Special Issue

Advances in Materials Application for Chemical Looping

Message from the Guest Editors

Chemical looping concept is investigated to provide clean and efficient solutions for energy and environment, such as combustion, hydrogen production, gasification, reforming and waste disposal. The process is realized based on the use of redox materials with oxidation□reduction cycle that can transfer oxygen from oxidation medium, eliminating the need of conventional air separation units.Sorbent looping is a related CO2 capture technology with lowest energy demand and CO2 mitigation. CO2 containing flue gas is absorbed by carbon carrierand released in a regenerator. Sorbent looping CO2 capture can also be incorporated into a CO2 producing process or CO2 consumpted process to enable additional revenue.The material performance of oxygen/carbon carrier is key point to the technology of chemical looping or sorbent looping. A comprehensive understanding of material synthesis, properties and applications is necessary and will help the development of this technology.

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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