



# TMS 2011

## 140th Annual Meeting & Exhibition

February 27 to March 3, 2011

San Diego Convention Center • San Diego, California USA

### Silicon Production, Purification and Recycling for Photovoltaic Cells

#### Sponsored by

TMS Extraction and Processing Division  
TMS Light Metals Division

#### Scope

To support the growing need for renewable clean energy, a two session symposium is planned to enable research and the latest developments to be presented on the Production, Refining & Purification and Recycling & Sustainability of silicon and other materials used to produce photovoltaic solar cells and modules. Below are areas for papers:

- 1. Production:** Carbothermic, siemens, fluidized bed, carbothermic, electrochemical, fractional crystallization and other emerging methods.
- 2. Refining & Purification:** Electrolytic, directional solidification, filtration, slag refining, plasma refining, vacuum refining, leaching or other innovative techniques that will remove impurities from silicon such as B, P, heavy metals e.g. Fe, or remove inclusions.
- 3. Recycling & Sustainability:** Methods to recycle silicon cells, Ag, Al paste, glass, aluminum frames, solder interconnects, Pb-free solders, alternative low cost, nontoxic, abundant materials for thin film PV. Materials and energy payback and lifecycle analysis as well as evaluations of greenhouse gas generation.

#### Organized by

**Anne Kvithyld**, SINTEF, Norway  
anne.kvithyld@sintef.no

**Gregory J. Hildeman**, Consultant, USA  
gjhildeman@aol.com

**Gabriella Tranell**, Norwegian University of Science and Technology (NTNU), Norway  
gabriella.tranell@ntnu.no

**Arjan Ciftja**, SINTEF, Norway  
arjan.ciftja@sintef.no

#### To submit an abstract:

Abstracts must be submitted by July 15, 2010 via ProgramMaster featured on the [TMS 2011 home page](#). (Please click on the 'Abstract Submissions' link in the ProgramMaster box).

