Day 1

11:00	Registration and refreshments
12:00	Lunch
12:45	**Welcome and introductions** Brinkert & Romero-Calvo, *Chairs of Scientific Committee*
12:55	**Outline of Discussion format** *Royal Society of Chemistry Publishing Editors*
13:00	**Introductory Lecture – Spiers Memorial Lecture** (Session chair: Romero-Calvo) Michael Hecht *MIT, United States*
	Session 1 Interfacial processes in electrochemical energy conversion and storage devices I (Session chair: Krug)
14:00	**Electrocatalytic performance enhancement through coalescence-induced bubble dynamics: the case of the anode** Detlef Lohse University of Twente, *Netherlands*
14:05	**Quantification of the effect of ultrasound in PEM water electrolyser with operando neutron imaging and numerical simulations** Stratis Trachanias *City St George's, University of London, UK*
14:10	**Hydrogen production with a Pt wire tip and magnetic forces outperforms the terrestrial case in microgravity** Ömer Akay *ZARM - University of Bremen, Germany*
14:15	Discussion
15:30	Refreshments
16:00	**Shear Flow-Driven Bubble Growth and Detachment under Microgravity** Kerstin Eckert *Helmholtz-Zentrum Dresden-Rossendorf, Germany*
16:05	**Characteristics of gas bubble discharge from different PTLs of PEM water electrolysis in microgravity** Mizuo Muraki *Hokkaido University, Japan*
16:10	**Bubble detachment from circular cavities and flat surfaces** Ianto Cannon *University of Bremen, Germany*
16:15	**Effect of engineered cracks in the membrane electrode assembly catalyst layer on the performance of PEMWE cells** Jakob Raeymaekers *KU Leuven, Belgium*
16.20	Discussion
18:00	Lightning presentations (by invitation of the Scientific Committee)
18:30	Poster session and wine reception
20:00	End of sessions

Day 2

	Session 2 Interfacial processes in electrochemical energy conversion and storage devices II (Session chair: Matsushima)
09:00	**Water Transport Model for Cathode-Vapour-Feed Electrolysers** Sören Heizmann *Technical University of Munich, Germany*
09:05	**Coupling Phenomena between Mass Transfer and Microstructural Evolution in Electrochemical Devices** Yasuhiro Fukunaka *Kyoto University, Japan*
09:10	**Effects of microgravity on the photoelectrodeposition of Rh electrocatalyst nanoparticles and on the diffusion co effcient of the Rh3+ ions in the precursor electrolyte** Camilla Tossi *ZARM University of Bremen, Germany*
09:15	Discussion
10:30	Refreshments
11:00	**Gas bubble-regulated electrode polarization during microgravity electrolysis** Julian Becker *University of Bremen, Germany*
11:05	**Impact of Ferrofluid-Induced Bubble Removal on Two-Electrode Plate-Electrode Water Electrolysis** Ryuto Somiya *Nagoya institute of Technology, Japan*
11:10	**Preferential Nucleation Sites Regulate Hydrogen Bubble Evolution on Mesh Electrodes** Kensei Tsuburaya *The University of Tokyo, Japan*
11:15	Discussion
12:30	Lunch
	Session 3 Electrolyser designs for terrestrial and space systems I (Session chair: Romero-Calvo)
13:30	**The Incidence of Bubble Formation on the Cathode and Anode of a High-Performing 'Bubble-Free' Capillary-Fed Water Electrolysis Cell at Commercial Operating Temperature** Gerry F. Swiegers *University of Wollongong, Australia*
13:35	**Modelling and simulation of species transport in capillary-fed electrolysis cells** Dominik Krug *RWTH Aachen, Germany*
13:40	**Reaction Interface Engineering Enables Gravity-Independent Electrolysis** Zhiyuan Chen *VITO, Belgium*
13:50	Discussion
15:00	Refreshments
15:30	**Static Vapor Feed Electrolyzer Enabling Oxygen Generation without External Phase Separation in Microgravity** Zachary Lynn *Giner Labs, United States*
15:35	**Passive Magnetohydrodynamic Bubble Removal for Water Electrolysis Across Gravity Regimes** Theo St Francis *Georgia Institute of Technology, United States*
15:40	**Fundamental Materials Engineering of Robust Solid Oxide Electrolysis Cells for Terrestrial and Space Applications**

	Robert Price *University of St Andrews, UK*
15:45	Discussion
17:00	Close of sessions
18:30	Pre-dinner drinks
19:00	Conference dinner

Day 3

	Session 4 Electrolyser designs for terrestrial and space systems II (Session chair: Brinkert)
09:00	**Electrochemical CO2 reduction to CO towards Mars ISRU** Paulina Govea-Alvarez *VITO and Ghent University, Belgium*
09:05	**Designing electrochemical reactors for long-term space missions** Akash Raman *ZARM—Center of Applied Space Technology and Microgravity, University of Bremen, Germany*
09:10	**Temperature and electrolyte effects on the interfacial chemistry of graphite anodes in lithium ion batteries** Amy Marschilok *Stony Brook University, United States*
09:15	Discussion
10:30	Refreshments
	Session 5 Innovations in battery technologies for space applications (Session chair: Matsushima)
11:00	**Anode-Free LiNiO2 Battery: A High Energy Density, Low-Cost Cell Design** Gerard Bree *University of Warwick, UK*
11:05	**High-voltage gel polymer electrolyte integrated laser-induced graphene flexible micro-supercapacitors for wearable and sustainable aerospace electronics** Apurba Ray *German Aerospace Center (DLR), Cologne, Germany*
11:10	Discussion
12:00	**Concluding Remarks Lecture** (Session chair: Matsushima) Hitoshi Naito *Japan Aerospace Exploration Agency (JAXA), Japan*
12:30	**Acknowledgements**
13:00	**Close of meeting and lunch**

Presenting authors are indicated in the programme by an underline. The affiliation is for the presenting author. If the presenting author of your paper has changed since abstract selection please email events@rsc.org. Please note that this is a draft programme and timings may change.