Curriculum Vitae

Kyung Hwan Kim

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Personal Information

Sex : Male

Date of Birth : March 2, 1984

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Education

2002. 3 – 2006. 8 Bachelor of Science (B.S.) in Chemistry, Department of Chemistry, KAIST, Daejeon South Korea (Summa Cum Laude).

2006. 9 – 2013. 2 M. S & Ph.D joint course, Department of Chemistry, KAIST, Daejeon, South Korea. (Advisor: Prof. Hyotcherl Ihee)

Professional Experiences

2013. 2 – 2016. 3 Postdoctoral Fellow, Department of Chemistry, KAIST. (Advisor: Prof. Hyotcherl Ihee)

2013. 2 – 2016.3 Research Fellow, Institute for Basic Science (IBS).

2016. 3 – 2018. 9 Postdoctoral Fellow, Department of Physics, Stockholm University. (Advisor: Prof. Anders Nilsson)

2018.9 – present Assistant Professor, Department of Chemistry, POSTECH

Awards and Honors

Best Dissertation Award (2013, KAIST)

IBS Outstanding Researcher Award (2014, IBS)

Cheongam Science Fellowship for Young Investigator (2020, Cheongam Foundation)

Rising Scientist (2023, KAST)

Journal publications

[53] H. Ogasawara, H. Wang, J. Gladh, A. Gallo, R. Page, J. Voss, A. Luntz*, E. Diesen, F. Abild-Pedersen, A. Nilsson, M. Soldemo, M. Zajac, A. Attar, M. E. Chen, S. W. Cho, A. Katoch, K.-J. Kim, **K. H. Kim**, M. Kim, S. Kwon, S. H. Park, H. Ribeiro, S. Sainio, H.-Y. Wang, C. Yang, and T. Heinz, "X-ray free electron laser studies of electron and phonon dynamics of graphene adsorbed on copper", *Phys. Rev. Mater.,* 7, 024005 (2023).

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[51] M. Ladd-Parada, H. Li, A. Karina, **K. H. Kim**, F. Perakis, M. Reiser, F. Dallari, N. Striker, M. Sprung, F. Westermeier, G. Grübel, A. Nilsson, F. Lehmkühler, and K. Amann-Winkel*, "Using coherent X-rays to follow dynamics in amorphous ices", *Environ. Sci. Atmos.*, 2, 1314-1323 (2022).

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[49] N. Esmaeildoost, H. Pathak, A. Späh, T. J. Lane, **K. H. Kim**, C. Yang, K. Amann-Winkel, M. Ladd-Parada, F. Perakis, J. Koliyadu, A. R. Oggenfuss, P. J. M. Johnson, Y. Deng, S. Zerdane, R. Mankowsky, P. Beaud, H. T. Lemke, A. Nilsson and J. A. Sellberg*, "Anomalous temperature dependence of the experimental x-ray structure factor of supercooled water", *J. Chem. Phys.*, 155, 214501 (2021).

[48] H. Pathak, A. Späh, N. Esmaeildoost, J. A. Sellberg, **K. H. Kim**, F. perakis, K. Amann-Winkel, M. Ladd-Parada, J. Koliyadu, T. J. Lane, C. Yang, H. T. Lemke, A. R. Oggenfuss, P. J. M. Johnson, Y. Deng, S. Zerdane, R. Mankowsky, P. Beaud, and A. Nilsson*, "Enhancement and maximum in the isobaric specific-heat capacity measurements of deeply supercooled water using ultrafast calorimetry", ***Proc. Nat. Acad. Sci. U. S. A.***, 118, e2018379118 (2021).

[47] **K. H. Kim**†, K. Amann-Winkel†, N. Giovambattista, A. Späh, F. Perakis, H. Pathak, M. L. Parada, C. Yang, D. Mariedahl, T. Eklund, T. J. Lane, S. You, S. Jeong, M. Weston, J. H. Lee, I. Eom, M. Kim, J. Park, S. H. Chun, P. H. Poole, and A. Nilsson*, "Experimental observation of the liquid-liquid transition in bulk supercooled water under pressure",

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[42] H. Pathak*, A. Späh, **K. H. Kim**, F. Perakis, I. Tsironi, D. Mariedahl, M. Blanco, S. Huotari, V. Honkimäki, and A. Nilsson, "Intermediate range O–O correlations in supercooled water down to 235 K", ***J. Chem. Phys.***, 150, 224506 (2019).

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[40] D. Mariedahl, F. Perakis, A. Späh, H. Pathak, **K. H. Kim**, C. Benmore, A. Nilsson, and K. Amann-Winkel*, "X-ray studies of the transformation from high- to low-density amorphous water", ***Phil. Trans. R. Soc. A***, 377, 20180164 (2019).

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[37] D. Mariedahl, F. Perakis, A. Späh, H. Pathak, K. H. Kim, G. Camisasca, D. Schlesinger, C. Benmore, L. G. M. Pettersson, A. Nilsson, and K. Amann-Winkel*, "X-ray Scattering and O–O Pair-Distribution Functions of Amorphous Ices", J. Phys. Chem. B, 122, 7616 (2018).

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[33] **K. H. Kim**†, A. Späh†, H. Pathak, F. Perakis, D. Mariedahl, K. Amann-Winkel, J. A. Sellberg, J. H. Lee, S. Kim, J. Park, K. H. Nam, T. Katayama, and A. Nilsson*, "Maxima in the Thermodynamic Response and Correlation Functions of Deeply Supercooled Water", ***Science***, 358, 1589-1593 (2017)

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W. Gawelda, N. Henriksen, J. G. Kim, K. Haldrup, **K. H. Kim**, H. Ihee, J. Kim, H. Lemke, Z. Sun, V. Sundstrom, W. Zhang, D. Zhu, K. Møller, M. Nielsen, K. Gaffney, "Atomistic characterization of the active-site solvation dynamics of a model photocatalyst", ***Nature Commun.***, 7, 13678 (2016)

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[28] J. G. Kim, S. Muniyappan, K. Y. Oang, T. W. Kim, C. Yang, **K. H. Kim**, J. Kim, and H. Ihee*, "Cooperative protein structural dynamics of homodimeric hemoglobin linked to water cluster at subunit interface revealed by time-resolved X-ray solution scattering", ***Struct. Dyn.***, 3, 023610 (2016).

[27] J. Kim*, **K. H. Kim**, K. Y. Oang, J. H. Lee, K. Hong, H. Cho, N. Huse, R. W. Schoenlein, T. K. Kim*, H. Ihee*, "Tracking reaction dynamics in solution by pump-probe X-ray absorption spectroscopy and X-ray liquidography (solution scattering)", ***Chem. Commun.***, 52, 3734-3749 (2016).

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†Equal contribution

[22] K. Y. Oang, **K. H. Kim**, J. Jo, Y. Kim, J. G. Kim, T. W. Kim, S. Jun, J. Kim, H. Ihee*, "Sub-100-ps Structural Dynamics of Horse Heart Myoglobin Probed by Time-resolved X-ray Solution Scattering", ***Chem. Phys.***, 442, 137-142 (2014)

[21] K. Y. Oang, J. G. Kim, C. Yang, T. W. Kim, Y. Kim, **K. H. Kim**, J. Kim, H. Ihee*, "Conformational Substates of Myoglobin Intermediate Resolved by Picosecond X-ray Solution Scattering", ***J. Phys. Chem. Lett.***, 5, 804-808 (2014)

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[11] J. Kim†, **K. H. Kim**†, J. G.Kim, T. W. Kim, Y. Kim, H. Ihee*, "Anisotropic Picosecond X-ray Solution Scattering from Photo-selectively Aligned Protein Molecules", ***J. Phys. Chem. Lett.***, 2, 350-356 (2011)

†Equal contribution

[10] **K. H. Kim**, K. Y. Oang, J. Kim, J. H. Lee, Y. Kim, H. Ihee*, "Direct Observation of Myoglobin Structural Dynamics from 100 picoseconds to 1 microsecond with Picosecond X-ray Solution Scattering", ***Chem. Commun.,*** 47, 289-291 (2011)

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INVITED SEMINARS-International (selected)

[5] "Revealing a Hypothetical Fragile to Strong Transition of Water using Anisotropic X-ray Scattering at FELs", The 11th Asian Conference on Ultrafast Phenomena 2023, Singapore (Jan. 2023)

[4] "The Mystery of Water Revealed from X-ray Experiments with Free Electron Lasers", The 11th Asian Conference on Ultrafast Phenomena 2020, Shanghai, China (Jan. 2020)

[3] "Probing Supercooled Water in No-Man's Land with Free Electron Lasers", 14th Asia-Pacific Physics Conference 2019, Kuching, Malaysia (Nov. 2019)

[2] "Searching for the Hypothesized Liquid-Liquid Critical Point in Supercooled Water with X-ray Free Electron Laser", 2019 Free-Electron Laser Conference (FEL2019), Hamburg, Germany, (Aug. 2019)

[1] "Capturing the formation of chemical bond with femtosecond X-ray solution scattering", The 13th Conference of the Asian Crystallographic Association (AsCA 2015), Kolkata, India (Dec, 2015)