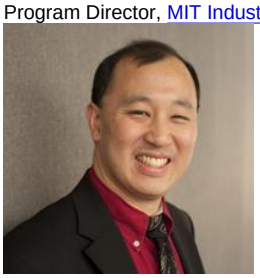
MIT Industrial Liaison Program Faculty Knowledgebase Report

Industrial Decarbonization

January 8, 2026 12:00 pm - 1:00 pm

12:00 PM

Welcome and Introductions
Corey Cheng
Program Director, MIT Industrial Liaison Program



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Program Director
MIT Industrial Liaison Program

Dr. Corey Cheng joined the Office of Corporate Relations (OCR) as an Senior Industrial Liaison Officer in December 2011. He has broad interests in science and technology, and uses his technical research experience to better serve ILP members in Asia and the United States.

Cheng spent six years in industrial research at Dolby Laboratories, San Francisco, where he contributed to sound compression (Dolby Digital, AAC, MP3), wireless networking, fingerprinting, and spatial/“3-D audio” technologies. Later, he was Associate Professor and Director of the undergraduate and graduate programs in music engineering technology at the University of Miami, Florida, where he also held a dual appointment in Electrical and Computer Engineering. Cheng holds various U.S. and international patents, has published technical papers, and has presented at various conferences. His technical work includes collaborations and consulting work with the U.S. Naval Submarine Medical Research Laboratory, Fujitsu-Ten USA, Starkey Laboratories, America Online, and the Chicago Board of Trade (CBOT). Cheng was an IEEE Distinguished Lecturer for the Circuits and Systems Society from 2009-2010, and was a Westinghouse (Intel) Science Talent Search national finalist many years ago.

Cheng holds degrees in Electrical Engineering (Ph.D., M.S.E. University of Michigan), Electro-Acoustic Music (M.A. Dartmouth College), and physics (B.A. Harvard University).

Personally, Dr. Cheng is an American Born Chinese (ABC), serves as his family’s genealogist, and traces his roots back to Toi San, Guang Dong Province and Xing Hua, Jiang Su Province, China. He also has a background in music, and his electro-acoustic compositions have been presented at various U.S. and international venues.

12:03 PM

Decarbonizing Hard-to-Abate Sectors: Examples from Steelmaking and Aviation

Sergey Paltsev

Achieving the goal of the Paris Agreement of keeping the global average surface temperature rise to well below 2 degrees Celsius entails deep reductions in global greenhouse gas (GHG) emissions. While power generation is considered to be the key area for initial mitigation, a large fraction of emissions is generated from energy-intensive and hard-to-abate sources, such as cement plants, iron and steel mills, aviation, and shipping. In this session, we will dive into the options for GHG emission reductions in steelmaking and aviation. We will consider technological pathways, their competitiveness, and potential incentives to accelerate progress towards the sustainability goals.

12:30 PM

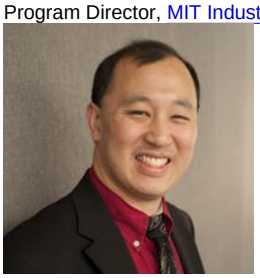
Critical Minerals Processing: Building Resilient and Low-Carbon Energy Supply Chains

Kathy Woody

The transition to a secure, electrified future demands rapid expansion of infrastructure and technological innovation. Central to this transformation is the development of a sustainable supply of critical minerals essential for energy storage, high-power computing, grid expansion, and defense applications. China currently holds a dominant position in the refining and processing of the majority of required minerals, creating strategic vulnerabilities within global supply chains. This concentration of control has far-reaching implications for national security and industrial resilience. Additionally, the lack of focus on the environmental impact of minerals production undermines long-term decarbonization goals. This talk will explain the structure of critical mineral supply chains, highlight challenges for establishing domestic processing capacity, and provide examples of opportunities for innovation and technological development to accelerate deployment and reduce the environmental impact of minerals production.

12:57 PM

Closing Remarks
Corey Cheng
Program Director, MIT Industrial Liaison Program



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