

Institution of Fire Engineers (SA)

Online AGM/Conference

Green Energy Risks and Green firefighting technologies Conference

23rd November 2023

PROGRAMME

Annual General Meeting IFE Members only

Times	
08:00 - 09:30	<p>Annual General Meeting IFE Members only</p> <ol style="list-style-type: none"> 1. Apologies 2. Minutes of the previous AGM 3. Matters arising from the Minutes 4. Secretary/Treasurer Report 5. General Assembly Representative Report 6. Council voting results 7. Outgoing President's Address 8. Inauguration of new President 9. Incoming President's Address 10. General / Discussion & Close
09:45 - 10:00	Awards ceremony presentation
Conference - Members and Delegates	
10:00 - 10:45	<p>Paper 1: Firefighter's challenges around e-mobility</p> <p>Fundamental technical specifications of electrical vehicles and how to safely apply the high voltage disconnection procedures to common electrical vehicles. Different tactics on how to extinguish vehicle high voltage battery fires and select the best strategy for their local fire and emergency service</p> <p>Hiten Parmar <i>Executive, Advisor and Thought Leader Empowering Electric Mobility</i></p> <p>Hiten stands as a lead executive, thought leader and industry expert extending over 15 years in profession. As Director of South Africa's national electric mobility programme, he delivers to the mandate of enabling, facilitating and mobilising electric mobility through multi-stakeholder engagement across the public and private sectors, both locally and internationally. Encompassed with a Master's Degree in Electrical Engineering and Honours in Business Administration, Hiten's passion extends across contributing to technological advancements within the industry globally through the deployment of interventions to solve major economic, competitiveness and societal challenges.</p>
10:45 - 11:00	Interactive discussions
11:00 - 11:15	Tea Break
11:15 - 12:00	<p>Paper 2: Fire safety when charging electric vehicles covering:</p> <ul style="list-style-type: none"> • Fire safety when charging electric vehicles and the hazards relating to EVs • Lithium-ion batteries - thermal-runaway/battery-chemistry/battery-cell-arrangements • EV car fire scenarios and fire loading • Fire spread in enclosed car parks and examples of large multi-storey car park fires • Fire safety recommendations for EV charging stations • Fire control for Evs <p>Adrian J Butler, Bsc(Hons) Msc(Eng) ACGI Ceng MEI ACII <i>Principal Consultant FPA</i></p> <p>Adrian is a Chartered Engineer with extensive experience as a risk engineer and technical leader in the insurance sector. He has conducted risk surveys in around 35 countries, providing expert advice to industrial and process facilities. Adrian has also developed technical guidance, fire and explosion models, and risk engineering-related software tools. He is a member of the Energy Institute and the Society of Fire Protection Engineers.</p>
12:00 - 12:15	Interactive discussions

LUNCH BREAK

13:00 - 13:45

Paper 3: Lithium-ion Battery Energy Storage Systems

Allan will be presenting a paper on Lithium-ion battery energy storage systems covering the following:

- The hazards of Lithium-ion battery energy storage systems
- Construction and location of storage systems
- Protection
- Equipment and processes
- Operation, maintenance and training

Allan Macpherson *Operations Vice President, London Operations Chief Engineer FM Global Voyager Place*

Allan has worked for over 30 years for FM Global in their Loss Prevention Engineering Department. FM Global is the world's largest commercial and industrial property insurance and risk management organisation specialising in property protection. For the last 23 years he has been the Chief Engineer for their London Operation covering the UK, Ireland, Nordics, the Middle East and English speaking Africa. In addition to technical oversight of the work of FM Global London Operation's risk engineers, he works with the Research Department to identify areas where research or testing is needed, ensure rapid and consistent application of the results of our fire research and to help in the development of new fire protection standards. He is also responsible for day to day technical questions that arise from work with their insured customers. About 70% of his work is concerned with fire and explosion hazards. Allan is a Fellow of the Institution of Mechanical Engineers.

13:45 - 14:00

Interactive discussions

14:00 - 14:15

Tea Break

14:15 - 15:00

Paper 4: Battery fire prevention and mitigation research

Stored energy poses a risk of uncontrolled release, which can endanger individuals, equipment, and the environment. Hazards are inherent in all energy storage systems, and some can be easily addressed while others necessitate careful planning and execution to maintain safety. Lithium-ion battery technology is currently the primary method for grid-scale energy storage and is also widely used in consumer electronics and transportation. The primary dangers associated with lithium-ion systems include electric shock, fire, and chemical explosion. This paper will cover:

- Lessons learned from recent grid-scale energy storage system failures
- Emergency response plan development
- First responder training for these kinds of events.

Lakshmi Srinivasan - *M.Sc Principal Team Lead, Energy Storage at EPRI | 2022 CELI Fellow*

Lakshmi Srinivasan is a Sr. Technical Leader within the Energy Storage program at EPRI. She leads the battery safety research program developing new learnings and guidance for the industry. Lakshmi also does research in emerging storage and controls technologies, evaluating the performance and viability of new products. She aims to incorporate social equity and environmental justice into EPRI's storage research. She serves on technical panels for standards making bodies, such as IEEE and CSA. Prior to EPRI, Lakshmi spent ten years commercialising various storage technologies, including Compressed-Air Energy Storage, Lithium-ion batteries and flow batteries. Lakshmi earned a B.E. in Mechanical Engineering from Dartmouth College and a M.Sc in Energy Science and Technology from ETH Zurich.

15:00 - 15:15

Interactive discussions

PROGRAMME SUBJECT TO CHANGE