

# THE INDIA-UK JOINT VIRTUAL CLEAN ENERGY CENTRE (JVCEC)



**2<sup>ND</sup> ANNUAL CONFERENCE PROGRAMME  
SEPTEMBER 12<sup>TH</sup> - 14<sup>TH</sup> 2019, MNIT JAIPUR**



# The India-UK Joint Virtual Clean Energy Centre (JVCEC)

## 2<sup>nd</sup> Annual Conference Programme 12<sup>th</sup> - 14<sup>th</sup> September 2019

**Venue:**

**Prabha Bhawan, Malaviya National Institute of Technology  
Jaipur  
Rajasthan, India**



*funded by*

Thursday, 12 September 2019 (Day 1)

12:00 to 13:00	<b>Registration</b>
13:00 - 14:00	<b>Session 1: Inauguration (Venue: Niti Sabhagar)</b>
	<ul style="list-style-type: none"> <li>Welcome by MNIT Jaipur (10 mins)</li> <li>DST (10 mins), UKRI (10 mins)</li> <li>UKICERI-JUICE Update by Chandan Chakraborty &amp; Murray Thomson (15 mins)</li> <li>IUCERCE-JUICE Update by B. G. Fernandes and Murray Thomson (15 mins)</li> </ul>
14:00 to 14:15	<b>Coffee/Tea Break</b>
14:15 to 16:15	<b>Session 2: Technical Presentations (Venue: Niti Sabhagar)</b>
14:15 - 14:30	<p>Distributed-MPPT Enabled PV-String Inverters Supported by a Low Pressure Compressed Air Energy Storage System for Reliable and Sustainable Operation of an ON/OFF Grid</p> <p><i>Presenters:</i> Dr Suman Maiti, Dr Chandan Chakraborty, Tuhin S Basu (IIT Kharagpur) Dr Jihong Wang (The University of Warwick)</p>
14:30 - 14:45	<p>A Multifunctional PV-BES-Utility System with Seamless Islanding and Resynchronization Capability</p> <p><i>Presenters:</i> Dr Bhim Singh, Syed Bilal Qaiser Naqvi (IIT Delhi) Dr. Bikash Pal (Imperial College London)</p>
14:45 - 15:00	<p>Power Control and management of a Solar PV-Biomass-VRFB storage integrated grid connected hybrid DC microgrid for demand side management of a rural distribution network</p> <p><i>Presenters:</i> Dr Konika Das ( Bhattacharya), Dr. Nirmal Kr Deb, Dr. Hiranmay Saha (IEST Shibpur) Dr Aritra Ghosh, Dr.Tapas Kr Mallick (University of Exeter)</p>
15:00 - 15:15	<p>Smart phase imbalance detection and mitigation</p> <p><i>Presenters:</i> Dr L Umanand, Dr Subba Reddy B., Dr Joy Kuri (IISc Bangalore) Dr Murray Thomson, Dr Andrew Urquhart (Loughborough University)</p>
15:15 - 15:30	<p>Design and Development of Semi Transparent and Light Weight BIPV Modules</p> <p><i>Presenters:</i> J. Sonowal, Dr N. Sarmah (Tezpur University, Napaam) Dr A. Ghosh, Dr S. Sundaram, Dr. T.K. Mallick (University of Exeter)</p>
15:30 - 15:45	<p>Examining Technical and Non-Technical Challenges on Performance and Longevity of Batteries for Micro and Nano-Grids.</p> <p><i>Presenters:</i> Dr. Anil Kottanthariyal, Dr. Suryanarayana Doolla (IIT Bombay) Chrispin Mbewe, Dr Richard Blanchard (Loughborough University)</p>
15:45 - 16:00	<p>Adsorption and cycling effects of organic redox molecules used in aqueous redox flow batteries</p> <p><i>Presenters:</i> Miji E Joy, Manoj Neergat (IIT Bombay) Dr Richard Wills , Dr. Andy Cruden, Dr Billy Wu, Dr Amruta Joshi (University of Southampton, Imperial College)</p>
16:00 - 16:15	<p>Fault Tolerant Operation of Microgrid</p> <p><i>Presenters:</i> Dr. P. Bajpai, Dr. B.K. Kumar, (IIT Kharagpur, IIT Madras) Dr. A. Cruden, Dr. R Wills, Dr Amruta Joshi (University of Southampton, Cardiff University)</p>
16:15 to 16:30	<b>Coffee/Tea Break</b>
16:30 to 18:00	<b>Session 3: Technical Presentations (All WPs of IUCERCE) (Venue: Niti Sabhagar)</b>
	<p>Detailed Project Presentation – IUCERCE Work package wise</p> <p><i>Presenters:</i> Dr. B. G. Fernandes and Team Team: Investigators from IIT Kanpur, IIT Hyderabad, Tezpur University, CDAC and IIT Bombay</p>
<b>Note - 15 minute duration for presentation includes 3 minutes for Q &amp; A</b>	
<b>19:30 hrs. onwards – Conference Dinner</b>	



Friday, 13 September 2019 (Day 2)

08:30 to 09:00	<b>Registration and Refreshments</b>
09:00 to 11:00	<b>Session 4: Technical Presentations (Venue: Niti Sabhagar)</b>
09:00 - 09:15	Network & Grid Issues: Overview by Chandan Chakraborty & Bikash Pal
09:15 - 09:30	Energy Storage: Overview by Jyotirmay Mathur & Mark Dooner
09:30 - 09:45	PV Systems: Overview by J N Roy & Tapas K. Mallick
09:45 - 10:00	<b>Flash Presentation:</b> <ul style="list-style-type: none"> <li>• Micro Inverter: Dr. Parthasarathi Sensarma, IIT Kanpur</li> <li>• Communication Supervised Control: Dr. Sukumar Mishra, IIT Delhi</li> </ul>
10:00 - 10:15	Stability of grid forming control of solar PV plants with power reserves <i>Presenters:</i> Dr. Saikat Chakrabarti (IIT Kanpur), Bandopant Pawar Dr. Bikash Pal (Imperial College London)
10:15 - 10:30	Smart energy management for microgrids <i>Presenters:</i> Dr Subba Reddy B., Dr L Umanand (IISc Bangalore) Dr Murray Thomson, Dr John Barton (Loughborough University)
10:30 - 10:45	Improving Reliability of Rural Microgrids in India <i>Presenters:</i> Dr J.N. Roy (IIT Kharagpur), Ajay Chaurasiya, Saikat Ghosh Jane Namaganda-Kiyimba, Dr Joseph Mutale (The University of Manchester)
10:45 - 11:00	Stochastic Network Planning of Indian Power System under High RE Integration <i>Presenters:</i> Dr. Jyotirmay Mathur, Dr. Rohit Bhakar, Yamujala Sumanth, Anjali Jain (MNIT Jaipur) Dr Spyros Giannelos (Imperial College London)
11:00 to 11:15	<b>Coffee/Tea Break</b>
11:15 to 13:00	<b>Session 5: Technical Presentations (Venue: Niti Sabhagar)</b>
11:15 - 11:30	Voltage Control Ancillary Service support from Solar PV Power Plant <i>Presenters:</i> Dr Zakir H. Rather, Hazem Karbouj, Dhanuja Lakshmi (IIT Bombay) Dr. Bikash Pal (Imperial College London)
11:30 - 11:45	Modelling an Integrated Photovoltaic and Low Pressure Compressed Air Energy Storage System <i>Presenters:</i> Dr J.N. Roy, Saikat Ghosh (IIT Kharagpur) Dr Mark Dooner and Dr. Jihong Wang (The University of Warwick)
11:45 - 12:00	Application of modern non-linear control techniques for the integration of Compressed Air Energy Storage with medium and low voltage Grid <i>Presenters:</i> Dr. Srinivas Bhaskar Karanki, Sanjib Kumar Mitra (IIT Bhubaneswar) Decai Li; Dr. Mark Dooner; Dr. Oleh Kiselychnyk; Dr. Jihong Wang (The University of Warwick)
12:00 - 12:30	<b>Flash Presentation: 5 min each</b> <ul style="list-style-type: none"> <li>• Campus Energy Monitoring System. Dr. Pradeep Yemula, IIT Hyderabad</li> <li>• Reduced communication based secondary controller for DC microgrids Dr. Sandeep Anand, IIT Kanpur</li> <li>• Power Conditioning System for remote micro grid and reliability assessment Mr. Saravana Kumar, CDAC</li> <li>• Performance analysis of electrode parameters of all vanadium redox flow battery Dr. V. Ramadesigan, IIT Bombay</li> <li>• Testing the performance and durability of hydrophobic, anti-soiling coatings for solar cover glass Dr. Anil Kottanthariyal (IIT Bombay) and J.M.Walls (Loughborough)</li> </ul>

12:30 - 12:45	VESS scheduling for flexibility provision in Low Carbon Power Systems <i>Presenters:</i> Dr. Jyotirmay Mathur, Dr. Rohit Bhakar, Yamujala Sumanth, Anjali Jain (MNIT Jaipur) Dr. Jianzhong Wu, Dr. Yue Zhou (Cardiff University)
12:45 - 13:00	Computation of the Lambert W function in photovoltaic modelling <i>Presenters:</i> Dr. Chandan Chakraborty, Umamaheswararao Vuyyuru (IIT Kharagpur) Dr Efstratios I. Batzeli , Georgios Anagnostou, Dr. Bikash C. Pal (Imperial College London)
<b>13:00 to 14:30</b>	<b>Lunch and Poster Session</b>
<b>14:30 to 16:00</b>	<b>Session 6: Technical Presentations (Venue: Niti Sabhagar)</b>
14:30 - 14:45	Impact of Soiling on PV performance <i>Presenters:</i> Dr J.N. Roy, Saikat Ghosh (IIT Kharagpur) Dr Konika Das( Bhattacharya), Dr. Hiranmay Saha , Saheli Sengupta , Arnab Das, Samarjit Sengupta, Barun Samanta , (IEST Shibpur) Dr Aritra Ghosh, Dr. Tapas Kr Mallick (University of Exeter)
14:45 - 15:00	Effect of Soiling on Performance of PV-PCM Integrated System in India Climate - Experimental Study <i>Presenters:</i> Dr J.N. Roy, S. Ghosh (IIT Kharagpur) Dr A. Ahmad, Dr. Y. Ding, Dr Aritra Ghosh, Dr. Tapas Kr Mallick (University of Birmingham, University of Exeter)
15:00 - 15:15	An Intelligent Tool to Assess Maximum Solar PV Penetration Level in a Power System <i>Presenters:</i> Dr Zakir H Rather, Ms. Dhanuja Lekshmi J (IIT Bombay) Dr. Bikash Pal (Imperial College London)
15:15 - 15:30	Novel Fault Detection System in Photovoltaic Arrays <i>Presenters:</i> Dr N. Sarmah, P. B. Phukan, (Tezpur University, Napaam) Dr A. Ghosh, Dr S. Sundaram, Dr. T.K. Mallick (University of Exeter)
15:30 - 15:45	Line Faults in DC Microgrids <i>Presenters:</i> K. Anirudh, Himanshu J.Bahirat (IIT Bombay) Dr. Bikash C. Pal (Imperial College London)
15:45 - 16:00	A modelling framework for microgrid system sizing and analysis: Case study of Mount Abu Spiritual Centre, Rajasthan <i>Presenters:</i> Dr. Rangan Banerjee , Dr. Prakash Ghosh, Ajit Paul Abrahams (IIT Bombay) Dr Sheridan Few, Dr. Jenny Nelson, Dr Chiara Candelise (Imperial College London)
<b>16:00 to 16:30</b>	<b>Coffee/Tea Break</b> <b>DST/RCUK/UKICERI/JUICE/IUCERCE Coordinator's Meeting (Venue: NKN2)</b>
<b>16:30 to 17:30</b>	<b>Session 7: Wrap-up/Interaction (Venue: NKN2)</b>
16:30 - 17:00	<b>UKICERI-JUICE Team</b>
17:00 - 17:30	<b>IUCERCE-JUICE Team</b>
<b>17:30 to 18:00</b>	<b>Session 8: UKICERI-JUICE-IUCERCE Joint Concluding Session: 'Research Challenges for Future': ALL INVESTIGATORS (Venue: Niti Sabhagar)</b>
<b>Note – 15 minute duration for presentation includes 3 minutes for Q &amp; A</b>	
<b>18:00 End of Conference</b>	

**Saturday, 14 September 2019 (Day 3)**



<b>08:40</b>	<b>Reporting at MNIT Jaipur Guest House</b>
<b>10:00 - 01:00</b>	<b>Industrial Visit to REIL Jaipur</b>
<b>01:45</b>	<b>Drop at MNIT Jaipur Guest House</b>