Master Project/Bachelor Thesis

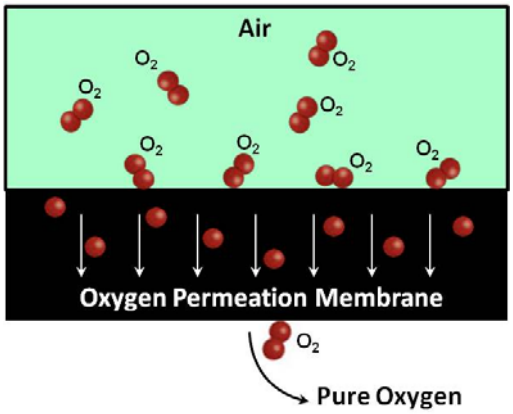
Master Thesis

Start: Anytime in 2011

Next-generation Ceramic Materials for Oxygen Separation Membranes

Description:

Membrane technology for separating oxygen from air is an alternative industrial approach other than the traditional method of compressing air to separate oxygen and nitrogen, respectively. Ceramic materials with high oxygen exchange rate and high oxygen ionic diffusivity are good candidates for oxygen separation membranes.



The Ceramics Group of ETH Zurich is currently participating in a project under the European Union's Seventh Framework Program to develop new materials for oxygen separation membranes.

The work will focus on the synthesis of ceramic powdery materials using solid state reaction and/or wet chemistry. The characterization on the synthesized powder will include X-ray diffraction to identify the crystalline phase, scanning electron microscopy to check the microstructure of the ceramic powder and bulk specimens. This work will investigate oxygen permeability and the electrical properties of the synthesized ceramic materials as well.

Your Background:

Materials science, chemistry, or applied physics with fundamentals of materials science and engineering, multidisciplinary knowledge of inorganic chemistry, solid state chemistry, and crystallography etc. Strong interests in experimental works. Good command of spoken and written English.

Contact:

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