                          |                                    |                        |
| Presenter                                                                                                                                                                           |                                    |                        |
| Synopsis                                                                                                                                                                            |                                    |                        |
| The Richmond Building, University of Sussex, Brighton, BN1 9QT Crawley and simultaneous Zoom Webinar.<br>Refreshments from 18:30                                                    |                                    |                        |
| <i>Registration required: <a href="https://enqx.theiet.org/local-networks/se3">https://enqx.theiet.org/local-networks/se3</a> for either the Studio Theatre or for the Webinar.</i> |                                    |                        |