

Future research activities of CPERI will be directed towards a number of existing and emerging areas such as:

- Technologies for the production of clean fuels and bio-fuels
- Hydrogen production from fossil and bio-based sources & fuel cells applications
- Development of advanced membrane separation processes
- Emission control technologies for mobile and stationary sources 4-way converters (CO, HC, NO_x and particulate) for future combustion engines
- Development of new catalytic materials
- Novel sustainable processes
- Novel clean technologies
- Knowledge-based production
- Development of advanced CFD and simulation tools to tackle industrial process and environmental problems
- Development of technology for producing inorganic high temperature proton conducting (HTPC) fuel cells which can be produced on a relatively large scale
- Structure-property relationships of advanced functional materials
- Development of functional nanostructures (e.g., self-assembly systems, liposomes, biomaterials, nanogels, molecularly imprinted polymers) for novel nanotechnology applications (e.g., targeted delivery systems, gene therapy, selective recognition, separation, composite electrocoatings, etc.)
- Development of molecularly imprinted polymeric nanoparticles (MIPs) for selective recognition and separation of biological materials (e.g., aminoacids, peptides)
- Sensor and measurement technologies
- Computer simulation of aerosol & particulate processes
- Tailored nanoparticle synthesis
- Ceramic membranes / Hydrogen
- Magnetic / dielectric materials / radiated electromagnetic energy suppression
- Inorganic materials for medical applications

In order to unlock further CPERI's potential a number of support actions are pursued, exploiting the opportunities offered by European Commission initiatives such as the CAPACITIES program. CPERI has already submitted a comprehensive application to the CAPACITIES program to secure funding for :

- Continuing education of the researchers and technical staff of CPERI through interaction with distinguished scientists and engineers of highly advanced academic and industrial research organizations (hereafter referred to as seconding organizations)
- Establishment of short and long term visits of CPERI people to advanced academic and industrial research organizations

- Hiring of new talented researchers according to the present needs and capabilities of the laboratories
- Institution of awards of excellence for outstanding achievements of CPERI people