Tuesday, May 12

1:30 PM  Welcome and introductions

2:00 PM  IMR Keynote Address:
Sunlight-Driven Hydrogen Formation by Membrane-Supported Photoelectrochemical Water Splitting
Nathan S. Lewis, California Institute of Technology

3:00 PM  Welcome

Wednesday, May 13

8:30 AM  Registration

8:45 AM  Introductions

9:00 AM  Cross Cutting Session:
Materials and Sustainability: An Industry Perspective (I)
Session Chair: Steven A. Ringel

11:30 AM  Lunch – on your own

1:00 PM  Focus Session 1:
Sustainable Energy Harvesting and Storage
Session Chair: Robert Baker

Focus Session 2:
The Role of Materials in a Sustainable and Resilient Economy
Session Chairs: Andrew Cruse and Joseph Fiksel

3:00 PM  Welcome

Registration fee: $45 for Current Students, $55 for All Others
### Thursday, May 14

**The Blackwell and Pfahl Hall**

**8:30 AM** Registration

**9:00 AM** Cross Cutting Session: Materials and Sustainability: An Industry Perspective (II)
- **Session Chair:** Glenn Daehn
- **Location:** 140 Pfahl Hall

**11:30 AM** Lunch – on your own

**1:00 PM** Focus Session 3: Energy Efficient Systems
- **Session Chair:** Steven R. Boona
- **Location:** 140 Pfahl Hall

**Focus Session 4: Materials for Sustainable Design**
- **Session Chairs:** Justin Diles and Steve Niezgoda
- **Location:** 202 Pfahl Hall

**5:00 PM** Poster Session and Reception
- **Location:** Blackwell Ballroom & Patio

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<th>Time</th>
<th>Session</th>
<th>Speaker</th>
<th>Location</th>
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<tbody>
<tr>
<td>9:00 AM</td>
<td>Session Chair’s Remarks</td>
<td>Glenn Daehn, The Ohio State University</td>
<td>140 Pfahl Hall</td>
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<tr>
<td>9:15 AM</td>
<td>CAE for Lightweight Vehicle Development</td>
<td>Duane Detwiler, Honda Research and Development</td>
<td>140 Pfahl Hall</td>
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<tr>
<td>10:00 AM</td>
<td>Developing Usable and Cost Effective Nanomaterial Solutions for Industry</td>
<td>Lance Criscuolo, Zyvex Technologies</td>
<td>140 Pfahl Hall</td>
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<tr>
<td>10:30 AM</td>
<td>Materials and Sustainability: An Oil and Gas Industry Perspective</td>
<td>Srinidhi Rajagopalan, ExxonMobil</td>
<td>140 Pfahl Hall</td>
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<td>11:00 AM</td>
<td>Application of Composite Materials to Turbine Engine Components</td>
<td>Jonathan P. Blank, GE Aviation</td>
<td>140 Pfahl Hall</td>
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<tr>
<td>1:00 PM</td>
<td>Practical Considerations for Use of Thermoelectric Materials in Automotive Applications</td>
<td>Clay C. Maranville, Ford Motor Company</td>
<td>202 Pfahl Hall</td>
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<tr>
<td>2:30 PM</td>
<td>Break</td>
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<td>2:45 PM</td>
<td>Vibration Energy Harvesters Utilizing the Magnetostrictive Effect</td>
<td>Marcelo Dapino, The Ohio State University</td>
<td>202 Pfahl Hall</td>
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<tr>
<td>3:15 PM</td>
<td>Thermoelectrochemical Generators for Waste Heat Recovery</td>
<td>Anne C. Co, The Ohio State University</td>
<td>202 Pfahl Hall</td>
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<tr>
<td>3:45 PM</td>
<td>Thermoelectric and Spin-Thermal Solid-State Energy Conversion</td>
<td>Joseph Heremans, The Ohio State University</td>
<td>202 Pfahl Hall</td>
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<td>4:15 PM</td>
<td>Discussion Panel</td>
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### Focus Session 5: 2D Emergent Materials
9:00 AM
Quantum Transport in High Mobility Few-Layer Atomic Membranes
Jeanie Lau, University California Riverside

10:45 AM
Recent Developments in Group IV Graphane Analogues
Josh Goldberger, The Ohio State University

11:15 AM
Toward Tunable 2D Crystal Properties with Covalent Surface Termination
Jay Gupta, The Ohio State University

11:45 AM
Materials Science in Two Dimensions – All the Science, No Guesswork
Wolfgang Windl, The Ohio State University

### Focus Session 6: Design and Manufacturing
9:00 AM
Design And Manufacturing for Vehicle Lightweighting
Anil Sachdev, General Motors Research and Development

9:45 AM
Multi-Material Lightweight Vehicle (MMLV) Project Overview
Timothy Skszek, Magna International

10:30 AM
Break

10:45 AM
Overview of the OSU Center for Design and Manufacturing Excellence (CDME)
John Bair and Glenn Daehn, The Ohio State University

11:15 AM
Overview of OSU Simulation Innovation and Modeling Center (SIMCenter)
Robert Lee and Shawn Midlam-Mohler, The Ohio State University

11:45 AM
New Approach to Electromagnetic Interference (EMI) Shielding of Plastic Parts Using In Mold Coated (IMC) Nanopaper
Jose Castro, The Ohio State University

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### Student Poster Awards & Closing
12:15 PM
Blackwell Ballroom & Patio