PRESENTER INFORMATION

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BIOGRAPHICAL SKETCH

My main research interests concern physicochemical phenomena occurring inside nanoporous solids, in the broader context of adsorption, electrochemical, and catalytic processes. I am particularly interested in the modelling of disordered porous systems using stochastic methods, and in experimental studies based on synchrotron and neutron scattering (small-angle scattering, and more recently neutron spin echo). By training I am a physicist and a mechanical engineer (fluid mechanics), and I did a PhD in chemical engineering. I have had employment and visiting positions in engineering, mathematics, and chemistry departments (in Princeton, Leuven, Brisbane, Utrecht and Jülich). I currently work in the Department of Chemical Engineering at the University of Liège, on a tenured researcher position from the Belgian funds for scientific research.

TITLE

Small-angle scattering in nanoporous solids

ABSTRACT

Small-Angle Scattering of either x-rays (SAXS) or neutrons (SANS) is one of the few experimental methods that can be used to study structures over length scales ranging from 1 nm to 100 nm. Moreover, it offers huge experimental flexibility in terms of the chemical and physical environment of the investigated samples, which enables in-situ and often time-resolved studies. A major challenge, however, is the data analysis, by which scattering data is converted into meaningful structural information. In this presentation, I will discuss the principles of small-angle scattering in non-technical terms, both from the experimental and data-analysis perspectives. I will also illustrate this with the in-situ SAXS analysis of nanometer-scale wetting in micro- and meso-porous carbons.