



Department of
Polymer Science
The University of Akron, OH
(330) 972-6288

adobrynin@uakron.edu

<http://faculty.ims.uconn.edu/~avd/>

Biography: Andrey V. Dobrynin is Alan N. Gent Ohio Research Scholar, Professor of Polymer Science at the Department of Polymer Science, University of Akron, Akron, OH. He received B.S. (1987) and Ph.D. (1991) degrees in Polymer Physics from the Moscow Institute of Physics and Technology, Moscow, Russia.

Before joining University of Akron in summer 2015, he was a faculty at the Institute of Materials Science, University of Connecticut (2001-2015), served as a Program Director of the Condensed Matter and Materials Theory Program, Division of Materials Research at the National Science Foundation (2013-2015).

Prof. Dobrynin is a Fellow of the American Physical Society and Member of the Connecticut Academy of Science and Engineering.

Research Interests:

His area of expertise is in development of computational and theoretical models of polyelectrolyte solutions and gels, charged polymers at surfaces and interfaces, electrostatic interactions in biological systems, wetting and adhesion, graphene based polymeric materials, nanocomposites, soft-matter physics and biophysics. The Dobrynin's Groups is also involved in development of computer models for 3D printing and advanced additive manufacturing, and with statistical data analysis and "big" data visualization. The knowledge gained from these studies impacts numerous areas of Polymer Science and Engineering.

Industrial Sector Focus:

Computational Polymer Science and Engineering
Computationally Driven Materials Design
Large Scale Molecular Simulations
"Big" Data Analysis and Visualization

Unique Laboratory Facilities:

GPU based Computer Cluster optimized for large scale simulations
Data Analysis and Visualization Center

Recent Publications/Patents:

1. Z. Cao, A. V. Dobrynin, "Nanoparticles as Adhesives for Soft Polymeric Materials", *Macromolecules*, **2016** (49) 3586-3592.
2. R. Mohammadi, A. P. Martinez, Y. Kutes, Z. Wang, A. V. Dobrynin, D. H. Adamson, "Grafting-Through: Growing Polymer Brushes by Supplying Monomers through the Surface", *Macromolecules*, **2016** (49) 2477-2483.
3. W. F. M. Daniel, J. Burdynska, M. Vatankhah-Varnoosfaderani, K. Matyjaszewski, J. Paturej, M. Rubinstein, A. V. Dobrynin, S. S. Sheiko, "Solvent-free, Super-soft and Super-elastic Bottlebrush Melts and Networks", *Nature Materials*, **2016** (15) 183-189.
4. Z. Cao, J.-M. Y. Carrillo, S. S. Sheiko, A. V. Dobrynin, "Computer Simulations of Bottle Brushes: From Melts to Soft Networks", *Macromolecules*, **2015** (48) 5006-5015.
5. Z. Cui, Z. Cao, R. Ma, A. V. Dobrynin, D. H. Adamson, "Boron Nitride Surface Activity as Route to Composite Dielectric Films", *ASC Appl. Mater. & Interfaces*, **2015** (7) 16913-16916.