# Kirill A Lomachenko

## List of Publications by Citations



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| 88 papers | 3,727 citations | 32 h-index | 60 g-index |
| 91 ext. papers | 4,405 ext. citations | 5.1 avg, IF | 5.36 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 88 | A Consistent Reaction Scheme for the Selective Catalytic Reduction of Nitrogen Oxides with Ammonia. *ACS Catalysis*, **2015**, 5, 2832-2845 | 13.1 | 319 |
| 87 | Revisiting the nature of Cu sites in the activated Cu-SSZ-13 catalyst for SCR reaction. *Chemical Science*, **2015**, 6, 548-563 | 9.4 | 265 |
| 86 | Cerium-based metal organic frameworks with UiO-66 architecture: synthesis, properties and redox catalytic activity. *Chemical Communications*, **2015**, 51, 12578-81 | 5.8 | 249 |
| 85 | Interaction of NH3 with Cu-SSZ-13 Catalyst: A Complementary FTIR, XANES, and XES Study. *Journal of Physical Chemistry Letters*, **2014**, 5, 1552-9 | 6.4 | 209 |
| 84 | Methane to Methanol: Structure-Activity Relationships for Cu-CHA. *Journal of the American Chemical Society*, **2017**, 139, 14961-14975 | 16.4 | 202 |
| 83 | Metal-organic frameworks: structure, properties, methods of synthesis and characterization. *Russian Chemical Reviews*, **2016**, 85, 280-307 | 6.8 | 198 |
| 82 | The Cu-CHA deNOx Catalyst in Action: Temperature-Dependent NH3-Assisted Selective Catalytic Reduction Monitored by Operando XAS and XES. *Journal of the American Chemical Society*, **2016**, 138, 12025-8 | 16.4 | 197 |
| 81 | Optimized Finite Difference Method for the Full-Potential XANES Simulations: Application to Molecular Adsorption Geometries in MOFs and Metal-Ligand Intersystem Crossing Transients. *Journal of Chemical Theory and Computation*, **2015**, 11, 4512-21 | 6.4 | 137 |
| 80 | Composition-driven Cu-speciation and reducibility in Cu-CHA zeolite catalysts: a multivariate XAS/FTIR approach to complexity. *Chemical Science*, **2017**, 8, 6836-6851 | 9.4 | 129 |
| 79 | The Nuclearity of the Active Site for Methane to Methanol Conversion in Cu-Mordenite: A Quantitative Assessment. *Journal of the American Chemical Society*, **2018**, 140, 15270-15278 | 16.4 | 123 |
| 78 | Probing Reactive Platinum Sites in UiO-67 Zirconium Metal□Organic Frameworks. *Chemistry of Materials*, **2015**, 27, 1042-1056 | 9.6 | 95 |
| 77 | Reversible Capture and Release of Cl and Br with a Redox-Active Metal-Organic Framework. *Journal of the American Chemical Society*, **2017**, 139, 5992-5997 | 16.4 | 82 |
| 76 | In situ formation of hydrides and carbides in palladium catalyst: When XANES is better than EXAFS and XRD. *Catalysis Today*, **2017**, 283, 119-126 | 5.3 | 81 |
| 75 | High Zn/Al ratios enhance dehydrogenation vs hydrogen transfer reactions of Zn-ZSM-5 catalytic systems in methanol conversion to aromatics. *Journal of Catalysis*, **2018**, 362, 146-163 | 7.3 | 78 |
| 74 | Temperature- and Pressure-Dependent Hydrogen Concentration in Supported PdHx Nanoparticles by Pd K-Edge X-ray Absorption Spectroscopy. *Journal of Physical Chemistry C*, **2014**, 118, 10416-10423 | 3.8 | 73 |
| 73 | Unravelling the Redox-catalytic Behavior of Ce Metal-Organic Frameworks by X-ray Absorption Spectroscopy. *ChemPhysChem*, **2018**, 19, 373-378 | 3.2 | 69 |
| 72 | Synthesis of M-UiO-66 (M = Zr, Ce or Hf) employing 2,5-pyridinedicarboxylic acid as a linker: defect chemistry, framework hydrophilisation and sorption properties. *Dalton Transactions*, **2018**, 47, 1062-1070 | 4.3 | 65 |

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| 71 | Core–Shell Structure of Palladium Hydride Nanoparticles Revealed by Combined X-ray Absorption Spectroscopy and X-ray Diffraction. *Journal of Physical Chemistry C*, **2017**, 121, 18202-18213 | 3.8 | 57 |
| 70 | A Titanium(IV)-Based Metal-Organic Framework Featuring Defect-Rich Ti-O Sheets as an Oxidative Desulfurization Catalyst. *Angewandte Chemie - International Edition*, **2019**, 58, 9160-9165 | 16.4 | 53 |
| 69 | Structure and Reactivity of Oxygen-Bridged Diamino Dicopper(II) Complexes in Cu-Ion-Exchanged Chabazite Catalyst for NH-Mediated Selective Catalytic Reduction. *Journal of the American Chemical Society*, **2020**, 142, 15884-15896 | 16.4 | 51 |
| 68 | Palladium Carbide and Hydride Formation in the Bulk and at the Surface of Palladium Nanoparticles. *Journal of Physical Chemistry C*, **2018**, 122, 12029-12037 | 3.8 | 45 |
| 67 | Quantitative structural determination of active sites from in situ and operando XANES spectra: From standard ab initio simulations to chemometric and machine learning approaches. *Catalysis Today*, **2019**, 336, 3-21 | 5.3 | 44 |
| 66 | Exact Stoichiometry of Ce Zr Cornerstones in Mixed-Metal UiO-66 Metal-Organic Frameworks Revealed by Extended X-ray Absorption Fine Structure Spectroscopy. *Journal of the American Chemical Society*, **2018**, 140, 17379-17383 | 16.4 | 44 |
| 65 | Evolution of active sites during selective oxidation of methane to methanol over Cu-CHA and Cu-MOR zeolites as monitored by operando XAS. *Catalysis Today*, **2019**, 333, 17-27 | 5.3 | 43 |
| 64 | Exploring structure and reactivity of Cu sites in functionalized UiO-67 MOFs. *Catalysis Today*, **2017**, 283, 89-103 | 5.3 | 42 |
| 63 | Time-resolved operando studies of carbon supported Pd nanoparticles under hydrogenation reactions by X-ray diffraction and absorption. *Faraday Discussions*, **2018**, 208, 187-205 | 3.6 | 42 |
| 62 | Modulator Effect in UiO-66-NDC (1,4-Naphthalenedicarboxylic Acid) Synthesis and Comparison with UiO-67-NDC Isoreticular Metal–Organic Frameworks. *Crystal Growth and Design*, **2017**, 17, 5422-5431 | 3.5 | 42 |
| 61 | Solvent-Driven Gate Opening in MOF-76-Ce: Effect on CO2 Adsorption. *ChemSusChem*, **2016**, 9, 713-9 | 8.3 | 42 |
| 60 | Nitrate–nitrite equilibrium in the reaction of NO with a Cu-CHA catalyst for NH3-SCR. *Catalysis Science and Technology*, **2016**, 6, 8314-8324 | 5.5 | 39 |
| 59 | Operando study of palladium nanoparticles inside UiO-67 MOF for catalytic hydrogenation of hydrocarbons. *Faraday Discussions*, **2018**, 208, 287-306 | 3.6 | 37 |
| 58 | Temperature-dependent dynamics of NH3-derived Cu species in the Cu-CHA SCR catalyst. *Reaction Chemistry and Engineering*, **2019**, 4, 1067-1080 | 4.9 | 33 |
| 57 | Identifying Cu-oxo species in Cu-zeolites by XAS: A theoretical survey by DFT-assisted XANES simulation and EXAFS wavelet transform. *Catalysis Today*, **2020**, 345, 125-135 | 5.3 | 33 |
| 56 | High energy resolution core-level X-ray spectroscopy for electronic and structural characterization of osmium compounds. *Physical Chemistry Chemical Physics*, **2013**, 15, 16152-9 | 3.6 | 32 |
| 55 | Tuning Pt and Cu sites population inside functionalized UiO-67 MOF by controlling activation conditions. *Faraday Discussions*, **2017**, 201, 265-286 | 3.6 | 27 |
| 54 | A Titanium(IV)-Based Metal–Organic Framework Featuring Defect-Rich Ti-O Sheets as an Oxidative Desulfurization Catalyst. *Angewandte Chemie*, **2019**, 131, 9258-9263 | 3.6 | 25 |

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| 53 | The duality of UiO-67-Pt MOFs: connecting treatment conditions and encapsulated Pt species by operando XAS. *Physical Chemistry Chemical Physics*, **2017**, 19, 27489-27507 | 3.6 | 25 |
| 52 | Co-Ligand Dependent Formation and Phase Transformation of Four Porphyrin-Based Cerium Metal□Organic Frameworks. *Crystal Growth and Design*, **2017**, 17, 3462-3474 | 3.5 | 23 |
| 51 | XAS and XES Techniques Shed Light on the Dark Side of Ziegler□Natta Catalysts: Active-Site Generation. *ChemCatChem*, **2015**, 7, 1432-1437 | 5.2 | 23 |
| 50 | EXAFS wavelet transform analysis of Cu-MOR zeolites for the direct methane to methanol conversion. *Physical Chemistry Chemical Physics*, **2020**, 22, 18950-18963 | 3.6 | 23 |
| 49 | Evidence of Mixed-Ligand Complexes in Cu□CHA by Reaction of Cu Nitrates with NO/NH3 at Low Temperature. *ChemCatChem*, **2019**, 11, 3828-3838 | 5.2 | 22 |
| 48 | Hydride phase formation in carbon supported palladium hydride nanoparticles byin situEXAFS and XRD. *Journal of Physics: Conference Series*, **2016**, 712, 012032 | 0.3 | 21 |
| 47 | Finite difference method accelerated with sparse solvers for structural analysis of the metal-organic complexes. *Journal of Physics: Conference Series*, **2016**, 712, 012004 | 0.3 | 19 |
| 46 | The impact of reaction conditions and material composition on the stepwise methane to methanol conversion over Cu-MOR: An operando XAS study. *Catalysis Today*, **2019**, 336, 99-108 | 5.3 | 19 |
| 45 | Disclosing the Properties of a New Ce(III)-Based MOF: Ce2(NDC)3(DMF)2. *Crystal Growth and Design* , **2019**, 19, 787-796 | 3.5 | 18 |
| 44 | Dynamics of Reactive Species and Reactant-Induced Reconstruction of Pt Clusters in Pt/Al2O3 Catalysts. *ACS Catalysis*, **2019**, 9, 7124-7136 | 13.1 | 15 |
| 43 | Evolution of Pt and Pd species in functionalized UiO-67 metal-organic frameworks. *Catalysis Today*, **2019**, 336, 33-39 | 5.3 | 13 |
| 42 | Understanding and Optimizing the Performance of Cu-FER for The Direct CH4 to CH3OH Conversion. *ChemCatChem*, **2019**, 11, 621-627 | 5.2 | 13 |
| 41 | Finding the active species: The conversion of methanol to aromatics over Zn-ZSM-5/alumina shaped catalysts. *Journal of Catalysis*, **2021**, 394, 416-428 | 7.3 | 13 |
| 40 | ? Divergent coordination behavior of early-transition metals towards MOF-5. *Chemical Science*, **2019**, 10, 5906-5910 | 9.4 | 11 |
| 39 | Active sites in Cu-SSZ-13 deNOx catalyst under reaction conditions: a XAS/XES perspective. *Journal of Physics: Conference Series*, **2016**, 712, 012041 | 0.3 | 11 |
| 38 | Advanced X-ray Absorption Spectroscopy Analysis to Determine Structure-Activity Relationships for Cu-Zeolites in the Direct Conversion of Methane to Methanol. *ChemCatChem*, **2020**, 12, 2385-2405 | 5.2 | 10 |
| 37 | Comparing the Nature of Active Sites in Cu-loaded SAPO-34 and SSZ-13 for the Direct Conversion of Methane to Methanol. *Catalysts*, **2020**, 10, 191 | 4 | 9 |
| 36 | Pd hydride and carbide studied by means of Pd K-edge X-ray absorption near-edge structure analysis. *Bulletin of the Russian Academy of Sciences: Physics*, **2015**, 79, 1180-1185 | 0.4 | 9 |

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| 35 | Time-dependent carbide phase formation in palladium nanoparticles. *Radiation Physics and Chemistry*, **2020**, 175, 108079 | 2.5 | 9 |
| 34 | CO2 hydrogenation to methanol and hydrocarbons over bifunctional Zn-doped ZrO2/zeolite catalysts. *Catalysis Science and Technology*, **2021**, 11, 1249-1268 | 5.5 | 8 |
| 33 | Bimetallic hexanuclear clusters in Ce/Zr-UiO-66 MOFs: in situ FTIR spectroscopy and modelling insights. *Dalton Transactions*, **2020**, 49, 5794-5797 | 4.3 | 7 |
| 32 | Cerium(III) Nitrate Derived CeO2 Support Stabilising PtOx Active Species for Room Temperature CO Oxidation. *ChemCatChem*, **2020**, 12, 1413-1428 | 5.2 | 7 |
| 31 | Atomic and electronic structure of free niobium nanoclusters: Simulation of the M4,5-XANES spectrum of Nb13+. *Journal of Electron Spectroscopy and Related Phenomena*, **2014**, 195, 189-194 | 1.7 | 6 |
| 30 | A XAFS study of the local environment and reactivity of Pt- sites in functionalized UiO-67 MOFs. *Journal of Physics: Conference Series*, **2016**, 712, 012125 | 0.3 | 6 |
| 29 | Experimental and theoretical study of hydrogen desorption process from Mn(BH4)2. *Journal of Alloys and Compounds*, **2018**, 735, 277-284 | 5.7 | 6 |
| 28 | Cu-Exchanged Ferrierite Zeolite for the Direct CH4 to CH3OH Conversion: Insights on Cu Speciation from X-Ray Absorption Spectroscopy. *Topics in Catalysis*, **2019**, 62, 712-723 | 2.3 | 5 |
| 27 | X-ray absorption spectroscopy determination of the products of manganese borohydride decomposition upon heating. *Bulletin of the Russian Academy of Sciences: Physics*, **2015**, 79, 139-143 | 0.4 | 5 |
| 26 | Local structure of Cu(I) ions in the MOR zeolite: A DFT-assisted XAS study. *Radiation Physics and Chemistry*, **2020**, 175, 108111 | 2.5 | 5 |
| 25 | Wavelet analysis of a Cu-oxo zeolite EXAFS simulated spectrum. *Radiation Physics and Chemistry*, **2020**, 175, 108333 | 2.5 | 5 |
| 24 | Hydrogenation of ethylene over palladium: evolution of the catalyst structure by operando synchrotron-based techniques. *Faraday Discussions*, **2021**, 229, 197-207 | 3.6 | 5 |
| 23 | Probing Structure and Reactivity of Metal Centers in Metal□Organic Frameworks by XAS Techniques **2017**, 397-430 | | 4 |
| 22 | Doped CdTe-based quantum dots. *Bulletin of the Russian Academy of Sciences: Physics*, **2015**, 79, 1413-1416 | 0.4 | 4 |
| 21 | Cu- and Fe-speciation in a composite zeolite catalyst for selective catalytic reduction of NOx: insights from operando XAS. *Catalysis Science and Technology*, **2021**, 11, 846-860 | 5.5 | 4 |
| 20 | Investigation of the nanoscale two-component ZnS-ZnO heterostructures by means of HR-TEM and X-ray based analysis. *Journal of Solid State Chemistry*, **2018**, 262, 264-272 | 3.3 | 3 |
| 19 | X-ray absorption spectroscopy data during formation of active Pt- and Pd-sites in functionalized UiO-67 metal-organic frameworks. *Data in Brief*, **2019**, 25, 104280 | 1.2 | 3 |
| 18 | Influence of Cu-speciation in mordenite on direct methane to methanol conversion: Multi-Technique characterization and comparison with NH3 selective catalytic reduction of NOx. *Catalysis Today*, **2021**, 369, 105-111 | 5.3 | 3 |

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| 17 | Hampered PdO Redox Dynamics by Water Suppresses Lean Methane Oxidation over Realistic Palladium Catalysts. *ChemCatChem*, **2021**, 13, 3765-3771 | 5.2 | 3 |
| 16 | Investigating the role of Cu-oxo species in Cu-nitrate formation over Cu-CHA catalysts. *Physical Chemistry Chemical Physics*, **2021**, 23, 18322-18337 | 3.6 | 3 |
| 15 | In situ X-ray absorption study of Cu species in Cu-CHA catalysts for NH3-SCR during temperature-programmed reduction in NO/NH3. *Research on Chemical Intermediates*, **2021**, 47, 357-375 | 2.8 | 3 |
| 14 | Speciation of Ru Molecular Complexes in a Homogeneous Catalytic System: Fingerprint XANES Analysis Guided by Machine Learning. *Journal of Physical Chemistry C*, **2021**, 125, 27844-27852 | 3.8 | 3 |
| 13 | Spectroscopic Methods in Catalysis and Their Application in Well-Defined Nanocatalysts. *Studies in Surface Science and Catalysis*, **2017**, 221-284 | 1.8 | 2 |
| 12 | Nanotribology of copper clusters. *Nanotechnologies in Russia*, **2016**, 11, 593-602 | 0.6 | 2 |
| 11 | Spin-State Transition, Magnetism and Local Crystal Structure in Eu1-xCaxCoO3-□*Journal of the Physical Society of Japan*, **2013**, 82, 044714 | 1.5 | 2 |
| 10 | XAS on Rh and Ir metal sites in post synthetically functionalized UiO-67 Zirconium MOFs. *Journal of Physics: Conference Series*, **2016**, 712, 012053 | 0.3 | 2 |
| 9 | Versatile and high temperature spectroscopic cell for operando fluorescence and transmission x-ray absorption spectroscopic studies of heterogeneous catalysts. *Review of Scientific Instruments*, **2021**, 92, 023106 | 1.7 | 2 |
| 8 | Quantification of Adsorbates by X-ray Absorption Spectroscopy: Getting TGA-like Information for Free. *Journal of Physical Chemistry C*, **2022**, 126, 5175-5179 | 3.8 | 2 |
| 7 | Investigation of oxygen vacancies in CeO2/Pt system with synchrotron light techniques. *Journal of Physics: Conference Series*, **2016**, 712, 012064 | 0.3 | 1 |
| 6 | Kinetics of the Atomic Structure of Palladium Nanoparticles during the Desorption of Hydrogen According to X-Ray Diffraction. *JETP Letters*, **2019**, 109, 594-599 | 1.2 | 1 |
| 5 | Energy and Environmental Science at ESRF. *Synchrotron Radiation News*, **2020**, 33, 40-51 | 0.6 | 1 |
| 4 | Nanostructured Materials **2016**, 809-827 | | 1 |
| 3 | DFT-assisted XANES simulations to discriminate different monomeric CuII species in CHA catalysts. *Radiation Physics and Chemistry*, **2020**, 175, 108510 | 2.5 | 1 |
| 2 | Photoactivated Osmium Arene Anticancer Complexes. *Inorganic Chemistry*, **2021**, 60, 17450-17461 | 5.1 | 1 |
| 1 | SO Poisoning of Cu-CHA deNO Catalyst: The Most Vulnerable Cu Species Identified by X-ray Absorption Spectroscopy.. *Jacs Au*, **2022**, 2, 787-792 | | 0 |