

## Day 1

September 23, 2024 (Monday)  
Devil's Oasis, Arizona State University

Opening Session	08:00-08:30	■ Registration
	08:30-08:45	■ Welcoming Remarks <ul style="list-style-type: none"> <li>• Zachary Holman, Vice Dean for Research and Innovation, Arizona State University</li> <li>• Jinho Ahn, President, Korea Nanotechnology Research Society</li> <li>• Seongsin Margaret Kim, Program Director, National Science Foundation</li> </ul>
	08:45-10:25 (25 min / talk, Q&A)	■ Keynote Speeches <ul style="list-style-type: none"> <li>• Birgit Schwenzer, Program Director, National Science Foundation - Sustainability and nanotechnology</li> <li>• Jinho Ahn, President, Korea Nanotechnology Research Society - Nano Technology and EUV Lithography</li> <li>• Victor Zhirnov, Chief Scientist, Semiconductor Research Corporation - New roadmap for micro- and nanoelectronics: where the semiconductor industry is headed over the next 5, 10, 20 years?</li> <li>• Om Nalamasu, Chief Technology Officer, Applied Materials - Inventions to innovations in deeptech with materials engineering and open innovation</li> </ul>
10:25-10:45		Coffee Break & Group Photo
Poster Session	10:45-11:15 (4 min / talk, Q&A)	<ul style="list-style-type: none"> <li>• Jungwon Choi, University of Washington - High-frequency power electronics using eGaN devices</li> <li>• Jihoon Seo, Clarkson University - Sustainable innovations in CMP slurries from synthesis methods to environmental impact</li> <li>• Inhee Lee, University of Pittsburgh - Millimeter-scale smart sensing semiconductor devices for biomedical applications</li> <li>• Hyunwoong Ko, Arizona State University - Generative diffusion modeling for predictive digital twins of sustainable nanoparticle electronics printing</li> <li>• Ivan Sanchez Esqueda, Arizona State University - Direct synthesis and CMOS integration of 2D materials towards logic and memory devices</li> <li>• Arunkumar Venkataronappa, IBM - CMP process optimization for DIW conservation and metal loss reduction</li> <li>• Sri Siva Rama Krishna Hanup Vegi, Intel - Semiconductor manufacturing going green - role of chemical mechanical planarization (CMP) process</li> </ul>

## 18th U.S.-Korea Forums on Nanotechnology

11:15-12:30		Poster Exhibition & Lunch
<div> <div>Session I</div> <div>Sustainability in Semicon- ductor Manufacturing</div> <div>           Co-chairs:            Ahmed A. Busnaina            (Northeastern University) /            Tae Gon Kim            (Hanyang University)         </div> </div>	<div>12:30-14:30</div> <div>(15min /talk, Q&amp;A)</div>	<div> <div>· Ahmed Busnaina, Northeastern University</div> <div>- Sustainable semiconductor additive manufacturing of micro and nanoscale electronics</div> </div>
		<div> <div>· Tae Gon Kim, Hanyang University</div> <div>- Converging AFM solutions: pioneering nanotechnology for advanced industries</div> </div>
		<div> <div>· Paul Westerhoff, Arizona State University</div> <div>- How can fabs reduce their water footprints: From industrial wastewater reuse to atmospheric water harvesting as make-up supplies for ultrapure water</div> </div>
		<div> <div>· Heeyeop Chae, Sungkyunkwan University</div> <div>- Low global warming gases for plasma etching processes</div> </div>
		<div> <div>· Bruno Azeredo, Arizona State University</div> <div>- Microscale additive manufacturing of high-surface area nanoporous copper: towards hierarchical structures and 3D circuits</div> </div>
		<div> <div>· Haeseong Lee, Jeonju University</div> <div>- Electromagnetic shielding effectiveness measurements on nanomaterials for the sustainability in semiconductor industry</div> </div>
		<div> <div>· Fazleena Badurdeen, University of Kentucky</div> <div>- Towards circular and sustainable semiconductor manufacturing</div> </div>
		<div> <div>· Susannah Calvin, Apple</div> <div>- Climate &amp; Computing</div> </div>
14:30-14:45		Coffee Break
<div> <div>Session II</div> <div>Sensor related to Human Cognition</div> <div>           Co-chairs:            Elias Towe            (Carnegie Mellon University)/            Tae-Woo Lee            (Seoul National University)         </div> </div>	<div>14:45-17:30</div> <div>(15min/ talk, Q&amp;A)</div>	<div> <div>· Kenneth Shepard, Columbia University</div> <div>- Interfacing to the nervous system with CMOS bioelectronics</div> </div>
		<div> <div>· Tae-Woo Lee, Seoul National University</div> <div>- Organic nervetronics for neuroprosthetics</div> </div>
		<div> <div>· Michael J. Sailor, University of California San Diego</div> <div>- Silicon-based nanoparticles for tissue-specific drug delivery to the brain</div> </div>
		<div> <div>· Jinmyoung Joo, Ulsan National Institute of Science and Technology</div> <div>- Nanoparticles at the interface of blood-brain barrier</div> </div>

		<ul style="list-style-type: none"> <li>· <b>Mehdi Nikhah, Arizona State University</b> - <i>Engineering organotypic disease on-a-chip models; harnessing innovations in microfluidics, biomaterials and single-cell resolution analysis</i></li> </ul>
		<ul style="list-style-type: none"> <li>· <b>Oh Seok Kwon, Sungkyunkwan University</b> - <i>Artificial human eyes with photo-receptonics</i></li> </ul>
		<ul style="list-style-type: none"> <li>· <b>Doug Weber, Carnegie Mellon University</b> - <i>Sensing and stimulating the brain to restore neurological function</i></li> </ul>
		<ul style="list-style-type: none"> <li>· <b>Youngbin Tchoe, Ulsan National Institute of Science and Technology</b> - <i>Electrocorticography microdisplay for high precision intraoperative brain mapping</i></li> </ul>
		<ul style="list-style-type: none"> <li>· <b>Sameer Sonkusale, Tufts University</b> - <i>Sustainable point of care diagnostics for human health and wellness</i></li> </ul>
		<ul style="list-style-type: none"> <li>· <b>Jiwon Lee, Pohang University of Science and Technology</b> - <i>Image sensing technologies, challenges and vision</i></li> </ul>
		<ul style="list-style-type: none"> <li>· <b>Josh Hihath, Arizona State University</b> - <i>Integration of biomolecular electronic devices and sensors</i></li> </ul>
18:30 ~		Dinner

## Day 2

September 24, 2024 (Tuesday)

Galleria A and B room, DoubleTree by Hilton Phoenix/Tempe

Discussion / Working Groups	9:00-12:00	<ul style="list-style-type: none"> <li>■ <b>Group Discussion Workshop</b> <ul style="list-style-type: none"> <li>- <i>Group 1 : Sustainability in Semiconductor Manufacturing (Co-chairs: Ahmed Busnaina, Tae Gon Kim)</i></li> <li>- <i>Group 2 : Sensor related to Human Cognition (Co-chairs: Elias Towe, Tae-Woo Lee)</i></li> </ul> </li> </ul>
12:00-13:00		Lunch
Wrap up Discussion & Recommendations	13:00-13:30	<ul style="list-style-type: none"> <li>■ <b>Poster Award Presentation</b></li> <li>■ <b>Draw-up Recommendation to the Governments</b></li> <li>■ <b>Signature of Overall Summary and Recommendation</b></li> </ul>
Closing	13:30-14:30	<ul style="list-style-type: none"> <li>■ <b>Closing Remarks</b></li> </ul>