

GRAPES

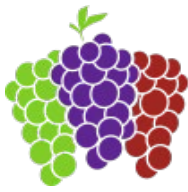
GRid-connected Advanced Power Electronic Systems

Thursday, November 10, 2022

Germany	Taiwan	South Korea	Time Allotted	Start (CST)	End (CST)	NSF Center for GRid-connected Advanced Power Electronics Systems (GRAPES) Annual Meeting	
2:00 PM	9:00 PM	10:00 PM	60	7:00 AM	8:00 AM	In Person Attendees: Breakfast Virtual Attendees: <i>Join the Meeting - test your speakers, microphones, get that</i>	Brodie Payne CD
3:00 PM	10:00 PM	11:00 PM	15	8:00 AM	8:15 AM	Welcome & Introductions, Meeting Agenda & Plan for the Day <i>Alan Mantooth, Executive Director</i>	Brodie Payne AB
3:15 PM	10:15 PM	11:15 PM	20	8:15 AM	8:35 AM	New Faculty Introductions <i>David Huitink, Chanyeop Park, Xiaoqing Song</i>	Brodie Payne AB
3:35 PM	10:35 PM	11:35 PM	20	8:35 AM	8:55 AM	GRAPES Overview <i>Alan Mantooth</i>	Brodie Payne AB
3:55 PM	10:55 PM	11:55 PM	45	8:55 AM	9:40 AM	GRAPES Student/Company Internship Experiences <i>Xiaoling Li/Andy Rockhill; Haodong Yang/SPP;</i>	Brodie Payne AB
4:40 PM	11:40 PM	12:40 AM	10	9:40 AM	9:50 AM	LIFE Form Instructions <i>Alan Mantooth</i>	Brodie Payne AB
4:50 PM	11:50 PM	12:50 AM	10	9:50 AM	10:00 AM	Break	
5:00 PM	12:00 AM	1:00 AM	20	10:00 AM	10:20 AM	GRAPES Korea Presentation <i>Yong-June Shin</i>	Brodie Payne AB
5:20 PM	12:20 AM	1:20 AM	20	10:20 AM	10:40 AM	New Member Presentation - Arrow Electronics <i>Steven Shackell</i>	Brodie Payne AB
5:40 PM	12:40 AM	1:40 AM	20	10:40 AM	11:00 AM	Argonne Lab Presentation "Predicting Electricity Customer Outages" <i>Feng Qiu</i>	Brodie Payne AB

New Project Proposals (presentation 15 mins, Q&A 5 mins)

Germany	Taiwan	South Korea	Time Allotted	Start (CST)	End (CST)	Facilitator: Alan Mantooth	
6:00 PM	1:00 AM	2:00 AM	20	11:00 AM	11:20 AM	GR-23-02: Compace, GaN Based, 25kW 480VZC Bidirectional Inverter <i>Adel Nasiri</i>	Brodie Payne AB
6:20 PM	1:20 AM	2:20 AM	20	11:20 AM	11:40 AM	GR-23-07: Development of GaN based Compact Scalable Multilevel Inverter Building Block <i>Xiaoqing Song</i>	Brodie Payne AB
6:40 PM	1:40 AM	2:40 AM	20	11:40 AM	12:00 PM	GR-23-01: Novel Electric Insulators and Partial Discharge Detection Techniques for Resilient Medium Voltage Distribution Systems <i>Chanyeop Park</i>	Brodie Payne AB
7:00 PM	2:00 AM	3:00 AM	60	12:00 PM	1:00 PM	Lunch	Brodie Payne CD



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New Project Proposals (presentation 15 mins, Q&A 5 mins)

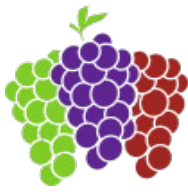
Germany	Taiwan	South Korea	Time Allotted	Start (CST)	End (CST)	Facilitator: Alan Mantooth	
8:00 PM	3:00 AM	4:00 AM	20	1:00 PM	1:20 PM	GR-23-08: Hybrid Dielectric Nano-Coatings for Partial Discharge Abatement <i>David Huitink</i>	Brodie Payne AB
8:20 PM	3:20 AM	4:20 AM	20	1:20 PM	1:40 PM	GR-23-03: IBR Transient Response Improvements to Transmission Faults <i>Rob Cuzner</i>	Brodie Payne AB
8:40 PM	3:40 AM	4:40 AM	20	1:40 PM	2:00 PM	GR-23-05: Investigating the Reliability and Resiliency Benefits of Smart Monitoring for Renewables-rich Transmission & Distribution Systems <i>Lingfeng Wang</i>	Brodie Payne AB
9:00 PM	4:00 AM	5:00 AM	20	2:00 PM	2:20 PM	GR-23-06: Phasor Measurement Unit Based Methods for Implementing Dynamic Line Rating Capabilities <i>Roy McCann</i>	Brodie Payne AB
9:20 PM	4:20 AM	5:20 AM	20	2:20 PM	2:40 PM	GR-23-04: Modeling and Design of Clean-Power Inverter-Based Resources <i>Rob Cuzner</i>	Brodie Payne AB

Continued Funding Requests/Current Project Updates (presentation 12 mins, justification for funds 3 mins, Q&A 5 mins)

Germany	Taiwan	South Korea	Time Allotted	Start (CST)	End (CST)	Facilitator: Alan Mantooth	
9:40 PM	4:40 AM	5:40 AM	20	2:40 PM	3:00 PM	GR-22-01: Design and Demonstration of A GRID-Connected Modular All-SiC Transformerless Energy Router (GRID-MASTER) <i>Yue Zhao</i>	Brodie Payne AB
10:00 PM	5:00 AM	6:00 AM	10	3:00 PM	3:10 PM	Break	

No Cost Extension/Current Project Updates (presentation 10 mins)

Germany	Taiwan	South Korea	Time Allotted	Start (CST)	End (CST)	Facilitator: Yue Zhao	
10:10 PM	5:10 AM	6:10 AM	10	3:10 PM	3:20 PM	GR-21-04: High Voltage SiC MOSFET Power Module with Optimized Electric Field Distribution and EMI Performance <i>Alan Mantooth</i>	Brodie Payne AB
10:20 PM	5:20 AM	6:20 AM	10	3:20 PM	3:30 PM	GR-21-06: Active Gate Driving for Paralleled High Voltage SiC MOSFET Power Modules <i>Alan Mantooth</i>	Brodie Payne AB



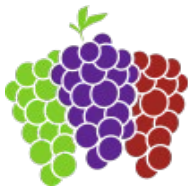
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No Cost Extension/Current Project Updates (presentation 10 mins)

Germany	Taiwan	South Korea	Time Allotted	Start (CST)	End (CST)	Facilitator: Yue Zhao	
10:30 PM	5:30 AM	6:30 AM	10	3:30 PM	3:40 PM	GR-20-07: Novel Back-to-Back Converter Configuration for Hybrid AC Transmission with Multi-Terminal DC Operation <i>Roy McCann, Alan Mantooth</i>	Brodie Payne AB
10:40 PM	5:40 AM	6:40 AM	10	3:40 PM	3:50 PM	GR-22-02: Development and Applications of Fine-grained Digital Twins for Power Electronic Modules <i>Lingfeng Wang</i>	Brodie Payne AB
10:50 PM	5:50 AM	6:50 AM	10	3:50 PM	4:00 PM	GR-20-01: Energy Storage for Increasing Solar PV Capacity and Improving Voltage Dynamics in Distribution Systems <i>Brian Armstrong</i>	Brodie Payne AB
11:00 PM	6:00 AM	7:00 AM	10	4:00 PM	4:10 PM	GR-21-02: Resilient MVDC and MVAC/MVDC Distribution Systems <i>Rob Cuzner</i>	Brodie Payne AB
11:10 PM	6:10 AM	7:10 AM	10	4:10 PM	4:20 PM	GR-22-03: Short-term, Operational Reliability Evaluation of HVDC/MVDC Networks Considering Real-time Influence of Power Electronics <i>Lingfeng Wang</i>	Brodie Payne AB
11:20 PM	6:20 AM	7:20 AM	20	4:20 PM	4:40 PM	GR-20-02: High Power Medium Frequency and Medium Voltage Solid State Transformer Based Power Conversion Systems <i>Adel Nasiri</i> -project update (10 mins) <i>Rob Cuzner</i> -continued funding request (10 mins)	Brodie Payne AB

Final Project Updates (presentation 20 mins)

Germany	Taiwan	South Korea	Time Allotted	Start (CST)	End (CST)	Facilitator: Yue Zhao	
11:40 PM	6:40 AM	7:40 AM	20	4:40 PM	5:00 PM	GR-18-03: Distributed Energy Resources-Highly Efficient and Compact Medium Voltage Solar PV Inverter <i>Adel Nasiri</i>	Brodie Payne AB
12:00 AM	7:00 AM	8:00 AM	15	5:00 PM	5:15 PM	LIFE & NSF Questionnaire Forms Reminder <i>Alan Mantooth, Executive Director</i>	Brodie Payne CD
12:15 AM	7:15 AM	8:15 AM	10	5:15 PM	5:25 PM	Day One Wrap Up <i>Alan Mantooth, Executive Director</i>	Brodie Payne AB
12:30 AM	7:30 AM	8:30 AM	90	5:30 PM	7:00 PM	Project Posters and Demonstrations, Tour of NCREPT	NCREPT
2:00 AM	9:00 AM	10:00 AM	75	7:00 PM	8:15 PM	Dinner	Brodie Payne CD



GRAPES

GRid-connected Advanced Power Electronic Systems

Friday, November 11, 2022

Germany	Taiwan	South Korea	Time Allotted	Start (CST)	End (CST)	NSF Center for GRid-connected Advanced Power Electronics Systems (GRAPES) Annual Meeting	
2:00 PM	9:00 PM	10:00 PM	60	7:00 AM	8:00 AM	In Person Attendees: Breakfast Virtual Attendees: <i>Join the Meeting - test your speakers, microphones, get that morning cup of coffee</i>	Brodie Payne AB
3:00 PM	10:00 PM	11:00 PM	15	8:00 AM	8:15 AM	Welcome, Day 2 Agenda <i>Alan Mantooth, Executive Director</i>	Brodie Payne AB
3:15 PM	10:15 PM	11:15 PM	90	8:15 AM	9:45 AM	Life Form Review <i>Alan Mantooth, Executive Director</i>	Brodie Payne AB
4:45 PM	11:45 PM	12:45 AM	15	9:45 AM	10:00 AM	Break - Students Dismissed	
5:00 PM	12:00 AM	1:00 AM	90	10:00 AM	11:30 AM	Parallel Breakouts (IAB Closed Session/Faculty Meeting)	IAB=Brodie Payne AB Faculty=Brodie Payne CD
6:30 PM	1:30 AM	2:30 AM	60	11:30 AM	12:30 PM	IAB Report Out & Business Meeting	Brodie Payne AB
7:30 PM	2:30 AM	3:30 AM	0	12:30 PM	12:30 PM	Meeting Dismissed	
7:30 PM	2:30 AM	3:30 AM	55	12:30 PM	1:25 PM	Grab and Go Lunches Available	Brodie Payne CD