

February 27 to March 3, 2011 San Diego Convention Center • San Diego, California USA

# Carbon Dioxide and Other Greenhouse Gas Reduction Metallurgy

### Sponsored by

TMS Extraction and Processing Division TMS Light Metals Division TMS Energy Committee

### **Topics**

This is the fourth symposium on CO2 Reduction Metallurgy and would include Reduction of Other Greenhouse Gases as well. A special session on solar photo-electrocatalysis for the production of fuels and chemicals will be included.

Carbon dioxide is just another oxide like water or any metal oxides. We all know that metal oxides and hydrogen oxides can be reduced to the respective elements [which were compounded with oxygen] by applied energy. In the same way, efficient reduction of carbon dioxide can help to minimize the rate of global warming and improving fuel self sufficiency [distributed availability] will also occur by properly tailored extractive metallurgical techniques.

This symposium will pave way into addressing how to accomplish this in a cost effective manner, utilizing all available energy sources including solar and stored energy in the form of wastes. Water vapor, a triatomic gas, is a green-house gas unless it can be condensed without heating up its surroundings. Fossil fuel energy uses always release water vapor in the flue gases and is a thermal emission which needs to be controlled while addressing Climate change, Other green-house gases in common to light metal industry include multi-atomic not easily decomposable fluorine containing gases.

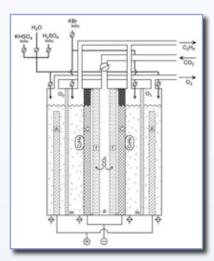
This symposium will include discussions on carbon management and use of solar or wind or other alternate energy in the processing of minerals, metals and materials.

# **Organized by**

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# To submit an abstract:

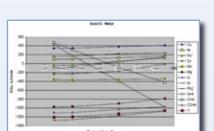
Abstracts must be submitted by July 15, 2010 via ProgramMaster featured on the <u>TMS 2011 home page</u>. (*Please click on the 'Abstract Submissions' link in the ProgramMaster box*).



Ogura's Aqueous Electrolytic Process of CO2 Making Ethylene



Solar reactor for splitting H2O and CO2 with concentrated solar energy. Source: PSI/ETH-Zurich, Switzerland



Soda 12 - Metal Reaction Energy [Soda12 + Metal] = 2H<sub>2</sub> +CO +MO]