

Development and Physicochemical Characterisation of Nanoporous Materials

Materials & membranes for environmental separations laboratory/ Institute of Nanoscience and Nanotechnology/ NCSR Demokritos

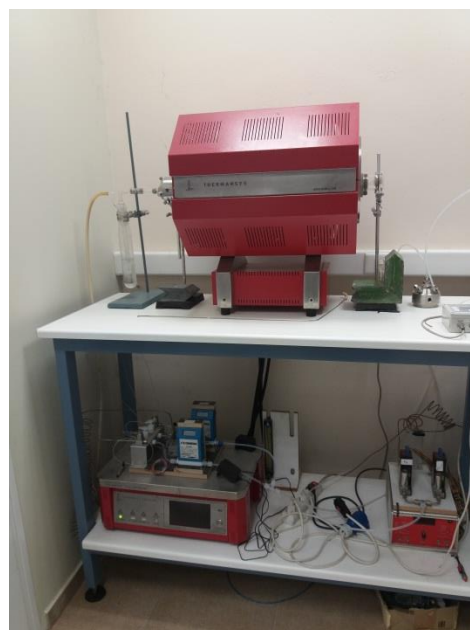
The main research activities focus on the development and physicochemical characterisation of nanoporous materials, membranes and catalytic systems and their applications in advanced physicochemical processes of high environmental, energy and industrial interest.

The research group is classified as a European leader in the S&T field of adsorption/absorption, diffusion and scattering (neutrons and X-ray) and has developed novel pore structure characterisation techniques based on a supplemental approach for interpreting the results generated from the application of adsorption in conjunction with neutron scattering experiments.

Moreover a significant part of the research activity relates to the development of modelling tools for the simulation of materials and processes via molecular dynamics or mesoscopic computational techniques.

Thermansys RCT-AS1-T-1Z-D6/L20-1500 furnace model is mainly used for:

1. The development of CNTs using a gas inlet system
2. The sintering of ceramic materials at temperatures ranged between 400-750°C
3. The preparation of SiC materials. In this case we reach temperatures up to 1450°C for several hours
4. The hydrothermal stability of developed ceramics at 950°C



The furnace is working perfectly since 2013. A significant point is that the furnace does not create any electromagnetic interference during its operation. Actually Thermansys Company provided an EMI filter for a homemade furnace in our lab which its EMI were affected other sensitive instruments in the lab.

On behalf of MESL team

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