

# Molecular dynamics simulation of carbon nanomaterials



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## Speaker introduction

Graduated from the Ufa State Aviation Technological University in 2010, received PhD and DSc degrees at the Institute for Metals Superplasticity Problems of Russian Academy of Sciences. From 2012 to 2014 was a research associate at Nanyang Technological University, Continued the career development at Institute for Metals Superplasticity Problems of Russian Academy of Sciences where is presently a Head of Laboratory. Since 2016 working as the professor of Bashkir State University (Ufa University of Science and technology). Since 2018 is the youngest Professor of Russian Academy of Sciences.

### Research interests:

- Search for new stable carbon nanostructures with complex architecture and unique properties;
- search for the links between structure peculiarities and physical and mechanical properties;
- properties improvement for carbon nanostructures through external treatment;
- study of graphene-metal composites, understanding their fabrication techniques and effect of heat and temperature treatment on their physical and mechanical properties.

## Seminar abstract

New carbon materials with improved mechanical, electrical, chemical, and optical properties are predicted and considered to be very promising for practical application. Carbon-based materials in the form of films, fabrics, aerogels or microstructural materials are known by their large surface areas and pore volumes, light weight, a great variety of structural morphology. Such unique structures can then be employed for a variety of purposes, for example, production of new electronic devices, energy storage, fabrication of new composite materials. Clear understanding of their properties via different simulation techniques is required nowadays. This lecture will address the modern state in the molecular dynamics simulation of fabrication, and property characterization for carbon-based materials.

