Milwaukee Engineering Research Conference Agenda

Thursday, May 5

CONFERENCE KICK-OFF (Room 7970)

8:30  Continental Breakfast
9:00  Opening Remarks, Dean Brett Peters
9:15  Welcome, Chancellor Mark Mone

GENERAL SESSION (Room 7970)

9:30  Mark Gottlieb, Secretary, Wisconsin Department of Transportation  
Technology and Research to Overcome Challenges in the State and Federal Transportation Systems

9:45  Barry Johnson, Division Director, Industrial Innovation, National Science Foundation  
Industrial Innovation and Partnerships at NSF

10:15 BREAK

10:30  Brian Thompson, President, UWM Research Foundation  
UWM’s Innovation Engine – Leveraging Partnerships, Entrepreneurship and the I-Corps Program to Foster Commercialization of Technology

11:00  Dave Vasko, Director, Advanced Technology, Rockwell Automation  
Advanced Manufacturing, Challenges of a Connected World

11:30  Andrew Greene, Dr. Robert D. and Dr. Patricia E. Kern Professor of Biotechnology and Bioengineering Department of Physiology BBC  
Engineering the Next Generation of Medicine

12:00 LUNCH, on your own

GENERAL SESSIONS (Room 7970)

1:00  Alan Perlstein, Executive Director, M-WERC

1:30  Seth Snyder, Water Initiative Leader, Argonne National Labs  
Emerging Collaborations and Argonne’s Research Programs in Analysis, Sensing, and Water Treatment

2:00  Jay Bayne, Chair & Executive Director, Milwaukee Institute  
Cyberphysical Systems - A Framework for Engineering Complex Distributed Systems

CONCURRENT SESSION 1 (Room 7220)

1:30  Pradeep Rohatgi, UWM Distinguished Professor, Materials Science & Engineering

2:00  Zeyun Yu, Associate Professor, Computer Science/Biomedical Engineering  
Biomedical Image-Based 3D Modeling and Simulation
## Milwaukee Engineering Research Conference Agenda

**Thursday, May 5 (continued)**

### CONCURRENT SESSION 2 (Room 7230)

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Title / Affiliation</th>
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<tbody>
<tr>
<td>1:00</td>
<td>Al Ghorbanpoor, Professor, Physical Infrastructure &amp; Transportation</td>
<td>Infrastructure and Transportation Research at UWM</td>
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<tr>
<td>1:30</td>
<td>Jian Zhao, Associate Professor, Civil &amp; Environmental Engineering</td>
<td>Steel-Concrete Connections in High-Rise Buildings</td>
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<tr>
<td>2:00</td>
<td>Konstantin Sobolev, Associate Professor, Civil &amp; Environmental Engineering</td>
<td>Nanotechnology for Concrete Applications</td>
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### CONCURRENT SESSION 3 (Room 7330)

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<tbody>
<tr>
<td>2:00</td>
<td>Chris Yuan, Associate Professor, Mechanical Engineering</td>
<td>Modeling Lithium Ion Battery Degradation and Greenhouse Gas Emissions from Electric Vehicles</td>
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<tr>
<td>2:30</td>
<td><strong>BREAK</strong></td>
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### CONCURRENT SESSION 1 (Room 7220)

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<tbody>
<tr>
<td>3:00</td>
<td>Susan McRoy, Professor, Computer Science</td>
<td>Building Intelligent Dialog Systems to Promote Health</td>
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<tr>
<td>3:30</td>
<td>Habib Rahman, Assistant Professor, Biomedical Engineering / Mechanical Engineering</td>
<td>Robot Aided Upper/Lower-Extremity Rehabilitation and Motion Assist</td>
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<td>3:00</td>
<td>Chiu Law, Associate Professor, Electrical Engineering</td>
<td>Fiber Optical Current Sensors and Stress Sensors Based on Magnetostrictive Composites</td>
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<tr>
<td>3:30</td>
<td>Deyang Qu, Professor, Johnson Controls Endowed Chair, Energy Storage Research</td>
<td>Rechargeable Lithium Air Battery – A Rough Road to the Holy Grail</td>
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### CONCURRENT SESSION 3 (Room 7330)

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<tr>
<td>3:00</td>
<td>Woo-Jin Chang, Assistant Professor, Mechanical Engineering</td>
<td>Low-Cost Electrochemical Water Sensors</td>
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<tr>
<td>3:30</td>
<td>Junhong Chen, Distinguished Professor of Mechanical Engineering and Materials Science and Engineering, Director of NSF Water Equipment and Policy I/UCRC</td>
<td>Ultrasensitive Phosphorene-Based Gas Sensors</td>
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### 4:00 – RECAP OF DAY 1 (Room 7970)
Milwaukee Engineering Research Conference Agenda

Friday, May 6

CONFERENCE KICK-OFF (Room 7970)

8:30 Continental Breakfast

9:00 Bruce Ramme, Vice President, Environmental, We Energies
Environmental Perspectives and Research Opportunities for the Power Industry

9:30 Mike Molnar, Director, Advanced Manufacturing National Program Office, National Institute of Standards and Technology, U.S. Department of Commerce
Building a New Partnership – Progress and Opportunities with the National Network for Manufacturing Innovation

GENERAL SESSION (Room 7970)

10:00 Bob Heideman, Senior VP, CTO, A.O. Smith
Potential Research Opportunities in the Water-Energy Nexus

10:30 BREAK

GENERAL SESSIONS (Room 7970)

11:00 Jill Engel-Cox, Deputy Director, Energy & Sustainability, JISEA/NREL (Joint Institute for Strategic Energy Analysis)
Analysis of the Manufacturing of Clean Energy Technologies

11:30 Babu Chalamala, Manager, Energy Storage Systems and Technology Dept., Sandia National Laboratories
Grid Energy Storage

12:00 Mike Andrew, Director of Academic and Technical Programs, Johnson Controls
Battery Energy Storage – Applications-Driven Research

BIOMEDICAL TRACK SESSIONS (Room 7220)

11:30 Vitaliy L. Rayz, Mechanical Engineering, University of Wisconsin – Milwaukee, Neurosurgery, Medical College of Wisconsin
Predictive Modeling of Blood Flow in Cerebral Aneurysms Following Surgeries

11:50 Yongjin Sung, Assistant Professor, Biomedical Engineering/Mechanical Engineering
Holographic 3-D Imaging Flow Cytometry

12:15 Ramin Pashaie, Associate Professor, Biomedical Engineering
Optical Brain Interfaces
Milwaukee Engineering Research Conference Agenda

Friday, May 6 (continued)

12:30  LUNCH, on your own

GENERAL SESSIONS (Room 7970)

1:30  Babu Chalamala, Manager, Energy Storage Systems and Technology Dept., Sandia National Laboratories
      Energy Research at Sandia

2:00  Reza Shaker, Associate Dean, Director, Biomedical and Health, Medical College of Wisconsin, Clinical and Translational Science Institute
      Translational Science – You are the Next Generation of Translational Scientists

2:30  Brian Kost, General Manager, Imaging Subsystems Engineering, GE Healthcare

CONCURRENT SESSION 1 (Room 7230)

2:00  Rob Cuzner, Assistant Professor, Electrical Engineering
      Protection Challenges in the Inter-Connection of DC-Enabled Smart Homes, Communities and Buildings

2:30  Lingfeng Wang, Associate Professor, Electrical Engineering & Computer Science
      Trustworthy Cyber-Physical Systems and Infrastructures

CONCURRENT SESSION 2 (Room 7330)

2:00  Ilya Avdeev, Associate Professor, Mechanical Engineering
      Automotive Energy Storage Systems: Multiscale Approach to Design for Safety

3:00  BREAK

GENERAL SESSIONS (Room 7970)

3:15  Changsoo Kim, Associate Professor, Materials Science & Engineering
      Beyond Li-ion Batteries: Status and Challenges in Na-based Battery Applications

3:35  Junjie Niu, Assistant Professor, Materials Science & Engineering
      Engineering Novel Nano-Architectures for Large Energy Storage Devices

3:55  Michael Nosonovsky, Associate Professor, Mechanical Engineering
      Biomimetic Surfaces and Materials for Water-Related Applications

CONCURRENT SESSION 1 (Room 7220)

3:15  Amol Mali, Associate Professor, Computer Science
      Using Artificial Intelligence to Change Keyboard Layout to Reduce Finger Travel Distance
CONCURRENT SESSION 1 (Room 7220)
3:35  Mukul Goyal, Associate Professor, Computer Science
      Modeling Blood Glucose Level Variations in People with Diabetes

CONCURRENT SESSION 1 (Room 7220)
3:55  Guangyu Xu, Associate Professor, Computer Science
      Cryptography, Digital Currencies, and the Blockchain

CONCURRENT SESSION 2 (Room 7230)
3:15  Adel Nasiri, Professor, Associate Dean for Research, Electrical Engineering
      Microgrid and Energy Storage Research
3:35  Ryoichi Amano, Professor, Mechanical Engineering
      Water and Renewable Energy
3:55  Qian Liao, Associate Professor, Civil & Environmental Engineering
      Probing the Physics of Environmental Flows with Computer Imaging

CONCURRENT SESSION 3 (Room 7330)
3:15  Habib Tabatabai, Associate Professor, Civil & Environmental Engineering
      A Novel Sensor for Detection of Surface Ice and Water on Bridge Decks and Pavements
3:35  Weizhong Wang, Associate Professor, Electrical Engineering
      Magnetic Content Addressable Memory

4:15 – CONFERENCE RECAP (Room 7970)