Yuriy V. Pershin

Department of Physics and Astronomy and USC Nanocenter
University of South Carolina, 712 Main Street, Columbia, SC 29208, USA
Tel.: +1 (803) 777-5073 E-mail: pershin@physics.sc.edu

(a) Professional Preparation

Kharkov State University, Ukraine	Theoretical Physics	M. S. with distinction, 1996
University of Konstanz, Germany	Physics	Ph. D. 2002
Clarkson University	Condensed matter theory	Postdoc 2002-2004
Michigan State University	Condensed matter theory	Postdoc 2004-2006
University of California, San Diego	Condensed matter theory	Postdoc 2006-2008

(b) Appointments

University of South Carolina, Department of Physics and Astronomy,	
Associate Professor	2014-present
Assistant Professor	2008-2014
University of California, San Diego, Assistant Project Scientist	2008
University of California, San Diego, Postodoctoral Researcher	2006-2008
Michigan State University, Postodoctoral Researcher	2004-2006
Clarkson University, Postodoctoral Researcher	2002-2004

(c) Products: ~120 peer-reviewed publications. Citations > 8600, *h* =36 (from Google Scholar Citations)

(i) up to 5 publications most closely related to the proposed project:

Circuit elements with memory: memristors, memcapacitors and meminductors,
M. Di Ventra, Y. V. Pershin and L. Chua, Proceedings of the IEEE **97**, 1717 (2009)

Experimental demonstration of associative memory with memristive neural networks,
Y. V. Pershin and M. Di Ventra, Neural Networks **23**, 881 (2010)

Qubit-Based Memcapacitors and Meminductors
S. N. Shevchenko, Y. V. Pershin and F. Nori, Phys. Rev. Applied **6**, 014006 (2016)

The parallel approach
M. Di Ventra and Y. V. Pershin, Nature Physics **9**, 200 (2013)

Kinks and antikinks of buckled graphene: A testing ground for ϕ^4 field model,
R. D. Yamaletdinov, V. A. Slipko and Y. V. Pershin, Phys. Rev. B **96**, 094306 (2017)

(ii) up to 5 other significant publications, whether or not related to the proposed project:

Intermittency, quasiperiodicity and chaos in probe-induced ferroelectric domain switching
A. V. Ievlev, S. Jesse, A. N. Morozovska, E. Strelcov, E. A. Eliseev, Y. V. Pershin, A. Kumar, V. Ya. Shur and S. V. Kalinin, Nature Physics **10**, 59 (2014)

Spin polarization control by electric stirring: Proposal for a spintronic device,
Y. V. Pershin, N. A. Sinitsyn, A. Kogan, A. Saxena, and D. L. Smith,
Appl. Phys. Lett. **95**, 022114 (2009)

Switching Synchronization in One-Dimensional Memristive Networks
V. A. Slipko, M. Shumovskyi, Y. V. Pershin, Phys. Rev. E **92**, 052917 (2015)

Finding Stable Graphene Conformations from Pull and Release Experiments with Molecular Dynamics, R. D. Yamaletdinov and Y. V. Pershin, Scientific Reports **7**, 42356 (2017)

Just add memory,
Di Ventra and Y. V. Pershin, Scientific American **312**, 57 (2013)

(d) Synergistic activities

- Action Editor, Neural Networks (Elsevier)
- Reviewer for Physical Review Letters, Physical Review B, IEEE Transactions on Nanotechnology, IEE Proc. Circuits, Devices & Systems, Physica E, etc.
- Reviewer of NSF and DOE proposals
- Scientific committee member, E-MRS 2014 Symposium S: Memristor Materials, Mechanisms & Devices For Unconventional Computing, Lille, France
- Organizer of 2011 APS March Meeting focus session. Co-organizer of the 2004 IEEE NTC Quantum Device Technology Workshop in Potsdam, NY

(e) Honors and awards

- Fellow, Institute of Physics, 2014
- Breakthrough Award, USC, 2014
- IEEE Senior Member, 2013
- Invent Event Honorable Mention and Prize, Invent Event, USC, 2013
- Distinguished Doctor of Sciences, V. N. Karazin Kharkiv National University, 2013