NJIT New Jersey Institute of Technology

Postdoc Position: DEM Modeling of Soot Aggregates

About the position: We are seeking applicants with expertise in Discrete Element Method (DEM) for a postdoctoral position. The initial appointment is for 1 year, with potential extension for up to two years. The start date is flexible, and can be as early as **January 2023**. The candidate will be working on a collaborative project led by Prof. Alexei Khalizov and Prof. Gennady Gor to develop a multiscale model for condensation-induced restructuring of atmospheric soot particles. In the project, a DEM model for soot restructuring driven by stresses from condensate will be developed, parameterized using molecular simulations and lab experiments, and then integrated with our condensation model into a unified condensation-evaporation-restructuring framework. Relevant information related to the project can be found in the following articles: https://doi.org/10.1021/acs.est.8b04201 and https://doi.org/10.1080/02786826.2020.1846677

Required Qualifications:
(1) Strong motivation to pursue interdisciplinary theoretical and computational research in close collaboration with experimentalists
(2) Ph.D. in chemical/mechanical/civil engineering, applied physics, materials science, etc.
(3) Hands-on experience with DEM simulations
(4) Track record of peer-reviewed publications
(5) Strong programming/data processing skills (Python, Matlab, etc.)

How to apply: Applications should include the following:
(1) Short cover letter
(2) Curriculum vitae, including contact information for three references
(3) Three selected publications
Applications should be sent by email to Prof. Alexei Khalizov khalizov@njit.edu with *Postdoc application* in the subject. Please send it as a single PDF file. Review will begin immediately.
Note: PhD students positions are also available, see http://porousmaterials.net/positions.html

About the Professors: Dr. Khalizov's group develops instrumentation and conducts experimental and modeling work to understand the interactions of atmospheric nanoparticles. He has published more than 70 journal articles. Prior to joining NJIT, he conducted research at Texas A&M University, University of Waterloo, and McGill University. He is the recipient of the NATO/NSERC Postdoctoral Fellowship (2000) and the NSF CAREER Award (2016). More information at https://centers.njit.edu/krg/ **Dr. Gor** and his group has been developing and applying theoretical and computational methods (Monte Carlo simulations, molecular dynamics, density functional theory, etc.) to solve a wide spectrum of engineering problems related to porous materials and solid-fluid interfaces. Dr. Gor's research has been published in more than 60 papers in peer-reviewed journals. Prior joining NJIT he worked at Rutgers University, Princeton University and Naval Research Laboratory. He is the recipient of the National Research Council Associateship (2014) and the NSF CAREER Award (2020). More information at http://porousmaterials.net/

About NJIT: one of the US leading public research universities, with 140 years of history, located in the vibrant University Heights district of downtown Newark, NJ, just 20 minutes from Manhattan, NY by train.