

The International Flow Battery Forum 2017: Conference programme

Time	Tuesday 27 th June			
09:00	Check-in at Information Desk. Refreshments served.			
10:00	Introduction			Page number
	Welcome and introduction	Anthony Price	IFBF Secretary	
10:15	Keynote Address: Trials and demonstrations of large scale flow batteries and recent innovations	Maria Skyllas-Kazacos	University of New South Wales & Honorary Chairman of the IFBF	
	Session 1 –Recent progress in the flow battery industry			
	Installation of energy storage machines in the UK & Europe	Scott McGregor	redT	
	Demonstration of a 60MWh vanadium flow battery system for grid control in Japan	Toshikazu Shibata	Sumitomo	68
	Recent progress in the flow battery industry	Beatriz Ruiz	PVH Storage	
	A partnership of micro grids and flow batteries	Lars Moellenhoff	GLex energy storage (formerly Gildemeister)	
	Discussion:	Lars Moellenhoff, Scott McGregor, Gary Yang, Toshikazu Shibata, Beatriz Ruiz		
12:20	Lunch			
13:45	Session 2 - Prospects for the flow battery industry		Chairman: Anthony Price	
	The need for longer duration energy storage	Jonathan Radcliff	Birmingham Energy Institute	
	New market opportunities for flow batteries	Michael Salomon	Clean Horizon	
	The prospects for vanadium flow batteries in China	Mianyan Huang	Pu Neng	36
	Value propositions of flow batteries versus Li-ion batteries for electrical grid applications	Liyu Li	UniEnergy Technologies	
	Discussion: The prospects for the flow battery industry	Michael Salomon,, Mianyan Huang, Jonathan Radcliffe, Liyu Li		
15:45	Refreshments			
16:00	Session 3 – Case Studies		Chairman: Kathryn Toghil	
	Modular and flexible power conversion system optimized for flow batteries	Lothar Heinemann	Trumpf Hüttinger	34
	Scale-up of the iron-ferricyanide battery chemistry using WhEST's flow-battery scale-up platform	Ian Whyte	WhEST	80
	An organic RFB with alkaline aqueous-based electrolytes: Kemwatt's road to market strategy	Thibault Godet-Bar	Kemwatt	24
	Progress with the installation of the 2MW vanadium flow battery at Fraunhofer ICT	Peter Fischer	Fraunhofer ICT	
17:30 – 19:00	Evening Reception in the Exhibition Area –		Sponsored by Oxchem	

Time	Wednesday 28 th June			
08:00	Refreshments served.			
08:45	Introduction to Day 2	Anthony Price	IFBF Secretary	
09:00	Session 4 – Flow battery development; from science to business opportunity		Chairman: Maria Skyllas Kazakos	
	Keynote Address: Aqueous flow batteries utilizing organics and organometallics	Michael Aziz	Harvard University	12
	Recent progress in fully welded stack technology	Thorsten Seipp	Volterion GmbH	66
	Heat-to-power conversion with non-aqueous copper redox flow batteries	Pekka Peljo	EPFL	56
	Detection of electrolyte crossover by state of charge monitoring in vanadium flow batteries	Claudia Weidlich	DECHEMA-Forschungsinstitut	78
	New product development of Rongke Power's vanadium flow battery	Xiangkun Ma	Rongke Power	50
11:00	Refreshments			
11:30	Session 5 — Other considerations for flow batteries		Chairman: Anthony Price	
	A background brief: How does the battery industry approach safety?	Jonathan Buston	Health and Safety Laboratory	
	The vanadium supply chain	Terry Perles	TTP	58
	Panel: The supply of membranes, separators and other key components	Terry Perles , Bernd Bauer (Fumatech,) Jennifer Bricker (Chemours), and Christian Rudiger, SGL		
13:00	Lunch			
14:10	Session 6 - Materials and Manufacturing		Chairman: Michael Aziz	
	Flow field designs for batteries for application in electronics	Patrick Ruch	IBM Research - Zurich	64
	Extra large bipolar plates for redox-flow-batteries	Jan Girschik	Fraunhofer Institute for Environmental, Safety and Energy Technology	46
	Low-cost, non-hazardous all-iron battery for the developing world	Michael Tucker	Lawrence Berkeley National Laboratory	74
	Coordination chemistry flow battery	Steven Reece	Lockheed Martin Energy	62
	The best choice for stationary energy storage: a techno-financial study	Bjorn Hage	University of Hawaii / Lund University of Technology	28
	Session 7 – Posters & Refreshments		Chairman: Victoria Price	
15:30	Posters Speed Pitch			
16:00	Posters session & Refreshments			
18:30	Suggested departure for Evening Reception and Conference Dinner at the Museum of Science & Industry, Manchester.			
19:00	Reception and Dinner		Sponsored by Uni Energy Technologies and Rongke Power	

Time	Thursday 29 th June			
08:00	Refreshments served			
08:45	Introduction to Day 3	Anthony Price	IFBF Secretary	
09:00	Session 8 - Improving performance and reliability		Chairman: Jens Noack	
	Keynote Address: Development and application of high performance vanadium flow battery technology	Huamin Zhang	Dalian Institute of Chemical Physics, Chinese Academy of Sciences	82
	A high performance vanadium redox flow battery incorporating the VGCF™ electrode	Irwansyah	Showa Denko.	40
	MoO ₃ catalysts for high-power vanadium redox flow batteries	Liuyue Cao	University of New South Wales	20
	The electrode composition determines the faster half-cell in a vanadium redox flow battery	Jochen Friedl	Newcastle University	45
	Advanced redox flow battery systems	Wei Wang	Pacific Northwest National Laboratory	76
	Reducing electrolyte imbalance in the all vanadium redox flow battery	Arjun Bhattarai	Nanyang Technological University	14
11:00	Refreshments			
11:30	Session 9 -		Chairman: Christian Rudiger	
	Tackling capacity fading with amphoteric membranes	Fabio Oldenburg	Paul Scherrer Institut	54
	Probing pore-scale mass transfer in redox flow batteries	Fikile Brushett	Massachusetts Institute of Technology	16
	Hybrid polyoxometalate membranes with high conductivity and selectivity	Michael Tucker	Lawrence Berkeley National Laboratory	72
	Amphoteric ion exchange membranes for vanadium redox flow cells with higher transport selectivity and cycle stability	Lorenz Gubler	Paul Scherrer Institut	26
	The effect of cations on the proton transport of PFSA membranes in hydrogen-bromine flow batteries.	Natalia Mazur	Elestor	52
	High selectivity-conductivity reinforced perfluorosulfonic acid membranes for hydrogen bromine flow batteries	Yohanes Hugo	Elestor	38
13:00	Lunch			
14:00	Session 10 – Improving understanding		Chairman: Veronique Amstutz	
	Validation of KIT's flow battery model with manufacturers' data while maintaining confidentiality	Sebastian König	Karlsruhe Institute of Technology	42
	Characterisation of novel additives for use in the hybrid ZnBr flow battery	Declan Bryans	University of Strathclyde	18
	Charge strategies for soluble lead flow-batteries	Michael Lanfronconi	Westfalian University of applied Science	48
	Study of in situ locally resolved current density measurements in redox flow cells and stacks	Tobias Gerber	Fraunhofer Institute for Chemical Technology	22
	Evaluating performance and structural of flow batteries and implications for applications	Qiong Zheng	Dalian Institute of Chemical Physics, Chinese Academy of Sciences	84
	2D modelling of a hydrogen-bromine redox flow battery	Willem Haverkort	Delft University of Technology	32
	A multi scale approach to studying the performance of flow batteries	Martin Petit	IFP Energie Nouvelles	60
15:45	Closing discussions & presentations of awards for posters and papers	Anthony Price		
16:30	Conference Closes			
	Evening visit to Hyde Brewery and Reception at the Abel Heyward		Hosted by Vanitec	