

TMS2016

145th Annual Meeting & Exhibition

FEBRUARY 14-18 DOWNTOWN NASHVILLE,
TENNESSEE MUSIC CITY CENTER

Connecting the Global Minerals, Metals, and Materials Community.

Energy Technologies and Carbon Dioxide Management

This symposium addresses the issues, complexities, and challenges relating to mass and energy flow in the chemical and process engineering industry and impacts to the environment. Topics on CO₂ sequestration and reduction in greenhouse gas emissions from process engineering and materials for clean energy are invited. Papers addressing sustainable technologies in extractive metallurgy, materials processing and manufacturing industries with reduced energy consumption and CO₂ emission are also solicited, as well as industrial energy efficient technologies including innovative ore beneficiation, smelting technologies, recycling and waste heat recovery. The symposium is open to contributions from research and development in non-traditional/non-nuclear energy generation, namely thermoelectric (e.g., phase change materials, etc.), solar, geothermal and wind. The symposium is also inviting papers on novel mineral beneficiation, processing, and extraction techniques leading to waste minimization of critical rare-earth materials utilized in energy systems.

Topics will include:

- CO₂ and other greenhouse gas reduction metallurgy in ferrous (iron and steel making and forming), non-ferrous, and reactive metals including critical rare-earth metals
- Renewable energy resources for metals and materials production
- Photo-electrochemical reduction of CO₂, photo-electrolysis fundamentals
- Thermo-electric/electrolysis/photo-electrolysis/fundamentals of PV
- Fundamentals of concentrated solar power generation
- Waste heat recovery and other industrial energy efficient technologies
- Energy education and energy regulation
- Carbon footprint and life cycle assessment
- Carbon sequestration techniques
- Energy process and modeling

Organizers include:

Li Li, Cornell University (USA)
Donna Guillen, Idaho National Laboratory (USA)
Neale Neelameggham, IND LLC (USA)
Lei Zhang, University of Alaska (USA)
Jingxi Zhu, Carnegie Mellon University (USA)

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