

# 2020 IEEE Green Technologies, Region 5 & Student Conferences

Sheraton Downtown, Oklahoma City, OK, USA, April 1-5, 2020

Final Program Draft

		Green Technologies Conference				Region 5 Student Competition & Local Student Conference				Region 5 Business Meeting			
Wed, Apr 1, 2020		Thu, Apr 2, 2020				Fri, Apr 3, 2020				Sat, Apr 4, 2020		Sun, Apr 5, 2020	
7:00 AM	Discover Oklahoma City	<b>Breakfast</b> (19 <sup>th</sup> Century)				<b>Breakfast</b> (19 <sup>th</sup> Century)				<b>Breakfast @6am</b> (Century Ballroom)		Breakfast - Buffet (Frontier & Plaza Ballroom)	
7:30 AM	On your Own	GreenTech Welcome				Plenary Keynotes <b>T. Jobe/F. Behmann/D. Albert</b> (Century Ballroom)				Networking Time			
8:00 AM	* National Memorial	<b>Plenary Keynote Scott Klososky</b> (Century Ballroom)				F1 (R9) H1 (R13) I1 (R14) J1 (R18)				Ethnic competition (Red Carpet)		Conferences Committee (Red Carpet)	
8:30 AM	* Scissortail Park	Break				Break				Ethic Presentation (Frontier)		Business Meeting (Plaza Ballroom)	
9:00 AM	* Riverport	A1 (R9) B1 (R13) C1 (R14) D1 (R18)				F2 (R9) H2 (R13) I2 (R14) A5 (R18)				Student Paper Contest (Kiamichi)		Business Meeting (Plaza Ballroom)	
9:30 AM	* Zoo	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)				Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)				Circuit Design Competition (Green Country)		Conferences Committee (Red Carpet)	
10:00 AM	* Horse Show	A2 (R9) B2 (R13) C2 (R14) D2 (R18)				Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)				Circuit Design Presentation (Green Country)		Business Meeting (Plaza Ballroom)	
10:30 AM	* Wagons & Teepees	Lunch				Lunch for Presenters (Contact Organizers for Room)				Box Lunch (Cent. Foyer)		Business Meeting (Plaza Ballroom)	
11:00 AM	* Thunder	OKC Welcome Councilwoman JoBeth Hamon				Poster Presentations (Century Foyer)				Box Lunch (C. Ballroom)		Business Meeting (Plaza Ballroom)	
11:30 AM	* Myriad Botanical	<b>Plenary Keynote Jay Martin</b> (Century Ballroom)				G1 (R9)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
12:00 PM	Tour Waiting Rm (Kiamichi)	<b>Poster Presentations (R5)</b>				Break				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
12:30 PM	Tours OG&E Solar Farm	A3 (R9) B3 (R13) C3 (R14) E1 (R18)				Free/Networking Time				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
1:00 PM	Exhibit Setup (Century Foyer)	A4 (R9) B4 (R13) C4 (R14) E2 (R18)				Reception (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
1:30 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Networking Time				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
2:00 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				The IEEE Value Lisa Delventhal (Red Carpet)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
2:30 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				IEEE Event (Organizers)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
3:00 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Banquet Welcome to OK- Governor Stitt or Rep. Speaker - Russ Harrison Awards (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
3:30 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Banquet Welcome to OK- Governor Stitt or Rep. Speaker - Russ Harrison Awards (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
4:00 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Banquet Welcome to OK- Governor Stitt or Rep. Speaker - Russ Harrison Awards (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
4:30 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Banquet Welcome to OK- Governor Stitt or Rep. Speaker - Russ Harrison Awards (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
5:00 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Banquet Welcome to OK- Governor Stitt or Rep. Speaker - Russ Harrison Awards (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
5:30 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Banquet Welcome to OK- Governor Stitt or Rep. Speaker - Russ Harrison Awards (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
6:00 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Banquet Welcome to OK- Governor Stitt or Rep. Speaker - Russ Harrison Awards (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
6:30 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Banquet Welcome to OK- Governor Stitt or Rep. Speaker - Russ Harrison Awards (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
7:00 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Banquet Welcome to OK- Governor Stitt or Rep. Speaker - Russ Harrison Awards (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
7:30 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Banquet Welcome to OK- Governor Stitt or Rep. Speaker - Russ Harrison Awards (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
8:00 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Banquet Welcome to OK- Governor Stitt or Rep. Speaker - Russ Harrison Awards (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
8:30 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Banquet Welcome to OK- Governor Stitt or Rep. Speaker - Russ Harrison Awards (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	
9:00 PM	Registration (Coatroom) - Exhibits & Exhibit/Job Fair Setup (Foyer)	Free/Networking Time				Banquet Welcome to OK- Governor Stitt or Rep. Speaker - Russ Harrison Awards (Century Ballroom)				Business Meeting (Plaza Ballroom)		Business Meeting (Plaza Ballroom)	



- Green Tech Tracks**
- A- Energy Generation & Storage Technologies
  - B- Sustainable IT, Computing & Software Engineering
  - C- Smart Systems and Infrastructures
  - D- Energy Usage Reduction and Conservation
  - E- Environmental, Legal, Social, Economic, and Political Impacts
  - F- Intelligent Future Grid
  - G- Biomedical & Biotechnology
  - H- Radar, Weather Forecasting, Water & Sanitation
  - I- Architectural and Engineering Sustainable Designs
  - J- Sustainability, Education and Perspectives

R: Room R1: 18th Century R2: 19th Century R3: 20th Century R4: Century Ballroom R5: Century Foyer R6: Coatroom R7: Frontier Country R8: One Broadway Ballroom R9: Green Country R10: Kiamichi R11: Great Plains R12: Plaza North R13: Plaza North R14: Plaza South R15: Plaza Ballroom R16: Executive Boardroom R17: Sheraton University R18: Red Carpet

# 2020 IEEE Green Technologies Conference

## List of Selected Papers and Presenters

A	Energy Generation & Storage Technologies
A1	Energy Generation & Storage Technologies
F011	<b>Performance Analysis of the Transverse-Flux Machine with High number of Poles for Large Wind, Hydro, and Electric Ship Propulsion Systems</b> <ul style="list-style-type: none"><li>• Oleksandr Dobzhanskyi, Oregon Institute of Technology, USA</li><li>• Ebrahim Amiri, University of New Orleans, USA</li></ul>
S013	<b>Modeling Earth as a Dipole Antenna</b> <ul style="list-style-type: none"><li>• Greg Poole, Industrial Tests, Inc., USA</li></ul>
A2	Energy Generation & Storage Technologies
F036	<b>Complementarity and Variability of Wind and Solar Energy in Complex Terrain</b> <ul style="list-style-type: none"><li>• Radian Belu, Southern University, USA</li></ul>
F041	<b>Battery State-of-Charge Estimation Based on the Nonlinear Double-Capacitor Model and Extended Kalman Filter</b> <ul style="list-style-type: none"><li>• Mason Proctor, University of Kansas, USA</li><li>• Ning Tian, University of Kansas, USA</li><li>• HuazhenFang, University of Kansas, USA</li></ul>
F047	<b>Feasibility Study of wind energy in Kuwait: onshore and offshore</b> <ul style="list-style-type: none"><li>• Esam Alawadhi, Kuwait University, Kuwait</li></ul>
F049	<b>Thermal Management of Li-Ion Batteries with Single-phase Liquid Immersion Cooling</b> <ul style="list-style-type: none"><li>• David Sundin, Engineered Fluids, USA</li><li>• Sebastian Sponholtz, Engineered Fluids, USA</li></ul>
A3	Energy Generation & Storage Technologies
F054*	<b>Synthesis of MnO<sub>2</sub> Carbon nanotubes catalyst with enhanced Oxygen Reduction Reaction for Polymer Electrolyte Membrane Fuel Cell</b> <ul style="list-style-type: none"><li>• Abid Ullah, University of Engineering and Technology, Peshawar, Pakistan</li><li>• Muhammad Hamayun, University of Engineering and Technology, Peshawar, Pakistan</li><li>• Arif Khattak, University of Engineering and Technology, Peshawar, Pakistan</li></ul>
OP045	<b>Effect of Graphene Modified Anode on the Performance of Direct Methanol Fuel Cell</b> <ul style="list-style-type: none"><li>• Al Amin, University of Texas Rio Grande Valley, USA</li><li>• Abu Musa Abdullah, University of Texas Rio Grande Valley, USA</li><li>• Aminur Rashid Chowdhury, University of Texas Rio Grande Valley, USA</li><li>• M. Jasim Uddin, University of Texas Rio Grande Valley, USA</li><li>• Samir Iqbal, University of Texas Rio Grande Valley, USA</li><li>• Hasina F. Huq, University of Texas Rio Grande Valley, USA</li></ul>
F055	<b>Comparative Study of Improved Droop Control Methods for AC Islanded Microgrids</b> <ul style="list-style-type: none"><li>• Ahmed Alsafran, University of Dayton, USA</li><li>• Malcolm Daniels, University of Dayton, USA</li></ul>
F065	<b>Sealed Lead Acid Battery and Supercapacitor Power Configurations for Electric Drag Racing</b> <ul style="list-style-type: none"><li>• Thomas Henderson, Tulsa Community College, USA</li></ul>

A4	Energy Generation & Storage Technologies
F069	<p><b>ANN Based Wind Farm Power Distribution Strategy</b></p> <ul style="list-style-type: none"> <li>• Kuan Yi Lin, Tamkang University, Taiwan</li> <li>• Kuang Yu Tai, Tamkang University, Taiwan</li> <li>• Peter Liu, Tamkang University, Taiwan</li> </ul>
F001	<p><b>Prioritized Load Control System for Pico-Hydroelectric Power in the Nepal Himalayas</b></p> <ul style="list-style-type: none"> <li>• Hsi-Jen James Yeh, Azusa Pacific University, USA</li> <li>• Rick Sturdivant, Azusa Pacific University, USA</li> <li>• Mark Stambaugh, RIDS, USA</li> <li>• Alex Zahnd, RIDS, Switzerland</li> </ul>
F077	<p><b>Adaptive Neuro-Fuzzy Inference based Modelling of Wind Energy Harvesting System for Remote Areas</b></p> <ul style="list-style-type: none"> <li>• Tigilu Mitiku Dinku, Bule Hora University, Ethiopia</li> <li>• Mukhdeep Singh Manshahia, Punjabi University, India</li> </ul>

A5	Energy Generation & Storage Technologies
F103	<p><b>An Interleaved Non-Isolated DC-DC Boost Converter with Voltage Doubler Cell in CCM</b></p> <ul style="list-style-type: none"> <li>• Mohammad Altimania, Missouri University of Science and Technology, USA and University of Tabuk, Saudi Arabia</li> <li>• Mohamad Saleh Sanjari Nia, Missouri University of Science and Technology, USA</li> <li>• Mehdi Ferdowsi, Missouri University of Science and Technology, USA</li> <li>• Pourya Shamsi, Missouri University of Science and Technology, USA</li> </ul>
F068	<p><b>Regional Wind Power Ramp Forecasting through Multinomial Logistic Regression</b></p> <ul style="list-style-type: none"> <li>• Xm Chen, Texas Tech University, USA</li> <li>• Jie Zhao, Texas Tech University, USA</li> <li>• Miao He, Texas Tech University, USA</li> </ul>
F027	<p><b>A Fractional Order Approach for Modeling Nonlinear Behavior in Boost DC-DC Converters with CPL</b></p> <ul style="list-style-type: none"> <li>• Majid A. Alhomim, University of Arkansas, Fayetteville, USA</li> <li>• Badur M. Alharbi, University of arkansas, Fayetteville, USA</li> <li>• Roy A. McCann, University of arkansas, Fayetteville, USA</li> </ul>
P007	<p><b>A Tool for Modernizing the Grid</b></p> <ul style="list-style-type: none"> <li>• Brad Jensen, Burns &amp; McDonnell, USA</li> <li>• Ryan Uyehara, Burns &amp; McDonnell, USA</li> </ul>

**B****Sustainable IT, Computing & Software Engineering**

<b>B1</b>	<b>Sustainable IT, Computing &amp; Software Engineering</b>
F046	<p><b>Redfish Green500 Benchmark (RGB): Towards Automation of the Green500 Process for Data Centers</b></p> <ul style="list-style-type: none"> <li>• Elham Hojati, Texas Tech University, USA</li> <li>• Jon Hass, Dell Inc., USA</li> <li>• Alan Sill, Texas Tech University, USA</li> <li>• Yong Chen, Texas Tech University, USA</li> </ul>
F057	<p><b>Hashed B-tree: Adaptive Performance Enhancement of B-tree on Byte-addressable Nonvolatile Memories</b></p> <ul style="list-style-type: none"> <li>• Yi-Hua Chen, National Tsing Hua University, Taiwan</li> <li>• Yi-Han Lien, National Tsing Hua University, Taiwan</li> <li>• Po-Chun Huang, Taipei Tech, Taiwan</li> </ul>
<b>B2</b>	<b>Sustainable IT, Computing &amp; Software Engineering</b>
S067	<p><b>Commodity Ecology: A Virtual Community Platform for Promoting Responsible Consumption and Production to Achieve SDG #12</b></p> <ul style="list-style-type: none"> <li>• Mark Whitaker, State University of New York, South Korea</li> <li>• Pravin Pawar, State University of New York, South Korea</li> </ul>
S012	<p><b>Mobile Edge Computing Sensors and Cloud Machine Learning Enable Grid Predictive Maintenance</b></p> <ul style="list-style-type: none"> <li>• John Lauletta, Exacter, Inc., USA</li> <li>• Rachana Dasari, University of Akron, USA</li> <li>• Yilmaz Sozer, University of Akron, USA</li> <li>• Jose Garcia, University of Akron, USA</li> </ul>
F084	<p><b>Adaptive Compressive Sensing and Machine Learning for Power System Fault Classification</b></p> <ul style="list-style-type: none"> <li>• Long Cheng, ABB Inc., USA</li> <li>• Zhaoqi Wu, University of Illinois at Urbana-Champaign, USA</li> <li>• Rusheng Duan, Columbia University, USA</li> <li>• Kangnan Dong, California State University San Marcos, USA</li> </ul>
S093	<p><b>Exploring Potential of Transfer Deep Learning for Malicious Android Applications Detection</b></p> <ul style="list-style-type: none"> <li>• Mohammed Alshehri, Majmaah University, Saudi Arabia</li> </ul>

B3	Sustainable IT, Computing & Software Engineering
OP099	<p><b>Cluster based Anti-Phishing (CAP) mechanism for smart phones</b></p> <ul style="list-style-type: none"> <li>• Mohammad Faisal, University of Malakand, Pakistan</li> <li>• Muazzam A Khan, Quaid-i-Azam University, Pakistan</li> </ul>
OP095*	<p><b>Planning and Design of WDM/ DWDM Networks</b></p> <ul style="list-style-type: none"> <li>• Surah Al Dakhl, Oakland University, USA</li> <li>• Mohamed Zohdy, Oakland University, USA</li> <li>• Dafer Alali, Oakland University, USA</li> </ul>
S102	<p><b>Internet of Things Based Remote Sensing for Ornithological Monitoring</b></p> <ul style="list-style-type: none"> <li>• Muhammad Khan, Arkansas Tech University, USA</li> <li>• Douglas Barron, Arkansas Tech University, USA</li> <li>• Rajvardhan Patil, Arkansas Tech University, USA</li> <li>• Matthew Nannemann, Arkansas Tech University, USA</li> <li>• Michael Courson, Arkansas Tech University, USA</li> </ul>
OP086	<p><b>Real Time Indoor Positioning System for Smart Grid based on UWB and Artificial Intelligence Techniques</b></p> <ul style="list-style-type: none"> <li>• Long Cheng, ABB Inc, USA</li> <li>• Zhaoqi Wu, University of Illinois at Urbana-Champaign, USA</li> <li>• Bo Lai, University of California, Irvine, USA</li> <li>• Qiang Yang, North Carolina State University, USA</li> </ul>

B4	Sustainable IT, Computing & Software Engineering
S113	<p><b>Cryptocurrency Grade of Green; IOTA Energy Consumption Modeling and Measurement</b></p> <ul style="list-style-type: none"> <li>• Amir Abbaszadeh, Islamic Azad University, Iran</li> <li>• Mehdi Golsorkhtabaramiri, Islamic Azad University, Iran</li> <li>• Amir Masoud, Islamic Azad University, Iran</li> </ul>
P114	<p><b>Incorporating the structure of trees in estimates of clear day solar energy potential over parking lots and roads</b></p> <ul style="list-style-type: none"> <li>• Vishnu Mahesh Vivek Nanda, North Carolina State University, USA</li> <li>• Laura Tateosian, North Carolina State University, USA</li> <li>• Perver Baran, North Carolina State University, USA</li> </ul>
S115	<p><b>Sustainability Assessment of Data Centers Beyond LEED</b></p> <ul style="list-style-type: none"> <li>• Hashem Izadi Moud, Florida Gulf Coast University, USA</li> <li>• Hamed Hakim, University of Florida, USA</li> <li>• Charles Kibert, University of Florida, USA</li> <li>• Ian Flood, University of Florida, USA</li> <li>• Jeanette Hariharan, Florida Gulf Coast University, USA</li> </ul>

<b>C</b>	<b>Smart Systems and Infrastructures</b>
----------	--

<b>C1</b>	<b>Smart Systems and Infrastructures</b>
-----------	--

F005	<p><b>Tri-Objective LPV Controller Design for the Thermal Management of Motor Drive Parameters in an Electric Vehicle</b></p> <ul style="list-style-type: none"> <li>• Syed Muhammad Nawazish Ali, Macquarie University, Australia</li> <li>• Jahangir Hossain, University of Technology Sydney, Australia</li> <li>• Vivek Sharma, Macquarie University, Australia</li> <li>• Muhammad Kashif, Macquarie University, Australia</li> </ul>
F021	<p><b>Distributed Frequency Regulation for Heterogeneous Microgrids via Steady State Optimal Control</b></p> <ul style="list-style-type: none"> <li>• Lukas Kölsch, Karlsruhe Institute of Technology, Germany</li> <li>• Manuel Dupuis, Karlsruhe Institute of Technology, Germany</li> <li>• Kirtan Bhatt, Karlsruhe Institute of Technology, Germany</li> <li>• Stefan Krebs, Karlsruhe Institute of Technology, Germany</li> <li>• Sören Hohmann, Karlsruhe Institute of Technology, Germany</li> </ul>

<b>C2</b>	<b>Smart Systems and Infrastructures</b>
-----------	--

S026	<p><b>Printable smart materials used as sensors for continuous monitoring in a smart code</b></p> <ul style="list-style-type: none"> <li>• Mustafa Bilgin, University of Wuppertal, Germany</li> <li>• Johannes Backhaus, University of Wuppertal, Germany</li> </ul>
F029	<p><b>Towards Smart e-Infrastructures, A Community Driven Approach Based on Real Datasets</b></p> <ul style="list-style-type: none"> <li>• Prashant Singh, Uppsala University, Sweden</li> <li>• Mona Elamin, Uppsala University, Sweden</li> <li>• Salman Toor, Uppsala University, Sweden</li> </ul>
F031	<p><b>Identification of Faults in Microgrid Using Artificial Neural Networks</b></p> <ul style="list-style-type: none"> <li>• Sri Kolla, Bowling Green State University, USA</li> <li>• Peter Onwonga, Bowling Green State University, USA</li> </ul>
F042	<p><b>Local Phasor-Based Control of DER Inverters for Voltage Regulation on Distribution Feeders</b></p> <ul style="list-style-type: none"> <li>• Jaimie Swartz, University of California, Berkeley, USA</li> <li>• Elizabeth Ratnam, Australian National University, Australia</li> <li>• T.G. Roberts, University of California, Berkeley, USA</li> <li>• Alexandra von Meier, University of California, Berkeley, USA</li> </ul>



<b>C3 Smart Systems and Infrastructures</b>	
OP044	<p><b>Challenges for Integrating Renewable Energy Sources into Smart Grid via Wireless Power Transfer Technology</b></p> <ul style="list-style-type: none"> <li>• Hamid Allamehzadeh, Eastern New Mexico University, USA</li> </ul>
F108	<p><b>Self-adjusting Inertia Emulation Control in V2G Application</b></p> <ul style="list-style-type: none"> <li>• Saleh Dinkhah, Texas Tech University, USA</li> <li>• Miao He, Texas Tech University, USA</li> </ul>
S061	<p><b>Power Demand Prediction of Battery Overhead Line Buses based on a Neural Network Optimization</b></p> <ul style="list-style-type: none"> <li>• Michele Weisbach, University of Wuppertal, Germany</li> <li>• Utz Spaeth, University of Wuppertal, Germany</li> <li>• Milad Ghobadi, University of Wuppertal, Germany</li> <li>• Benedikt Schmuelling, University of Wuppertal, Germany</li> </ul>
F072	<p><b>GIS-Based Estimation of Seasonal Solar Energy Potential for Parking Lots and Roads</b></p> <ul style="list-style-type: none"> <li>• Vishnu Mahesh Vivek Nanda, North Carolina State University, USA</li> <li>• Laura Tateosian, North Carolina State University, USA</li> <li>• Perver Baran, North Carolina State University, USA</li> </ul>

<b>C4 Smart Systems and Infrastructures</b>	
F080	<p><b>Comparative Review of Consensus Controls with Triangle Mesh Topology for Reactive Power Sharing</b></p> <ul style="list-style-type: none"> <li>• Ahmed Alsafran, University of Dayton, USA</li> <li>• Malcolm Daniels, University of Dayton, USA</li> </ul>
P050*	<p><b>Creation of a Wireless Monitoring System for a Wind and Solar Hybrid System through Integrating Arduino with LabVIEW</b></p> <ul style="list-style-type: none"> <li>• James Guillory, University of Louisiana at Lafayette, USA</li> <li>• Terrance Chambers, University of Louisiana at Lafayette, USA</li> <li>• G.H. Massiha, University of Louisiana at Lafayette, USA</li> </ul>
OP083	<p><b>In-network Energy Rebalancing by Blockchain</b></p> <ul style="list-style-type: none"> <li>• J Seol, Oklahoma State University, USA</li> <li>• Nohpill Park, Oklahoma State University, USA</li> <li>• Indy Park, Oklahoma City University, USA</li> </ul>
P073	<p><b>Advantages and Process of Reconditioning and Recycling Mobile Phones</b></p> <ul style="list-style-type: none"> <li>• Charly Ngouani, C.Mobiles,Cameroon</li> <li>• Eliane Kouede, University of Yaounde I,Cameroon</li> <li>• Emile Tawamba, University of Douala,Cameroon</li> </ul>

<b>D</b>	<b>Energy Usage Reduction and Conservation</b>
----------	--

<b>D1</b>	<b>Energy Usage Reduction and Conservation</b>
-----------	--

F089	<p><b>Modularized Personal Piezoelectric Vibration Harvester</b></p> <ul style="list-style-type: none"> <li>• Yao Ren, University of Texas at Dallas, USA</li> <li>• Akash Dey, University of Texas at Dallas, USA</li> <li>• Akash Tadmare, University of Texas at Dallas, USA</li> <li>• Hongbing Lu, University of Texas at Dallas, USA</li> <li>• Yuanning Chen, Microsol Technologies Inc, USA</li> <li>• Harvey Stiegler, Microsol Technologies Inc, USA</li> <li>• Andrew Marshall, University of Texas at Dallas, USA</li> </ul>
S092	<p><b>Comparison of BDC linker-based MOFs for carbondioxide trapping; curb climate change</b></p> <ul style="list-style-type: none"> <li>• Aisha Asghar, USPCAS-E, NUST, Pakistan</li> <li>• Naseem Iqbal, USPCAS-E, NUST, Pakistan</li> <li>• Tayyaba Noor, SCME, NUST, Pakistan</li> </ul>

<b>D2</b>	<b>Energy Usage Reduction and Conservation</b>
-----------	--

P056*	<p><b>Evaluating carbon reduction strategies for the University of Pittsburgh</b></p> <ul style="list-style-type: none"> <li>• Sabrina Nguyen, University of Pittsburgh, USA</li> <li>• Eli Brock, University of Pittsburgh, USA</li> <li>• Robert Kerestes, University of Pittsburgh, USA</li> </ul>
F063	<p><b>Energy Consumption in Milling as a Result of Different Machining Parameters and Tool Paths</b></p> <ul style="list-style-type: none"> <li>• Renan Santos, Universidade Federal de Santa Catarina, Brazil</li> <li>• Milton Pereira, Universidade Federal de Santa Catarina, Brazil</li> <li>• Joao Ferreira, Universidade Federal de Santa Catarina, Brazil</li> </ul>
F064	<p><b>Smart Efficient Fan Controller with Fault Detection Diagnostics</b></p> <ul style="list-style-type: none"> <li>• Robert Mowris, Verified Inc., USA</li> </ul>
S076	<p><b>Switchable Magnets as a Power-Efficient Alternative for Electromagnets in a Mobile Robotic System</b></p> <ul style="list-style-type: none"> <li>• Andrew Garcia, Texas A&amp;M University-Corpus Christi, USA</li> <li>• Mehrube Mehrubeoglu, Texas A&amp;M University-Corpus Christi, USA</li> </ul>



<b>E</b>	<b>Environmental, Legal, Social, Economic, and Political Impacts</b>
----------	--

<b>E1</b>	<b>Environmental, Legal, Social, Economic, and Political Impacts</b>
F037	<b>Economic Analysis of Home Photovoltaics System: Extreme Weather Case Study</b> <ul style="list-style-type: none"> <li>• Rao Fu, University at Buffalo, USA</li> <li>• Jin Zhao, University of Alabama, USA</li> <li>• Ilya Grinberg, Buffalo State College, USA</li> </ul>
F019	<b>Economic Dispatch of a Smart Grid with Vehicle-to-Grid Integration</b> <ul style="list-style-type: none"> <li>• Charles Uko, University of South Carolina, USA</li> <li>• Ona Egbue, University of South Carolina Upstate, USA</li> <li>• Desineni Naidu, University of Minnesota, USA</li> </ul>
S038	<b>An Analysis of Large-Scale Cannabis Farming</b> <ul style="list-style-type: none"> <li>• Zachary Unson, Florida Polytechnic University, USA</li> <li>• Tyler Francis, Florida Polytechnic University, USA</li> <li>• Brandon Rubio, Florida Polytechnic University, USA</li> <li>• Addison Arnold, Florida Polytechnic University, USA</li> </ul>
PO040	<b>Evaluation of Affordable Solar Cells</b> <ul style="list-style-type: none"> <li>• Christopher Scaduto, Florida Polytechnic University, USA</li> <li>• Zachary Unson, Florida Polytechnic University, USA</li> <li>• Andres Regalado, Florida Polytechnic University, USA</li> <li>• Robert Acacio, Florida Polytechnic University, USA</li> <li>• Richard Matyi, Florida Polytechnic University, USA</li> <li>• Melba Horton, Florida Polytechnic University, USA</li> <li>• Robert Austin, Florida Polytechnic University, USA</li> </ul>

<b>E2</b>	<b>Environmental, Legal, Social, Economic, and Political Impacts</b>
S092	<b>Comparison of BDC linker-based MOFs for carbon dioxide trapping; curb climate change</b> <ul style="list-style-type: none"> <li>• Aisha Asghar, USPCAS-E, NUST, Pakistan</li> <li>• Naseem Iqbal, USPCAS-E, NUST, Pakistan</li> <li>• Tayyaba Noor, SCME, NUST, Pakistan</li> </ul>
F066	<b>What Is the Value of Alternative Methods for Estimating Ramping Needs?</b> <ul style="list-style-type: none"> <li>• Evangelia Spyrou, National Renewable Energy Laboratory, USA</li> <li>• Venkat Krishnan, National Renewable Energy Laboratory, USA</li> <li>• Qingyu Xu, Johns Hopkins University, USA</li> <li>• Benjamin Hobbs, Johns Hopkins University, USA</li> </ul>
F016	<b>Economic Analysis of Li-Ion Battery Energy Storage System</b> <ul style="list-style-type: none"> <li>• David Preciado, West Texas A&amp;M University, USA</li> <li>• Anitha Subburaj, West Texas A&amp;M University, USA</li> <li>• Vinitha Subburaj, West Texas A &amp; M University, USA</li> <li>• Petterson Pham, West Texas A&amp;M University, USA</li> </ul>

<b>F</b>	<h2 style="margin: 0;">Intelligent Future Grid</h2> <ul style="list-style-type: none"> <li>• Chair: Shuva Paul, National Renewable Energy Laboratory, USA</li> <li>• Co-Chair: Fei Ding, National Renewable Energy Laboratory, USA</li> </ul>
----------	---

F1	Intelligent Future Grid
F087	<p><b>Augmented Reality for Smarter Bangladesh</b></p> <ul style="list-style-type: none"> <li>• Muhtasim Riffat, North South University, Bangladesh</li> <li>• Abrar Yasir, North South University, Bangladesh</li> <li>• Intisar Tahmid, North South University, Bangladesh</li> <li>• Shuva Paul, National Renewable Energy Laboratory, USA</li> <li>• Tanvir Ahad, Oklahoma University, USA</li> <li>• Eklas Hossain, Oregon Renewable Energy Center, USA</li> </ul>
F091	<p><b>An Awareness Study of Smartmeters Radiation on Human Head</b></p> <ul style="list-style-type: none"> <li>• Md Tanvir Ahad, University of Oklahoma, USA</li> <li>• Akhlaqur Rahman, Engineering Institute of Technology, Australia</li> </ul>

F2	Intelligent Future Grid
F097	<p><b>Sustainable PKL electricity for use in smart grid DC appliances</b></p> <ul style="list-style-type: none"> <li>• Md. Kamrul Alam Khan, Jagannth University, Bangladesh</li> <li>• Shahinul Islam, Uttara University, Bangladesh</li> <li>• M.A. Saime, Dinajpur Polytechnique Institute, Bangladesh</li> <li>• S.R. Rasel, LGE Department, Fulbaria, Bangladesh</li> <li>• Sazzad Hossain, Shantinagar Plaza, Dhaka, Bangladesh</li> </ul>
F100	<p><b>Residential Energy Management: A Machine Learning Perspective</b></p> <ul style="list-style-type: none"> <li>• Mahmood Reaz Sunny, Uttara University, Bangladesh</li> <li>• Md Ahsan Kabir, Military Institute of Science and Technology, Bangladesh</li> <li>• Intisar Tahmid Naheen, North South University, Bangladesh</li> <li>• Md Tanvir Ahad, University of Oklahoma, USA.</li> </ul>
F100	<p><b>Residential Energy Management: A Machine Learning Perspective</b></p> <ul style="list-style-type: none"> <li>• Mahmood Reaz Sunny, Uttara University, Bangladesh</li> <li>• Md Ahsan Kabir, Military Institute of Science and Technology, Bangladesh</li> <li>• Intisar Tahmid Naheen, North South University, Bangladesh</li> <li>• Md Tanvir Ahad, University of Oklahoma, USA.</li> </ul>
OP098	<p><b>Portable Smart Grid PKL (Pathor Kuchi Leaf) Powered Lantern for Use in off grid areas</b></p> <ul style="list-style-type: none"> <li>• K.A. Khan, Jagannath University, Bangladesh</li> <li>• Shahinul Islam, Uttara University, Bangladesh</li> <li>• Md. Ohiduzzaman, Jashore University of Science &amp; Technology, Bangladesh</li> <li>• Rajia Sultana, Primeasia University, Bangladesh</li> <li>• Rajada Khatun, Atomic Energy Centre, Bangladesh</li> </ul>
F116	<p><b>Intermittency mitigation and virtual inertia support for PV integration: a new viewpoint</b></p> <ul style="list-style-type: none"> <li>• Arash Anzalchi, Colite Technologies, USA</li> <li>• Kevin O'Hara, Colite Technologies, USA</li> <li>• Arif Sarwat, Florida International University, USA</li> </ul>

**G****Biomedical & Biotechnology****G1****Biomedical & Biotechnology**

S022	<b>A Radio Frequency-based Antenna Sensor for Identifying Finger Pairs</b> <ul style="list-style-type: none"><li>• Chun-Hsi Su, National Taipei University of Technology, Taiwan</li><li>• Hong-Wei Wu, National Taipei University of Technology, Taiwan</li></ul>
S010	<b>Electrochemical Gridbuffer(tm)</b> <ul style="list-style-type: none"><li>• Stephen Shepherd, Shepherd Hydricity, USA</li></ul>
P053	<b>NASA Exoskeleton work creates next generation prosthetics</b> <ul style="list-style-type: none"><li>• Jay Martin, Martin Bionics, USA</li></ul>
P074	<b>The Role of Biosensors in a Green Economy</b> <ul style="list-style-type: none"><li>• Tom Jobe, Jobe Farms LLC, USA</li></ul>

# H Radar, Weather Forecasting, Water & Sanitation

H1	Radar, Weather Forecasting, Water & Sanitation
F018	<b>A Low-Cost Environmental Nitrate Sensor</b> <ul style="list-style-type: none"> <li>Robert Dean, Auburn University, USA</li> <li>Elizabeth Guertal, Auburn University, USA</li> <li>Adam Newby, Auburn University, USA</li> </ul>
F020	<b>Mutual Coupling Compensation for Phased Array Weather Radar</b> <ul style="list-style-type: none"> <li>Shajid Islam, University of Oklahoma, USA</li> <li>Sharif Atique, Texas Tech University, USA</li> </ul>

H2	Radar, Weather Forecasting, Water & Sanitation
F024	<b>Time series forecasting of total daily solar energy generation: A comparative analysis between ARIMA and machine learning techniques</b> <ul style="list-style-type: none"> <li>Sharif Atique, Texas Tech University, USA</li> <li>Subrina Noureen, Texas Tech University, USA</li> <li>Vishwajit Roy, Texas Tech University, USA</li> <li>Stephen Bayne, Texas Tech University, USA</li> <li>Joshua Macfie, Group Nire, USA</li> </ul>
S034	<b>Low-Cost, Lightweight UWB Antenna Design for Humanitarian Drone-Launched GPR Surveys</b> <ul style="list-style-type: none"> <li>Salah Badjou, American Polytechnic Institute, USA</li> <li>Doria Kutrubes, Radar Solutions International, USA</li> <li>Khaled Bounar, Raytheon, Inc., USA</li> </ul>
P070*	<b>Autonomous Air Quality &amp; Water Vapor Density Detection Via Quadcopter</b> <ul style="list-style-type: none"> <li>Doney Peters, California State University, Bakersfield, USA</li> <li>Chengwei Lei, California State University, Bakersfield, USA</li> </ul>
P081	<b>The intraday and day-ahead wind power forecasting with error data and actual data using ARIMA and Wavelet-ARIMA</b> <ul style="list-style-type: none"> <li>Akshita Gupta, IIT Roorkee, India</li> <li>Arun Kumar, IIT Roorkee, India</li> </ul>

# I Architectural and Engineering Sustainable Designs

I1 Architectural and Engineering Sustainable Designs	
O051	<b>Production of Dredged Material for Compressed Stabilized Earth Block (CSEB) and Its Potential in Building Structure</b> <ul style="list-style-type: none"> <li>Bosheng Liu, University of Louisiana at Lafayette, USA</li> <li>Quoc Dang Minh, University of Louisiana at Lafayette, USA</li> </ul>
F088	<b>Occupancy Detection Enhanced Building HVAC Energy Consumption Prediction</b> <ul style="list-style-type: none"> <li>Weisong Tian, Widener University, USA</li> <li>Chengwei Lei, California State University Bakersfield, USA</li> </ul>

I2 Architectural and Engineering Sustainable Designs	
F002	<b>Sustainable Earthen Housing System for Forcibly Displaced Population and Disaster Affected Areas</b> <ul style="list-style-type: none"> <li>Feremnet Tegegnework, Ethiopian Construction Design and Supervision Works Corporation, Ethiopia</li> <li>Sofonias Arefaine, MODCON Engineering Plc, Ethiopia</li> </ul>
S009	<b>Deep Learning Based Visual Automated Sorting System for Remanufacturing</b> <ul style="list-style-type: none"> <li>Chigozie Nwankpa, University of Strathclyde, United Kingdom</li> <li>Solomon Eze, University of Strathclyde, United Kingdom</li> <li>Winifred Ijomah, University of Strathclyde, United Kingdom</li> </ul>
F039	<b>Design and Stability Analysis of an Offshore Floating Multi-Turbine Platform</b> <ul style="list-style-type: none"> <li>Srikanth Bashetty, Texas A&amp;M University Kingsville, USA</li> <li>Selahattin Ozcelik, Texas A&amp;M University Kingsville, USA</li> </ul>
P059*	<b>Opportunities and Challenges of Geothermal Drilling for Renewable Energy Generation</b> <ul style="list-style-type: none"> <li>Cesar Vivas, University of Oklahoma, USA</li> <li>Saeed Salehi, University of Oklahoma, USA</li> </ul>

<b>J</b>	<b>Sustainability, Education and Perspectives</b>
----------	---

<b>J1</b>	<b>Sustainability, Education and Perspectives</b>
OP032	<b>An Online Energy and Power Engineering Minor</b> <ul style="list-style-type: none"><li>• Radian Belu, Southern University, USA</li></ul>
O062	<b>Study and Implementation of a Phase Shifting Transformer at OG&amp;E</b> <ul style="list-style-type: none"><li>• James Thomas, Oklahoma Gas &amp; Electric, USA</li><li>• Feng Ma, Oklahoma Gas &amp; Electric, USA</li></ul>
OP082	<b>Logit MRDDV-based Risk Prediction of Power Outage</b> <ul style="list-style-type: none"><li>• Dory Deines, Oklahoma City University, USA</li><li>• Frederic Walter, Oklahoma City University, USA</li><li>• Indy Park, Oklahoma City University, USA</li></ul>