

## On-Line Workshop: Instrumentation Demands for Hydrogen & Bio-Fuels Thursday, 6th May 2021

| Agenda (Time zone: CET) |   |
|-------------------------|---|
| 12:00                   | Welcome and Introduction<br>Ralf Obertacke (Siemens Energy), Ian Macafee (Oxsensis), Kamran Iqbal (Oxsensis)  |
|                         | Session 1: Combustion challenges (Chair: Pete Loftus)   |
| 12:20                   | 1.1 Cardiff University Gas Turbine Research Centre - Operational experiences with hydrogen, ammonia and bio-fuels.  Stephen Morris (Cardiff University) |
| 12:40                   | 1.2 Combustion Challenges of Sustainable Gas Turbine Fuels – Focus on Hydrogen Peter Griebel (DLR)  |
| 13:00                   | 1.3 Instrumentation needs for hydrogen co-combustion testing in heavy duty gas turbines Hannes Laget (Engie)  |
| 13:20                   | Coffee break (15 min)   |
| 13:35                   | Elevator pitches #1   |
|                         | Session 2: Control system challenges (Chair: Pete Loftus)   |
| 13:50                   | 2.1 Measurement challenges in hydrogen fuelled industrial gas turbines  Jenny Larfeldt, Björn Karlsson (Siemens Energy)                                 |
| 14:10                   | Panel Discussion to evolve a Requirements Consensus Chair: Bjoern Karlsson  |
| 14:50                   | Coffee break (15 min)   |
| 15:05                   | Elevator pitches #2   |
|                         | Session 3: Applicable sensing technologies (Chair: Pete Loftus)   |
| 15:20                   | 3.1 Traceable Measurement of Hydrogen Thomas Kappes, Ehrler GmbH, ep-e.com (EP Ehrler Prüftechnik Engineering GmbH)                                     |
| 15:40                   | 3.2 Characterisation And Validation Of An Optical Pressure Sensor For Combustion Monitoring At Low Frequency Gianluca Nicchiotti (Meggitt)              |
| 16:00                   | Elevator pitches #3   |
| 16:15                   | 3.3 Fast responding, future proof gas composition analysis using Raman technology Michel Eskes (Hobre)  |
| 16:35                   | Coffee break (15 min)   |
| 16:50                   | 3.4 Progress on Optical instrumentation techniques for advanced gas turbine combustion systems Ralf Pechstedt, Ian Macafee (Oxsensis)                   |
| 17:10                   | Discussion around the remaining capability gaps and action needed to overcome them Chair: lan McAfee  |
| 17:40                   | Closing remarks   |
| 17:45                   | End   |