

Energy Colloquium

Perspectives of Exascale Computing for Novel Energy Technologies

Prof. Vladimir Stegailov

**Joint Institute for High Temperatures
of Russian Academy of Sciences**

27 September 2016, 16:00

Skolkovo Innovation Center

Technopark, Building 3, Room 402



ABSTRACT:

The development of novel energy technologies essentially relies upon multiscale modelling and simulation which success crucially depends on the progress in supercomputing. In this talk I review several vivid examples of the problems that we solve using atomistic and multiscale models and the best supercomputers in Russia: radiation damage of nuclear materials, rheology of liquids, properties of gas condensate and gas hydrates, polymer materials and laser beam machining. The wider context is presented as well with the corresponding examples from the US DOE INCITE and EU PRACE programs. On the basis of the case studies considered I discuss the issues of hardware efficiency and software scalability.

Non-Skoltech attendees should request access to the building in advance by sending their passport details to energy.colloquium@skoltech.ru

Colloquium schedule and information on how to get to the colloquium can be found at <http://www.skoltech.ru/en/energy-colloquium/>