

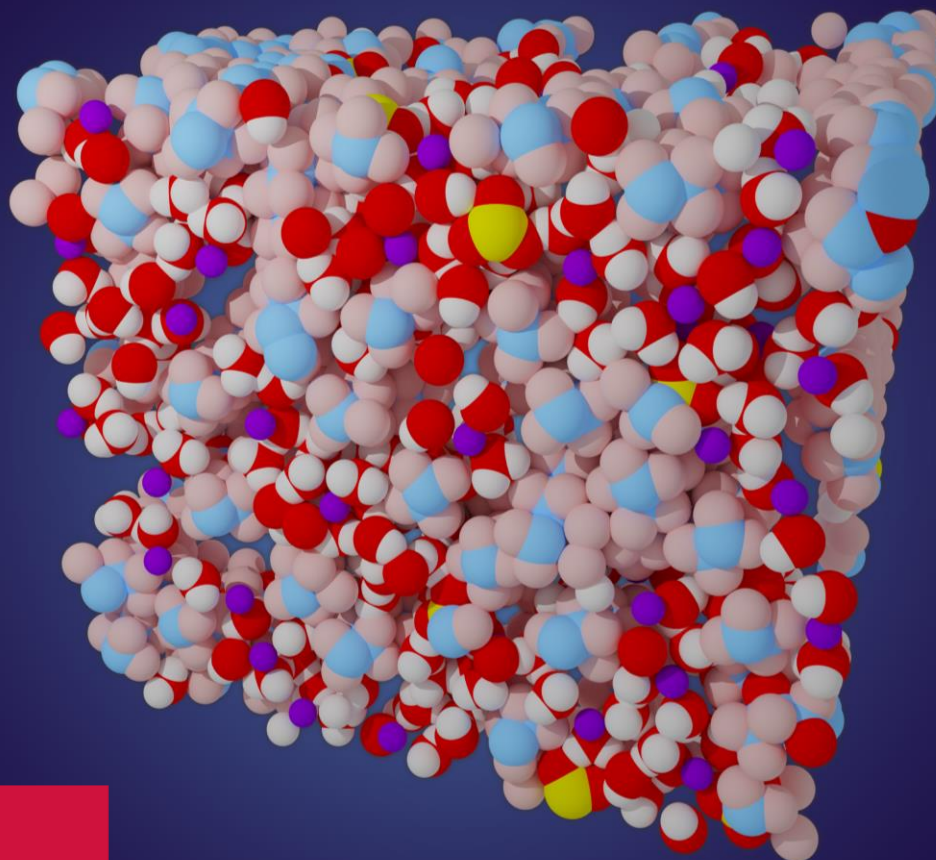
PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A

MATHEMATICAL, PHYSICAL AND ENGINEERING SCIENCES

Progress in mesoscale methods for fluid dynamics simulation

Theme issue compiled and edited by Giovanni Di Ilio, Daniele Chiappini,
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About this issue

This theme issue collects selected contributions from the 29th International Conference on the Discrete Simulation of Fluid Dynamics (DSFD 2020). Hosted by the University of Tuscia, Viterbo, Italy, DSFD 2020 took place as a virtual event on July 13-17, 2020. The topics covered by the present theme issue entail a large variety of complex fluid applications, ranging from fluid turbulence, thermal and reactive flows, electrokinetic flows, multiphase flows as well as fluid-structure and nanofluidic problems of biological relevance. In addition, the issue also contains a few papers dealing with methodological advances, notably in the area of multi-speed and multi-relaxation lattice Boltzmann models for multiphase flow applications.

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Cover image:

Atomic view of a hydrated Nafion membrane, forming the core of an ionic polymer metal composite. Credit: Agnieszka Truszkowska, Alain Boldini, and Maurizio Porfiri.

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