27 Nov - 01 Dec 2011, Fiesta Americana Condesa Cancun All Inclusive Resort, Cancun, Mexico

Recycling Waste Materials in Industrial Processes

Prof. Veena Sahajwalla

Short Course: 27 Nov 2011, Fiesta Americana Condesa All Inclusive Resort, Cancun, Mexico

Effective utilization of waste materials as resources offers significant opportunities for environmental protection. This course is designed to help participants to develop an understanding of recycling solid wastes in high temperature processes.

The disposal of carbonaceous materials has become a major international problem; especially for waste resulting from the world's fast growing reliance on polymeric materials including plastics and rubber tires. Their disposal involves significant environmental burden, including greenhouse gas and toxic emissions from the two main conventional methods of disposal: landfills and incineration. There is a growing interest in recycling these materials as materials and energy resources. This course will present advances, reported in the literature, in the field of innovative recycling, and examples from industries including cement, iron and steel will be discussed.

Who Should Attend

This course will be beneficial to organizations interested in exploring opportunities for recycling. Professionals from these organizations including plant managers, engineers, scientists and technologists involved in the development and implementation of recycling waste materials would find the course exciting and informative.

Presentation Outline:

The course aims to highlight key developments, both scientific and technological, to demonstrate that waste materials may be regarded as viable raw materials that could enhance environmental sustainability of industrial processes.

The course will discuss various types of waste materials and their characteristics. Studies on the physical and chemical transformations of different waste materials during high temperature reactions will be presented. High temperature reactions with gas and slag phases will be discussed to link the material properties and their reactions, which will control the ability to use waste materials as resources.

Improvements in high temperature phenomena, including those in EAF steelmaking, will be discussed as an example of an environmental success story.

Topics include:

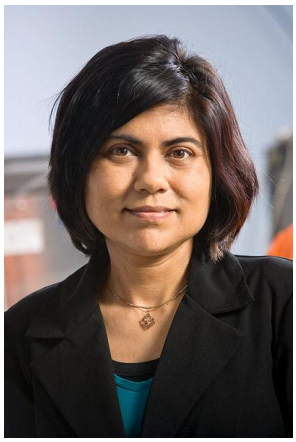
1. Waste materials

- Identification of wastes; eg: consumer and industrial
- Quantification of waste materials and their characteristics

2. Cement industry – Alternative fuels and raw materials (AFR) – resource recovery from wastes
3. Iron making - process overview and sustainable practices through technological developments and waste materials utilization; e.g. PCI in blast furnace
4. Steelmaking – recycling waste materials in Electric Arc Furnace (EAF) – process overview and
   - recycling waste plastics and rubber tires in EAF steelmaking;
   - Environmental wins achieved

The participants will also receive:

- CD with course material
- Certificate of completion
- A copy of instructor's recently published articles related to energy management
- Lunch and refreshments



Course Instructor Prof. Veena Sahajwalla

Scientia Professor Veena Sahajwalla is the leader of research into Sustainable Materials as the Director of Sustainable Materials Research & Technology (SMaRT@UNSW) at the University of New South Wales. She received MASc, Metals and Materials Engineering, University of British Columbia, Canada and PhD, Materials Science and Engineering, University of Michigan, US.Veena's research interests throughout her career have been in sustainability of materials and processes with an emphasis on environmental and community benefits. Through this interest, Veena has invented an environmentally friendly process of recycling plastics and rubber tyres in steelmaking. Veena is an international award winning scientist and engineer who has presented on her research and experiences throughout the world. She has collaborated with Australian companies and overseas companies/institutions. She has published in excess of 190 papers in journals and conference proceedings. In 2005, she received Eureka Prize for Scientific Research. She also received the 2006 Environmental Technology Award from Association of Iron & Steel Technology in the United States for her research into recycling waste plastics in steelmaking. She was elected as a Fellow of the Australian Academy of Technological Sciences and Engineering (ATSE) in 2007.

REGISTRATION: https://www.flogen.com/FraySymposium/registration.php