

Andrei Rykhlevskii

CONTACT INFORMATION	Graduate Research Assistant <i>University of Illinois, Urbana-Champaign</i> <i>Nuclear, Plasma, and Radiological Engineering</i>	mobile: (217) 305-2385 e-mail: andrewryh@gmail.com
RESEARCH INTERESTS	Molten Salt Reactors physics, neutron transport, Monte Carlo, multiphysics simulation of advanced reactors, online reprocessing simulation, validation and verification, high performance computing	
PHD	University of Illinois at Urbana-Champaign, NUCLEAR ENGINEERING Aug 2016 – Present <ul style="list-style-type: none">• Tool for neutronics simulation of load-following Molten Salt Reactor• Advisor: Professor Kathryn D. Huff	
MSc	University of Illinois at Urbana-Champaign, NUCLEAR ENGINEERING Aug 2016 – May 2018 <ul style="list-style-type: none">• Advanced online fuel reprocessing simulation for thorium-fueled Molten Salt Breeder Reactor• Advisor: Professor Kathryn D. Huff	
MSc	Financial University - Moscow, Russia, FINANCIAL MANAGEMENT Oct 2011 – Mar 2014 <ul style="list-style-type: none">• Using stock market tools for IT-industry investments• Advisor: Professor Svetlana Grishkina	
BSc	Bauman Moscow State Technical University, NUCLEAR ENGINEERING Sep 2004 – Jun 2010 <ul style="list-style-type: none">• Calculating structural materials activation for VVER-1200 decommissioning	
RESEARCH EXPERIENCE	University of Illinois at Urbana-Champaign, Urbana, IL <i>Graduate Research Assistant, Advanced Reactors and Fuel Cycles Group Aug 2016 – Present</i> <ul style="list-style-type: none">• Neutronic calculations for Molten Salt Reactors using Monte-Carlo code Serpent.• Molten Salt Reactors online reprocessing simulation.• Creating model of MSBR for multiphysics environment MOOSE.• Nuclear Data libraries generation using Serpent and SCALE. Oak Ridge Natinal Laboratory, Oak Ridge, TN <i>Reactor Physics Intern May 2018 – Aug 2018</i> <ul style="list-style-type: none">• Reactor Physics modeling of various Fast Spectrum Molten Salt Reactors.• Online separation and feeds implementation.• Fuel Cycle Performance analysis in comparison with Sodium-cooled Fast Reactors. JSC OKB GIDROPRESS (State Atomic Energy Corporation “ROSATOM”), Russia <i>Lead Engineer Dec 2015 – Jul 2016</i> Extending Nuclear Power Plants (NPP) lifecycle technology. BUKO Ltd, Podolsk, Russia Sep 2014 – Dec 2015 <i>Financial analyst</i> Developed and applied trading robots (C#, VB) for NYSE, LSE, CME, CBOT, GLOBEX and ICE. Svyaz Standart Ltd, Podolsk, Russia Feb 2012 – Aug 2014 <i>Chief Technology Officer</i> Designed and managed Internet Service Provider (ISP) metro networks. JSC OKB GIDROPRESS (State Atomic Energy Corporation “ROSATOM”), Russia <i>Nuclear Engineer Nov 2009 – Feb 2012</i> <ul style="list-style-type: none">• Performed neutronics calculations for expending operation period of Balakovo and Kola NPPs.• Wrote the chapter about decommissioning for the Preliminary Safety Analysis Report (PSAR) of Belene NPP, Bulgaria.• Performed numerous verifying computations for final state certification of KATRIN-2.0 code.• Created a Matlab script for processing neutron flux data collected from NPPs.	

HONORS AND AWARDS	American Nuclear Society, John and Muriel Landis Scholarship		2017–2019
	Podolsk city council award for development of innovative entrepreneurship in Podolsk		2014
	Graduated FU with high distinction (highest graduation honor)		2014
	Graduate scholarship for excellent students, FU		2013
	Research achievement award, OKB GIDROPRESS		2011
	Academic scholarship for distinguished student, BMSTU		2008–2010
JOURNAL PUBLICATIONS	[1] Rykhlevskii, A. , Bae, J.W., Huff, K. “Modeling And Simulation of Online Reprocessing in the Molten Salt Breeder Reactor.”, Annals of Nuclear Energy , https://doi.org/10.1016/j.anucene.2019.01.030 , Jun. 2019.		
	[2] Lindsay, A., Ridley, G., Rykhlevskii, A. , Huff, K. “Introduction to Moltres: an Application for Simulation of Molten Salt Reactors”, <i>Annals of Nuclear Energy</i> , vol. 114, Pages 530 - 540, 2018. doi.org/10.1016/j.anucene.2017.12.025 , Apr. 2018.		
REFEREED CONFERENCE PROCEEDINGS	[3] Rykhlevskii, A. , Lindsay, A., Huff, K. “Full-Core Analysis of Thorium-Fueled Molten Salt Breeder Reactor using the SERPENT 2 Monte Carlo code” Transactions of the American Nuclear Society Winter Conference . Washington, DC, United States, 2017.		
	[4] Rykhlevskii, A. , Lindsay, A., Huff, K. “Online Reprocessing Simulation for Thorium-Fueled Molten Salt Breeder Reactor,” Transactions of the American Nuclear Society Winter Conference . Washington, DC, United States, 2017.		
	[5] Rykhlevskii, A. , Tsofin, V. “Comparing fast neutron transfer calculations within code package KATRIN-2.0 across various options for describing the core of VVER-440” Scientific and technical conference of young specialists . Podolsk, Russia. March, 2011.		
REFEREED CONFERENCE ABSTRACTS	[6] Rykhlevskii, A. , Betzler, B.R., Bae, J.W., Huff, K. “Fuel Cycle Performance of Fast Spectrum Molten Salt Reactor Designs” (poster) Oak Ridge National Laboratory Nuclear Engineering Science Laboratory Synthesis Poster Session . Oak Ridge, TN, United States, 2018.		
	[7] Rykhlevskii, A. , Huff, K. “Computational Tools for Advanced Molten Salt Reactor Simulation”, Blue Waters Symposium , Sun River, OR, June 2018.		
INVITED TALKS	U. Illinois, Nuclear, Plasma, & Radiological Engineering. <i>Seminar</i> .		Apr 10, 2018
ENGINEERING TEACHING	University of Illinois at Urbana-Champaign		Nov 29, 2017
	DEPT. OF NUCLEAR, PLASMA, AND RADIOLOGICAL ENGINEERING <i>NPRES 247, Modeling Nuclear Energy System</i> UNIX Shell, Basic Scripting, Serpent usage, Monte Carlo methods		Nov 9, 2018
UNDERGRADUATE RESEARCHERS	<u>NAME</u>	<u>DEGREE - YEAR</u>	<u>ROLE</u>
	Jin Whan Bae	BS - 2017	Mentor
	Louis Kissinger	BS - 2019	Mentor
SCIENTIFIC COMPUTING SKILLS	Languages		Python, bash/csh, C++, FORTRAN, VB
	Build Systems		make, CMake
	Version Control		git
	Other Tools		Serpent, SCALE, MOOSE, MathCAD, MATLAB, Octave, ANSYS, PyNE, Cyclus
OTHER UNIVERSITY SERVICE	Hack Mentor , Hack Illinois		2017

