

<b>Curriculum vitae</b>	<b>Alexei A. Kornyshev</b> PhD, DSc, FIUPAC, FInstP, FISE, FRSC, MRDASL	10/08/2022
<b>Nationality</b>	British	
<b>Current affiliation &amp; Position</b>	Professor of Chemical Physics <a href="https://www.imperial.ac.uk/people/a.kornyshev">https://www.imperial.ac.uk/people/a.kornyshev</a> Department of Chemistry, Faculty of Natural Sciences, Imperial College London	
<b>Education &amp; professional preparation</b>	<u>Undergraduate studies to Masters level:</u> 1964-70, Moscow Institute of Engineering Physics (TU of Nuclear Sciences)-Faculty of theoretical and experimental physics <u>Postgraduate studies:</u> 1970-1973 Institute of Electrochemistry, Acad. Sci. USSR, Moscow, Theoretical Physics/Electrochemistry: (Supervisor – Prof. R.R. Dogonadze)	
<b>Degrees</b>	<u>1970 Master's</u> in <i>Theoretical Nuclear Physics</i> , Moscow Inst. of Engineering Physics (Nuclear Sciences TU) <u>1974 PhD</u> in <i>Physical and Mathematical Sciences</i> (Theor.& Math. Physics), Acad. Sci. USSR, Moscow <u>1986 DSc</u> in Chemical Sciences, USSR Highest State Attestation Commission	
<b>Posts occupied</b>	<b>In Russia</b> (1974-1996) <u>Institute of Electrochemistry of the Russian Acad.Sci., Moscow:</u> (1974-76: Solid Electrolyte Group; 1976-1992, Theory Department; 1993-1996) 1974-86 <i>Researcher</i> ; 1986-88 <i>Senior-Researcher</i> ; 1989-96 <i>Leading Scientist</i> <b>In Germany</b> (1992-2002) <u>Research Centre Jülich:</u> 1992-1998: Institute for Energy Process Engineering: <i>Leader of Theory Group</i> . 1998-2002 Institute for Materials and Processes in Energy Systems, <i>Head of Division of Theoretical Physical Chemistry</i> 2001-2003 University of Düsseldorf, Professor of Theoretical Physics <b>In the UK</b> (2002 – now) <u>Imperial College London</u> <i>Professor of Chemical Physics</i>	
<b>Visiting positions</b> - as Guest Scientist, Visiting Professor, Director of workshops, participant of international programs	1977 <u>J. Heyrovsky Institute</u> Czech Acad Sci, Prague, <i>Guest Scientist</i> 1982 <u>University of Duesseldorf</u> , Germany, <i>Guest Scientist</i> 1986 <u>CNRS Bellevue</u> , France, <i>Guest Scientist</i> 1987-2002 <u>International Center for Theoretical Physics</u> , IAEA-UNESCO, Trieste, Italy <i>Research Leader, Editor, Director of Conferences</i> 1989 <u>Purdue University</u> , W. Lafayette, IN, USA <i>Visiting Professor</i> 1991-1992 <u>TU Munich</u> , Germany, <i>Humboldt Prize-Guest Professor</i> 1993, 1995, <u>TU Denmark</u> , Lyngby, <i>Visiting Professor</i> 1992-2006 (regular bi-annual project visits), <u>NIH</u> , Bethesda, MD, USA 1997 <u>Tel Aviv University</u> , Israel, <i>Guest Scientist</i> 1998, 2006, 2011 <u>Kavli Institute of Theoretical Physics</u> , UCSB, Santa Barbara, <i>Staff Member in Residence</i> 2008 <u>Max-Planck Institute for Mathematics in the Sciences</u> , <i>Senior Visiting Scientist</i> 2014 <u>Doshisha University</u> , Kyoto, Japan, <i>JSPS Visiting Professor</i> 2016-17 <u>Huazhong University of Science and Technology (HUST)</u> , Wuhan, China, <i>Advisory Professor</i> 2019- <u>HUST</u> , Wuhan, China, <i>Honorary Professor</i>	
<b>Prizes and awards</b>	1991 <i>Humboldt Prize</i> (Senior Award) Physical Chemistry/Electrochemistry 2001 <i>Royal Society Wolfson Research Merit Award</i> 2003 <i>Christian-Friedrich Schoenbein Contribution to Science Medal</i> 2002 <i>IUPAC Fellow</i> 2004 <i>Fellow of the Institute of Physics</i> (UK) 2006 <i>Fellow of the International Society of Electrochemistry</i> 2007 <i>RSC Geoffrey Barker Electrochemistry Medal</i> 2008 <i>Foreign Member of Royal Danish Academy of Sciences and Letters</i> 2010 <i>RSC Interdisciplinary Prize, Medal, and Lectureship</i> 2011 <i>Fellow of the Royal Society of Chemistry</i> 2011 <i>Fellow of the Royal Society of Biology</i> 2015 <i>JSPS short term senior fellow awardee</i> 2016 <i>Advisory Professor, Huazhong University of Science and Technology</i> 2017 <i>Inaugural winner of the Lynden-Bell Award, ILMAT</i> 2019 <i>Honorary Professor, Huazhong University of Science and Technology</i> 2022 <i>ISE Gold Medal, International Society of Electrochemistry</i>	
<b>Distinguished posts in learned societies</b>	1995-1998 ISE <i>Co-chairman of Division 1</i> (Interfacial Electrochemistry) 1999-2002 IUPAC: <i>Associate Member of Electrochemistry Commission</i>	
<b>Editorial boards</b> *active **expired	Member of Editorial Board <i>J. Phys.: Condensed Matter</i> (IOP) – Sections: Physics of Chemical Processes*; Liquids, Soft Matter & Biophysics** Member of Advisory Board of <i>Chemical Physics Letters</i> (Elsevier)* Member of Editorial Board <i>Current opinion in Electrochemistry</i> (Elsevier)* Member of Editorial Board <i>Russian J. of Physical Chemistry A</i> (Springer)* Member of Advisory Board <i>ChemElectroChem</i> (Wiley)** Head of Chemical Physics Panel, <i>Scientific Reports</i> (Nature PG)**	

<b>Committee memberships</b>	Evaluation committees for several DFG focussed programmes and launched new institutes, Germany; Irish Research Council; Advisory Board for Chemistry, Newcastle University (2015-2016); Oak Ridge National Laboratory Energy Program (2015), Advisor/Speaker on launching new Unit at Simons Foundation (2020)
<b>Organization of conferences</b>	25 International conferences organized and co-organized. Few examples: <u>Conference Director at International Center for Theoretical Physics (IAEA-UNESCO):</u> <i>Condensed Matter, Atomic &amp; Molecular Aspects of Electrochemistry</i> (1990), <i>Electron and Ion Transfer in Condensed Media</i> (1996), <i>Interaction and Assembly of Biomolecules</i> (2001), <i>From Physical Understanding to New Architectures of Fuel Cells</i> (2007), <i>From DNA-Inspired Physics to Physics-Inspired Biology</i> (2009). <u>Chair of RSC Faraday Discussion: <i>Chemical Physics of Electroactive Materials</i></u> (2017)
<b>Research Area</b>	Theoretical chemical physics of condensed matter <i>applications to – electrochemistry, biophysics, sustainable energy research, smart materials, photonics</i>
<b>Publications and citation statistics</b>	286+ original papers in refereed journals, >37 monographic/review articles, 3 Books WoS statistics: cited >16,250 times (>1,275 times in 2021), top paper cited 922 times; next 35 papers cited between 900 - 100 times; <b>h-index=64</b> . <a href="#">Citation report - 364 - All Databases (webofscience.com)</a> . Higher Google-scholar scores: <a href="https://scholar.google.com/citations?user=UU6vixUAAAAJ&amp;hl=en">https://scholar.google.com/citations?user=UU6vixUAAAAJ&amp;hl=en</a> <b>h-index=74</b>
<b>Past and present key international collaborators (PIs)</b> *currently active	<b>USA:</b> S. Leikin (NIH), M. Prentiss* (Harvard), R. Qiao (Virginia Tech), Y. Gogotsi (Drexel), R. Colby (Penn State), M. Flatte (Iowa), M. Bazant (MIT)*, A. Kolomeisky* <sup>2</sup> (Rice), M. Weaver (Purdue), A. Wynveen* (Minnesota), A. Aksimenijev* (Univ. Illinois at Urbana-Champaign) <b>Canada:</b> M. Eikerling* (Simon Fraser) <b>Germany:</b> W. Schmickler (Ulm), V. Presser (Saarbrücken), U. Stimming, A. Kulikovskiy (FZ Juelich), E. Spohr (Duisburg-Essen), M. Fedorov (MPI-Math.-in-Sciences, Leipzig), H. Loewen (Univ. of Duesseldorf) <b>Poland:</b> S. Kondrat* (Institute of Physical Chemistry, P.A.S., Warsaw) <b>Denmark:</b> J. Ulstrup* (TUD, Lyngby). <b>France:</b> G. Oshanin*, H. Berthoumieux* (Laboratory of Theoretical Condensed Matter Physics, CNRS) <b>Estonia:</b> E. Lust (Tartu) <b>Czech Rep.:</b> K. Holub (Heyrovsky Institute, C.A.S.) <b>Russia:</b> A.M. Kuznetsov, M.A. Vorotyntsev (Frumkin Institute), A.S. Ioselevich (Landau Institute) –RAS M. Kiselev & Y. Budkov (Institute of Solution Chemistry, RAS, Ivanovo) <b>Ukraine:</b> M. Dudka* (Institute for Condensed Matter Physics, UAS, Lviv) <b>Israel:</b> M. Urbakh*, A. Nitzan (Tel Aviv Univ.) <b>China:</b> G. Feng* (Huazhong Univ. of Sci. & Tech., Wuhan), Y. Li* (USTC) <b>UK:</b> Prof. M. Fedorov (Univ. of Strathclyde), G. van der Heijden (UCL); U. Stimming (Univ. Newcastle); <u>Imperial</u> – T. Albrecht, J. Edel*, A. Kucernak*, F. Bresme*, J. Seddon, G. Baldwin, J.B. Pendry*
<b>Textbooks</b>	A.A. Kornyshev and D.O'Lee, <b><i>How to Derive a Formula</i></b> (World Scientific, Singapore) <b>Vol.1</b> <a href="#">Basic Analytical Skills and Methods for Physical Scientists</a> (2020) <b>Vol.2</b> <a href="#">Further Analytical Skills and Methods for Physical Scientists</a> (in Press, 2022)

#### Principal scientific achievements:

1. Fundamentals of nonlocal electrostatics and its applications in electrochemistry, physical chemistry, and biophysics
2. Modelling the nonlocal dielectric response of water and aqueous solutions and understanding solvent-solute interactions
3. Theory of space-charge determined phenomena in solid electrolytes
4. Theory of ionic liquids, and solvent in salt systems
5. Theory of ionic liquids at electrified interfaces and nanoconfinement (with applications to supercapacitors and electro-tunable friction)
6. Theory of hydration forces
7. Electronic theory of electrochemical interfaces: electrical and optical properties
8. Theory of electrochemical liquid-liquid interfaces: structure, dynamics, functioning
9. Physical theory of fuel cell electrodes, membranes, and whole cells
10. New molecular dynamic model of proton transport in water; theory of proton transport in polymer electrolytes
11. Theory of interaction and aggregation of helical biomolecules in solutions
12. Discovery of new mechanism of recognition of homologous genes
13. Discovery and theoretical description of an electrochemical ultra-low voltage electrowetting system
14. Principles of novel self-assembling nanoplasmonic metamaterials for ultrasensitive detection of hazardous molecules and electrovariable photonics
15. Statistical theory of field-induced surface reconstruction and roughening transitions at single crystal electrodes
16. Theory of electrical double layer on rough solid electrodes
17. New method for the study of surface of diffusion via studies of STM noise
18. Discovery and detailed description of a new principle of an electrochemical single molecule rectifier
19. Theory and new scenarios of enhanced electroactuation and reverse actuation