Emilian L. Popov
Senior Research and Development Staff member
Reactor and Nuclear System Division
Oak Ridge National Laboratory, Oak Ridge, TN

Education
Sofia Technical University, Nuclear Engineering, Ph.D., 1998
Moscow Power Engineering University, Nuclear Engineering, M.S., 1988

Research and Professional Interests
Experienced and reliable R&D engineer and analyst with broad knowledge of fluid dynamics, heat transfer and safety of nuclear installations with an excellent record of customer satisfaction and successful project completion. Skilled in scientific/engineering code development and validation. Adept in working independently or as part of a professional project team.

- In-depth understanding of thermal and fluid processes including single and multi-phase flows, turbulence, convective and radiative heat transfer, boiling, critical heat flux and condensation
- Vast expertise in applied CFD and system TH software for multi-disciplinary engineering analyses with application to nuclear reactors and systems.
- Extensive knowledge of nuclear safety, operational and design issues. Wide ranging understanding of current nuclear safety trends.
- Outstanding skills in modeling methods, algorithms, proficiency in engineering software
- Excellent presentation, communication and interpersonal skills, including the ability to operate effectively across organizational boundaries, establish and maintain effective partnerships and working relations
- High verbal and written command of English. Knowledge of other official languages

Synergetic Activities

1. Member of professional societies
2. Reviewer of NEUP and technical journal publications
3. Participant in multi-disciplinary teams of experts
4. Active member of ORNL CFD community of practice

Collaborators

Prashant Jain	Mark-Olivier Delchini
W David Pointer	Lilin He
David Renfro	Elvis Dominguez-Ontiveros

Relevant Publications

1. Yuri 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 (ACS Journal of Surfaces and Colloids) July 2014.
2. Emilian L. Popov, Prashant K. Jain, Abhijit S. Joshi, A Lattice Boltzmann Method Based Thermal-Hydraulics Simulation Tool for Analyses of Nuclear Reactor Transients – PRATHAM, ANS Winter Meeting, November, 2013, Washington DC.
3. Wang, D., Gauld, I.C., Yoder, G.L., Ott, L.J., Flanagan, G.F., Francis, M.W., Popov, E.L., Carbajo, J.J., Jain, P.K., Wagner, J.C., Gehin, J.C. Study of fukushima daiichi nuclear power station unit 4 spent-fuel pool, Nuclear Technology volume 180, issue 2, year 2012, pp. 205 – 215
4. Galloway, J., H. Hernandez, G. I. Maldonado, M. Jessee, E. Popov, and K. Clarno, "ORNL, BWR Modeling Capability and Scale/Triton Lattice-to-Core Integration of the Nestle Nodal Simulator," <u>PHYSOR 201</u>, May 9-14, 2010, Pittsburgh, Pennsylvania, USA.
5. Popov and Yoder., "IRIS Pressurizer Fluid Dynamics and Heat Transfer Analyses," *Nuclear Engineering and Design*, **238,** 81–89, 2008.