

1. NAME AND ACADEMIC RANK: DIMITER N. PETSEV, ASSISTANT PROFESSOR
2. DEGREES:
1987 MS, Chemical Physics, University of Sofia, Sofia, Bulgaria
1996 PhD, Physical Chemistry, University of Sofia, Sofia, Bulgaria
3. NUMBER OF YEARS SERVICE ON THIS FACULTY: 5 YEARS
2005 – present • Assistant Professor
4. OTHER RELATED EXPERIENCE – TEACHING, INDUSTRIAL, ETC.:
1996 – 1998 Postdoctoral Research Associate, Chemistry Department, Purdue University
1998 – 1999 Research Associate, Center for Materials Research, UAH
1999 – 2003 Senior Research Associate, Center for Materials Research, UAH
2003 – 2005 Research Assistant Professor, Department of Chemical and Nuclear Engineering, UNM
5. CONSULTING AND PATENTS:
3 US Patent Applications
6. PRINCIPAL PUBLICATIONS IN LAST FIVE YEARS:
 - I. M. E. Piyasena, G. P. Lopez and D. N. Petsev, An Electrokinetic Cell Model for Analysis and Optimization of Electroosmotic Microfluidic Pumps, *Sensors and Actuators B*, 113 (2006) 461.
 - II. D. N. Petsev and G. P. Lopez, Electrostatic Potential and Electroosmotic Flow in a Cylindrical Capillary Filled with Symmetric Electrolyte: Analytic Solutions in Thin Double Layer Approximation, *J. Colloid Interface Sci.*, 294 (2006) p. 492.
 - III. S. T. Chang, V. N. Paunov, D. N. Petsev and O. D. Velev, "Self-Propelling Microdevices and Microfluidic Pumps Based on Remotely Powered Miniature Semiconductor Diodes, *Nature Materials*, 6 (2007) p. 235.
 - IV. Z. Yuan, D. N. Petsev, B. G. Prevo, O. D. Velev and P. Atanassov, Two-Dimensional Nanoparticle Arrays Derived from Ferritin Monolayers, *Langmuir*, 23 (2007) p. 5498.
 - V. S. T. Chang, E. M. Beaumont, D. N. Petsev and O. D. Velev, Remotely Powered Distributed Microfluidic Pumps and Mixers Based on Miniature Diodes, *Lab-on-a-Chip*, 8 (2008) p. 117.
 - VI. Y.-J. Oh, T. C. Gamble, A. Garcia, D. Leonhardt, C.-H. Chung, S. R. J. Brueck, C. F. Ivory, G. P. Lopez, D. N. Petsev, and Sang M. Han, FET Flow Control and Wall Adsorption of Charged Molecules in Nanofluidic Channels Integrated into a Multiple Internal Reflection Infrared Waveguide, *Lab-on-a-Chip*, 8 (2008) p. 251.
 - VII. N. J. Carroll, S. B. Rathod, E. Derbins, S. Mendez, D. A. Weitz and D. N. Petsev, Droplet Based Microfluidics for Emulsion and Solvent Evaporation Synthesis of Monodisperse Mesoporous Silica Microspheres, *Langmuir*, 28 (2008) p. 658.
 - VIII. Y. Zhang, T. C. Gamble, A. Neumann, G. P. Lopez, S. R. J. Brueck and D. N. Petsev, Potential Distribution and Current Transport in Si/SiO₂ Fluidic Channels, *Lab-on-a-Chip*, 8 (2008) p. 1671.
 - IX. Y.-Jin Oh, A. L. Garcia, D. N. Petsev, S. R. J. Brueck, C. F. Ivory, and S. M. Han, Effect of Wall-Molecule Interactions on Electrokinetic Transport of Charged Molecules in Nanofluidic Channels during FET Flow Control, *Lab-on-a-Chip*, 8 (2008) p. 251.

- X. N. J. Carroll, S. Pylypenko, P. B. Atanassov and D. N. Petsev, Bidisperse Nano-Porous Microparticles Derived by Microemulsion Templating, *Langmuir*, 25 (2009) p. 13540.
- XI. S. Mendez, E. M. Fenton, G. R. Gallegos, D. N. Petsev, S. S. Sibbett, H. A. Stone, Y. Zhang, and G. P. López, Imbibition in Porous Membranes of Complex Shape: Quasi-stationary Flow in Thin Rectangular Segments, *Langmuir*, accepted.
- XII. Z. Yuan, A. Garcia, G. P. Lopez and D. N. Petsev, Electrokinetic Transport and Separations in Fluidic Nanochannels, *Electrophoresis*, 28 (2007) p. 595.
- XIII. O. D. Velev, S. Gangwal and D. N. Petsev, Particle-Localized AC and DC Manipulation and Electrokinetics, *Annual Reports C*, 105 (2009) p. 213.
- XIV. N. J. Carroll, S. Mendez J. Edwards, D. A. Weitz and D. N. Petsev, Transport control and manipulation of fluids in micro and nanofluidic channels, in “Structure and Functional Properties in Colloidal Systems”, R. Hidalgo-Alvarez, Editor (Taylor & Francis, 2009).
- XV. D. N. Petsev and O. D. Velev, Transport Control of Fluid and Solutes in Microchannels Using AC Field and Semiconductor Diodes, in “Continuum Mechanics”, F. Columbus, Editor (Nova Publishers, 2009).
- XVI. D. N. Petsev, Transport in Fluidic Nanochannels, in “Nanoscience: Colloidal and Interfacial Systems”, V. M. Starov, Editor, (Taylor & Francis, 2010).
7. SCIENTIFIC AND PROFESSIONAL SOCIETIES:
American Chemical Society
American Electrophoresis Society
8. HONORS AND AWARDS:
NSF/CAREER Transport Control in Micro and Nanochannels
9. INSTITUTIONAL AND PROFESSIONAL SERVICE IN THE LAST FIVE YEARS:
Session Organizer and Session Chair at the 82 ACS Colloid and Surface Symposium
Guest editor for the AIP journal *Biomicrofluidics* (with Dr. Patrick Doyle, MIT)
Advisory Board: *Sensors and Transducers Journal*
Advisory Board: *The Open Journal of Physical Chemistry*
Served as a reviewer for journals:
Langmuir (ACS Publications)
Analytical Chemistry (ACS Publications)
Journal of Colloid and Interface Science (Elsevier)
Advances of Colloid and Interface Science (Elsevier)
Electrophoresis (Wiley)
ACS Nano (ACS Publications)
Served as reviewer for funding agencies:
The National Science Foundation
Review panel: NSF/CBET MRI and NSF/CBET Separation Programs
10. PERCENTAGE OF TIME AVAILABLE FOR RESEARCH OR SCHOLARLY ACTIVITIES: 75%
11. PERCENTAGE OF TIME COMMITTED TO THE PROGRAM: 100%