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EDUCATION/TRAINING

Doctor of. Sc. Physics and Mathematics, Academy of Sciences of USSR (1992).
PhD (Cand. of Sc.) Physics, Dept. of Physics, Kiev State University (1985).
MS Physics, Dept. of Physics, Kiev State University (1976).

PROFESSIONAL EXPERIENCE:

1995-present *Senior Research Staff Member, Research Staff Member, Postdoctoral associate, Neutron Scattering Sciences Division, ORNL*
1993-1995 *Visiting Researcher, Max Planck Institute for Polymer Research, Germany*
1985-1993 *Senior Research Scientist, Research Scientist, Inst. for Macromolecular Chemistry, Ukrainian Academy of Science, Kiev, Ukraine*
1976-1985 *Research Scientist, PhD Student, Kiev State University, Ukraine*

EXPERTISE AND INTERESTS

Small-Angle Neutron Scattering and Quasi Elastic Neutron Scattering investigations of structure and dynamics of confined fluids under pressure. SANS studies of thermodynamic, and dynamic properties of polymer blends, solutions and supercritical mixtures at ambient and elevated pressures.

MEMBERSHIPS AND PROFESSIONAL SERVICES:

Member, American Physical Society, Member, Neutron Scattering Society of America, Member, European Physical Society (1993-1998), Chair and Organizer: International Workshop "Structure and dynamics of confined and interfacial fluids: blending neutron scattering and computer modeling techniques", ORNL, 2014; Co-Organizer: International Conference on Small Science (ICSS)-2012, Orlando, 2012; Co-Organizer and session Chair: Goldschmidt 2010 Conference, Knoxville, TN; Co-Organizer: The First Workshop of the International Consortium on Ultra-Small Angle Neutron Scattering (IconUSAS), Oak Ridge, 2003; Co-Organizer: Bi-annual International Conference on Physics of Liquid Matter: Modern Problems (PLMMP), 2003 – 2009, Kiev, Ukraine; Co-Organizer and session Chair: SERMACS-99 Symposium on "Solution Thermodynamics of Polymers", 1999. Reviewer: Phys. Rev. Lett., Macromolecules, J. Chem Phys., J. Phys. Chem., J Polym. Sci., Langmuir et al.

HONORS AND AWARDS:

- Recipient of the Society of Organic Petrology award for the best refereed paper for coal and hydrocarbon source rock geochemistry (the Dal Swaine Award, 2013).
- Fellow, American Physical Society (2005), for “Significant contribution to the fundamental science underlying universal aspects of macromolecules in polymer solutions, supercritical mixtures and polymer blends”.
- Fellow, Humboldt Foundation, (Germany, 1993).
- Receptient of the ORNL Significant Achievement Award (2006), for "Design and installation of the two new small-angle neutron scattering instruments at HFIR".
- Max Planck Society Award, (1994), Germany.

SELECTED PUBLICATIONS (from over 160 peer reviewed journal articles with h-index 27):

- ✓ Y. B. Melnichenko, Small-angle scattering from confined and interfacial fluids: Applications to energy storage and environmental science, Springer, 2015.
- ✓ Y. B. Melnichenko and G. D. Wignall, Small-angle neutron scattering in materials science: Recent practical applications, J. Appl. Phys. Reviews 102, 021101 (2007).
- ✓ G. D. Wignall and Y. B. Melnichenko, Recent applications of small-angle scattering in strongly interacting soft matter, Rep. Progr. Phys. 68, 1761 (2005).
- ✓ M. M. Crawford, R. J. Smalley, G. Cohen, B. Hogan, B. Wood, S. K. Kumar, Y. B. Melnichenko, L. He, W. Guise and B. Hammouda, Chain conformation in polymer nanocomposites with uniformly dispersed nanoparticles, Phys. Rev. Lett, 110, 196001 (2013).
- ✓ L. He, G. Cheng, and Y. B. Melnichenko*, Partial Collapse and Reswelling of a Polymer in the Critical Demixing Region of Good Solvents, Phys. Rev. Lett. 109, 067801 (2012).
- ✓ G. Cheng, W.W. Graessley and Y. B. Melnichenko*, Polymer solutions in good solvents: Crossover from semidilute to concentrated solutions, Phys. Rev. Lett. 102, 157801 (2009).
- ✓ Y. B. Melnichenko, M. A. Anisimov, A. Povodyrev, G. D. Wignall, J. S. Sengers and W. A. Van Hook, Sharp Crossover of the Susceptibility in Polymer Solutions, Phys. Rev. Lett., 79, 5266 (1997).
- ✓ Y. B. Melnichenko and G. D. Wignall, Dimensions of Polymer Chains in Critical Semidilute Solutions, Phys. Rev. Lett., 78, 686 (1997).
- ✓ J. Schueller, Y. B. Melnichenko*, R. Richert, and E. W. Fischer, Dielectric Studies of Glass Transition in Pores, Phys. Rev. Lett., 73, 2224 (1994).
- ✓ Y. B. Melnichenko, N. V. Lavrik, E. Popov, J. Bahadur, L. He, I. I. Kravchenko, G. Smith, V. Pipich, and N. K. Szekely, Cavitation on deterministically nanostructured surfaces in contact with an aqueous phase: A small-angle neutron scattering study, Langmuir 30, 9985 – 9990 (2014).