

**Vera Bocharova**  
Chemical Sciences Division  
Oak Ridge National Laboratory or Institution  
1 Bethel Valley Rd., Oak Ridge, TN 37831

Research Staff Member  
E-mail: bocharovav@ornl.gov  
(865) 5766-490

**Education and Training:**

Dresden University of Technology, Germany	Ph.D.	2008	Chemistry
Orenburg State University, Russia	M.S.	2001	Physics
Orenburg State University, Russia	B.S.	1999	Mathematics

**Professional Experience:**

2014-present Research Staff Member, Chemical Sciences Division, Oak Ridge National Laboratory  
2012-2014 Wigner Fellow, Chemical Sciences Division, Oak Ridge National Laboratory  
2009-2013 Research Assistant Professor, Department of Chemistry and Biomolecular Science, Clarkson University, Potsdam, NY  
2008-2009 Postdoctoral Fellow, Leibniz-Institute of Polymer Research, Dresden, Germany  
2003-2008 Research Scientist, Leibniz-Institute of Polymer Research, Dresden, Germany

**Professional Activities, Honors, Awards:**

Wigner Fellow, Oak Ridge National Laboratory, 2012.  
Innovative prize from Leibniz-Institute of Polymer Research/Dresdner Bank, Germany, 2009  
Student Government Award ,Russia, 1999  
Reviewer: *IEEE Sensors Journal*; *Langmuir*, *Acta Biomaterialia*, *Biomaterials Sciences*

**Selected Peer-Reviewed Publications:** (total > 43 refereed journal papers and conference proceedings, 2 book chapters, 1 issued U.S. patents, > 775 citations) (Hirsch-index: 20)

Tai, T ; Karacsony, O; **Bocharova, V** ; Van Berkel, GJ; Kertesz, V Topographical and Chemical Imaging of a Phase Separated Polymer Using a Combined Atomic Force Microscopy/Infrared Spectroscopy/Mass Spectrometry Platform *Anal Chem* 2016, 88, 2864-2870

Voylov, D; Saito, T ; Lokitz, B ; Uhrig, D ; Wang, YY ; Agapov, A ; Holt, A ; **Bocharova, V** ; Kisliuk, A; Sokolov, AP Graphene Oxide as a Radical Initiator: Free Radical and Controlled Radical Polymerization of Sodium 4-Vinylbenzenesulfonate with Graphene Oxide *ACS Macro Lett*, **2016**, 5,199-202

Cheng, SW; Holt, AP; Wang, HQ ; Fan, F ; **Bocharova, V**; Martin, H; Etampawala, T ; White, BT (; Saito, T; Kang, NG; Dadmun; Mays, JW; Sokolov, AP Unexpected Molecular Weight Effect in Polymer Nanocomposites *Phys Rev Lett* **2016**,116, 038302

Cheng, SW; Mirigian, S; Carrillo, JMY; **Bocharova, V** ; Sumpter, BG ; Schweizer, KS; Sokolov, AP Revealing spatially heterogeneous relaxation in a model nanocomposite *J. Chem. Phys.* **2015** ,143, 194704

**V. Bocharova**, D. Sharp , A. Jones , S. Cheng , P. J. Griffin, A. L. Agapov , D. Voylov , Y. Wang , A. Kisliuk, A. Melman , A. P. Sokolov Enzyme Induced Formation of Monodisperse Hydrogel Nanoparticles Tunable in Size *Chem. Mater.*, 2015, 27 (7), pp 2557–2565.

O. S. Ovchinnikova, T. Tai , **V.Bocharova** , M. Okatan , A. Belianinov , V. Kertesz, S. Jesse, G. J. Van Berkel Co-registered Topographical, Band Excitation Nanomechanical, and Mass Spectral Imaging Using a Combined Atomic Force Microscopy/Mass Spectrometry Platform *ACS Nano*, **2015**, 9 (4), 4260–4269

**V. Bocharova** , A. L. Agapov , A. Tselev ,L. Collins , R. Kumar , S. Berdzinski ,V. Strehmel , A. Kisliuk, I. I. Kravchenko ,B. G. Sumpter , A. P. Sokolov ,S. V. Kalinin , E. Strelcov Controlled Nanopatterning of a Polymerized Ionic Liquid in a Strong Electric Field, *Adv. Func. Mater.*, **2015** 25, 2015, 805–811.

R. Kumar , **V. Bocharova** , E. Strelcov , A. Tselev , I. I. Kravchenko ,S. Berdzinski , V. Strehmel , O. S. Ovchinnikova , J. A. Minutolo,J. R. Sangoro , A. L. Agapov , A. P. Sokolov , S. V. Kalinin ,B. G. Sumpter , Ion transport and softening in a polymerized ionic liquid *Nanoscale Nanoscale*, **2015,7, 947-955**

A. Holt; P. Griffin, **V. Bocharova**, A. Agapov, A. Imel, M. Dadmun, J. Sangoro; A. Sokolov, Dynamics at the Polymer/Nanoparticle Interface in Poly(2-vinylpyridine)/Silica Nanocomposites, *Macromolecules* **47**, 1837-1843 (2014).

**V. Bocharova**, E. Katz Switchable electrode interfaces controlled by physical, chemical and biological signals. *The Chemical Record* **12**, 114-130 (2012)

V. Senkovskyy, T. Beryozkina, **V. Bocharova**, R. Tkachov, H. Komber, A. Lederer, M. Stamm, N. Severin, J. P. Rabe, Anton Kiriya. A Core-first preparation of Poly(3-alkylthiophene) stars. *Macromol. Symp.*, **291**, 17, (2010).

**V. Bocharova**, A. Kiriya, H. Vinzelberg, I. Moench, M. Stamm Polypyrrol Nanowires Grown from Single Adsorbed Polyelectrolyte Molecules. *Angew. Chem.***117**, 6549-6552, (2005)

**Collaborators from other Institutions** (past 48 months):

Alexander L. Agapov (W. L. Gore & Associates), Artem Melman (Clarkson University, NY), Stephen Dietz (TU Dresden, Germany), J. Halánek (SUNY Albany); Leonid Ionov (Leibnitz Institute of Polymer Research, Dresden, Germany); Evgeny Katz (Clarkson University); Anton Kiriya (Leibnitz Institute of Polymer Research, Dresden, Germany); Frederik C. Krebs (Risoe National Laboratory for Sustainable Energy / Technical University of Denmark); Hartmut Löwen (Institute of Theoretical Physics II, Duesseldorf, Germany), Sergiy Minko (Clarkson University); Marcus Pita (Catalysis and Petroleum-Chemistry Institute, Spain); Vladimir Privman (Clarkson University); Volodymyr Senkovskyy (Leibnitz Institute of Polymer Research, Dresden, Germany) Igor .Sokolov (Tufts University) Manfred Stamm (Leibnitz Institute of Polymer Research, Dresden, Germany), Ihor Tokarev (General Electrics), BrigitteVoit (Leibnitz Institute of Polymer Research, Dresden, Germany); Joseph Wang (University California San Diego (UCSD))

**Thesis Advisor and Postgraduate-Scholar Sponsor:**

Prof. M. Stamm, Dresden University (Ph.D. Advisor)

Prof E. Antipov Russian Academy of Science, Moscow (Postdoctoral advisor)