

Prof. WITOLD BROSTOW - Curriculum vitae

RESEARCH: energy generation from temperature differences & solid state cooling; molecular dynamics computer simulations of materials; effects of irradiation or magnetic fields on structures and properties of polymer-based composites; sustainable materials; liquid crystals; drag reduction and flocculation; instruction in Materials Science & Engineering.

BOOKS, PUBLICATIONS and PATENTS: *Science of Materials* in 2 American, 1 Spanish and 2 German editions. 390 refereed research papers; 5 patents. Editor of: *Failure of Plastics* (with Roger D. Corneliusen, 1992); *Mechanical Properties of Polymer Liquid Crystals* (1998) and *Performance of Plastics* (2000).

GRADUATE DEGREES: MS (in Chemistry) and DrSc (in Physics), University of Warsaw; DSc (in Chemistry), Polish Academy of Sciences, Warsaw.

CURRENT EMPLOYMENT: University of North Texas, Regents Prof. of Materials Science and Engineering & Professor of Physics 2000-

WORLDWIDE FUNCTIONS, HONORS and DISTINCTIONS:

- * Visiting Professor of Polymer Science, The Royal Institute of Technology, Stockholm - summers in 2008, 2011, 2013, 2015 planned
- * President of the International Council on Materials Education – reelected until December 2016
- * Member of the Academy of Petroleum and Natural Gas, Kyiv - elected June 2009
- * Honorary Member of the Society of Plastics and Rubber Engineers, Zagreb – elected March 27, 2007
- * Paul J. Flory Polymer Research Award (with Koichi Hatada), April 21, 2006, Nara, Japan
- * Doctor of Science honoris causa, University of Lucknow - awarded February 6, 2006
- * Visiting Professor of Physics, University of Rouen, Spring or Summer in 2003, 2004, 2005, 2012 & 2013
- * Fellow of the International Union of Pure & Applied Chemistry - elected April 2004
- * Honorary Member of the Chemical Society of Georgia, Tbilisi - elected April 2003
- * Member of the European Academy of Sciences - elected October 2002
- * Keynote Speaker at the 62nd Annual Technical Conference of the Society of Plastics Engineers (ANTEC-SPE), San Francisco, May 2002
- * Visiting Professor of Polymer Science & Engineering, the Royal Chulalongkorn University, Bangkok, 2004
- * Scientific Committee of the POLYCHAR World Forum on Advanced Materials (51 countries represented), President 2000-
- * Doctor honoris causa in Chemistry, Lvivska Politechnika National University, Lviv, September 14, 1999 (the University founded in 1844; first ever Dr. h.c. degree awarded in 1912 to Maria Skłodowska-Curie)
- * U.S. Navy Distinguished Visiting Professor, Naval Surface Warfare Center, Summer 1988
- * Fred A. Schwab International Award of the Society of Plastics Engineers, 1997
- * Corresponding Member, Union for Polymer Research, Berlin - elected 1994
- * Fellow of the Royal Society of Chemistry, London
- * Full Member of the National Academy of Sciences, Mexico City.

WORLDWIDE INTERNATIONAL COOPERATIONS with

- * Royal Institute of Technology in Stockholm
- * Ivane Javahishvili University, Tbilisi
- * King Mongkut University in Bangkok
- * Technion in Haifa
- * Federal University of Rio Grande do Norte in Natal
- * University of Naples
- * University of Rouen

RESEARCH PHILOSOPHY:

Giving ambitious tasks to undergraduates doing research increases the number of American students who decide to go to a graduate school. Those that do so have a much easier start. Postdocs, visiting researchers and graduate students have support in their work from enthusiastic undergraduates.

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PUBLICATIONS FROM COOPERATION WITH GEORGIAN COLLEAGUES:

1. O. Mukbaniani, G. Titvinidze, T. Tatrishvili, N. Mukbaniani, W. Brostow & D. Pietkiewicz, Formation of polymethylsiloxanes with alkyl side groups, *J. Appl. Polymer Sci.* 2007, 104, 1176.
2. W. Brostow & T. Datashvili, Miscibility and thermal properties of blends of melamine-formaldehyde resin with low density polyethylene, *Mater. Res. Innovat.* 2007, 11, 127.
3. W. Brostow, T. Datashvili & B. Huang, Tribological properties of blends of melamine-formaldehyde resin with low density polyethylene, *Polymer Eng. & Sci.* 2008, 48, 292.
4. W. Brostow, W. Chonkaew, T. Datashvili & K.P. Menard, Tribological properties of epoxy + silica hybrid materials, *J. Nanosci. & Nanotech.* 2008, 8, 1916.
5. W. Brostow & T. Datashvili, Chemical modification and characterization of Boehmite particles, *Chem. & Chem. Tech.* 2008, 2, 27.
6. W. Brostow, T. Datashvili & K.P. Hackenberg, Synthesis and characterization of poly(methyl acrylate) + SiO₂ hybrids, *e-Polymers* 2008, no. 054.
7. W. Brostow, T. Datashvili, B. Huang & J. Too, Tensile properties of LDPE + Boehmite composites, *Polymer Compos.* 2009, 30, 760.
8. W. Brostow, T. Datashvili, G.W. Ver Strate & D.J. Lohse, Ethylene-propylene-diene monomer elastomers, in *Polymer Data Handbook*, ed. J.E. Mark, pp. 155 -162, Oxford University Press 2009.
9. A.-A. A. Abdel-Azim, A.M. Abdul-Raheim, A.M. Atta, W. Brostow & T. Datashvili, Swelling and network parameters of crosslinked porous octadecyl acrylate copolymers as oil spill sorbers, *e-Polymers* 2009, no. 134.
10. E.A. Bobadilla-Sanchez, G. Martinez-Barrera, W. Brostow & T. Datashvili, Effects of polyester fibers and gamma irradiation on mechanical properties of polymer concrete containing CaCO₃ and silica sand, *Express Polymer Letters* 2009, 3, 615.
11. W. Brostow, T. Datashvili, D. Kao & J. Too, Tribological properties of LDPE + Boehmite composites, *Polymer Compos.* 2010, 31, 417.
12. W. Brostow, M. Gahutishvili, R. Gigauri, H.E. Hagg Lobland, S. Japaridze & N. Lekishvili, Separation of natural trivalent oxides of arsenic and antimony, *Chem. Eng. J.* 2010, 159, 24.

13. G. Areshidze, K. Barbakadze, W. Brostow, T. Datashvili, O. Gencel, E. Lekveishvili & N. Lekishvili, Separation of polycyclic hydrocarbons from Georgian petroleum, *Mater. Sci. Medziagotyra* 2010, 16, 170.
14. W. Brostow, T. Datashvili & K.P. Hackenberg, Effect of different types of peroxides on properties of vulcanized EPDM + PP blends, *Polymer Composites* 2010, 31, 1678.
15. P. Blaszczyk, W. Brostow, T. Datashvili & H.E. Hagg Lobland, Rheology of low-density polyethylene + Boehmite composites, *Polymer Composites* 2010, 31, 1909; 4spepro.org/view.php?source=003493-2011-01-11
16. W. Brostow, T. Datashvili & H. Miller, Wood and wood derived materials, *J. Mater. Ed.* 2010, 32, 125.
17. W. Brostow, T. Datashvili, R. McCarty & J.B. White, Copper viscoelasticity manifested in scratch recovery, *Mater. Chem. & Phys.* 2010, 124, 371.
18. W. Brostow, T. Datashvili, J. Geodakyan & J. Lou, Thermal & mechanical properties of EPDM/PP + thermal shock-resistant ceramic composites, *J. Mater. Sci.* 2011, 46, 2445.
19. O. Gencel, W. Brostow, T. Datashvili & M. Thedford, Workability and mechanical performance of steel fibers reinforced self compacting concrete with fly ash, *Composite Interfaces* 2011, 18, 169.
20. W. Brostow, M. Brozynski, T. Datashvili & O. Olea-Mejia, Strong thermoplastic elastomers created using nickel nanopowder, *Polymer Bull.* 2011, 59, 1671.
21. W. Brostow, G. Broza, T. Datashvili, H.E. Hagg Lobland & A. Kopyniecka, Poly(butyl terephthalate)/oxytetramethylene + oxidized carbon nanotubes hybrids: Mechanical and tribological behavior, *J. Mater. Res.* 2012, 27, 1815.
22. W. Brostow, T. Datashvili & J. Geodakyan, Tribological properties of EPDM + PP + thermal shock-resistant ceramic composites, *Polymer Internat.* 2012, 61, 1362.
23. R. Adhikari, W. Brostow, T. Datashvili, S. Henning, B. Menard, K.P. Menard & G.H. Michler, Effect of surfactant treated Boehmite nanoparticles on properties of block copolymers, *Mater. Res. Innovat.* 2012, 16, 19.
24. W. Brostow, T. Datashvili, H.E. Hagg Lobland, T. Hilbig, L. Su, C. Vinado & J.B. White, Bismuth telluride-based thermoelectric materials: Coatings as protection against thermal cycling effects, *J. Mater. Res.* 2012, 27, 2930.
25. A. M. Atta, W. Brostow, T. Datashvili, R.A. El-Ghazawy, H.E. Hagg Lobland, A.-R.M. Hasan & J. M. Perez, Porous polyurethane foams based on recycled poly(ethylene terephthalate) for oil sorption, *Polymer Internat.* 2013, 62, 116.
26. V.H. Orozco, A.F. Vargas, W. Brostow, T. Datashvili, B.L. López, K. Mei & L. Su, Tribological properties of polypropylene composites with carbon nanotubes and sepiolite, *J. Nanosci. & Nanotech.* 2014, 14, 4918.
27. R. Shah, T. Datashvili, T. Cai, J. Wahrmund, B. Menard, K.P. Menard, W. Brostow & J. Perez, The effects of functionalized reduced graphene oxide on the frictional and wear properties of epoxy resin, *Mater. Res. Innovat.* 2015, 19, 97.
28. K. Barbakadze, W. Brostow, N. Hnatchuk, Z. Hoyt & N. Lekishvili, Tribology of novel antibiocoatings, *Mater. Res. Innovat.* 2015, 19, 227.
29. W. Brostow, S. Brumbley, M. Gahutishvili, N. Hnatchuk, V. Singh & A.W. Wren, Structure and antibacterial properties of AgNO₃ and As₂O₃ doped polymer composites, in preparation for submission to *J. Appl. Polymer Sci.*
30. W. Brostow, S. Brumbley, M. Gahutishvili, N. Hnatchuk, S. Pokharel, J. Youngblood & V. Singh, Tribological properties of antibacterial polymer composites, in preparation for *Wear*.