



Developing Tomorrow's Technical Cycles

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REWAS 2022 is the seventh installment of a unique, transdisciplinary conference focused on recycling and sustainability. Don't miss the opportunity to showcase your research and advances on strategies and processes enabling the development of tomorrow's technical cycles.

## Planned REWAS 2022 Symposia

### Diran Apelian Honorary Symposium

Invited speakers will cover topics motivated and inspired by the contributions Dr. Apelian has made to metals processing, aluminum metallurgy, resource recovery and recycling, sustainability, and innovation in engineering education. *Symposium co-organizers:* **Adam Powell**, Worcester Polytechnic Institute; **Bart Blanpain**, Katholieke Universiteit Leuven; **Brajendra Mishra**, Worcester Polytechnic Institute

### Cast Shop Technologies: Recycling and Sustainability Session

This session covers innovative and efficient recycling technologies in the field of light metal casting. A collaboration between REWAS 2022 and the Cast Shop Technology Symposium, it explores: economic and environmental impacts of light metal recycling, pre-treatment and recyclability of complex scraps, and new recycling processes. *Symposium co-organizer:* **Stephan Broek**, Hatch

### REWAS 2022: Sustainable Production and Development Perspectives

The sustainability of materials, and the materials industries, is directly coupled to the sustainable development of emerging economies and how we envision the urban ecosystems of the future. Contributions on societal and environmental impacts of metallurgy, economic and policy perspectives, design for sustainability approaches, the development of a responsible global circular economy, and how these concepts fit within the UN's Sustainable development goals are of interest. *Symposium co-organizers:* **Mingming Zhang**, Wood Mackenzie; **Haoyang He**, University of California Irvine

### REWAS 2022: Recovering the Unrecoverable

This symposium covers advances in process technologies for the recycling and valorization of complex man-made materials and products, as well as for extraction and recovery of metals from secondary and byproduct sources, such as: energy generation and storage systems, electronic and complex scrap, and industrial and metallurgical residues containing critical metals. *Symposium co-organizers:* **John Howarter**, Purdue University; **Takanari Ouchi**, University of Tokyo; **Gisele Azimi**, University of Toronto

### REWAS 2022: Automation and Digitalization for Advanced Manufacturing

Industry 4.0 approaches including AI; big data; and advanced modeling, simulation, and visualization techniques have gained tremendous momentum and are transforming the metal and material industries and value chains. This forward-looking symposium focuses on their application to: use of digitalization for footprint reduction; materials, products, processes, value chains; and design, optimization, and impact assessment. *Symposium co-organizer:* **Alexandra Anderson**, Gopher Resource

### REWAS 2022: Decarbonizing the Materials Industry

This symposium covers CO<sub>2</sub> emission reduction efforts across primary and secondary industries, including optimization, new technologies and equipment, and policies and metrics in the following domains: alternative fuels and electrification; carbon capture and utilization technologies; and carbon-free reducing agents and anodes. *Symposium co-organizers:* **Jesse White**, Elkem AS; **Nwike Iloeje**, Argonne National Laboratory; **Neale Neelameghaam**, IND LLC; **Stephen Instone**, Hydro

### Proceedings

REWAS 2022 full papers will be published in standalone proceedings. The best papers submitted to REWAS 2022 will be considered for publication in a special issue of the *Journal of Sustainable Metallurgy*.

## Organizing Committee

### LEAD ORGANIZERS:

- **Mertol Göknelma**, Izmir Institute of Technology
- **Elsa Olivetti**, Massachusetts Institute of Technology
- **Camille Fleuriault**, Gopher Resource
- **Christina Meskers**, Independent consultant

REWAS 2022 is sponsored by:

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TMS Recycling & Environmental Technologies Committee.

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