

Curriculum Vitae

Name : Kwang Soo Kim
Born : Feb. 6, 1950 (Korea)
Address : (office) Department of Chemistry, School of Natural Science, Ulsan National Institute of Science and Technology (UNIST), (Bldg. 103) 50 UNIST-gil, Ulsan 44919, Korea
(home) UNIST Faculty Apt. 402-601, 50 UNIST-gil, Ulsan National Institute of Science and Technology, Ulsan, 44919, Korea
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E-mail : kimks@unist.ac.kr
Web page: <http://csm.unist.ac.kr> (Center for Superfunctional Materials),
<http://www.researcherid.com/rid/C-7538-2012> (ISI)
Education : 9/78-6/82 Univ. of California, Berkeley, Chemistry, Ph.D.
9/73-6/75 Korea Advanced Institute of Science & Tech., Physics, M.S.
3/71-2/73 Seoul National Univ., Applied Chemistry, M.Eng..
3/67-2/71 Seoul National Univ., Engineering College, Applied Chemistry, B.S.

Professional Experiences :

3/14-present Ulsan National Institute of Science and Technology (UNIST),
Center for Superfunctional Materials, Director
3/14-present Ulsan National Institute of Science and Technology (UNIST),
Dept. of Chemistry, School of Natural Science, Distinguished Professor.
12/97-2/14 Pohang Univ. of Science & Tech., Center for Superfunctional Materials, Director
1/88- 2/14 Pohang Univ. of Science & Tech., Dept. of Chemistry, Ass. - Full Professor.
8/04- 6/05 Columbia Univ. Dept. Elect. Engineering & NanoCenter, Visiting Scholar
8/94- 7/95 MIT, Dept. of Physics, Visiting Scientist
8/85-12/87 Rutgers Univ., Visiting Assistant Professor, Research Assistant Professor
9/82- 7/85 IBM/NFCR, Postdoctoral Research Fellow
9/75- 9/78 Chungnam National Univ. Dept. of Physics, Instructor, Assistant Professor

Professional Societies: Amer. Chem. Soc. (ACS), Korean Chem. Soc. (KCS),
Korean Academy of Science and Tech. [Fellow] (1999),
International Academy of Quantum Molecular Science (IAQMS) membership (2009):
<http://www.iaqms.org/members/kim.php>

Editors and Board Members of International Journals:

Journal of Physical Chemistry A, B, C (Am. Chem. Soc.); (2015-present); Senior Editor
Wiley Interdisciplinary Reviews: Computational Molecular Science (Wiley); (2011-present)
Chemistry Letters (Chem. Soc. Japan); (2010- present)
NPG Asia Materials (Nature Publishing Group); (2009-present)
Chemical Physics Letters (Elsevier); (2009- present)
Advances in Physical Chemistry (Hindawi); (2008- present)
Computational and Theoretical Chemistry (Elsevier); (2007- present)
Chemistry – An Asian Journal (Wiley-VCH); (2006- 2013)
Journal of Computational Chemistry (Wiley-VCH); (2005- present)

Bulletin of Korean Chemical Society; (2000- 2009) [Associate Editor, 3/00-12/03]

Board Member of International Conferences:

World Association of Theoretically Oriented Chemistry (WATOC) (2005- present)

Asian Pacific Conference on Theoretical and Computational Chemistry (APCTCC) (2005- present)

Research Interests: Theoretical/computational chemistry/physics (density functional theory, ab initio theory, molecular dynamics, statistical thermodynamics, molecular recognition, self-assembly, transport phenomena, nonequilibrium thermodynamics, entanglement perturbation theory) Experimental Nanosciences (functional molecules/materials, molecular sensing, molecular engineering, nano electronic/spintronic/photonic devices, light harvesting, photosynthesis, green chemistry, CO₂/H₂/energy storage, DNA sequencing, molecular robots)

Awards & Honors: Mulliken Lecture, Univ. of Georgia, USA (2011)

Ranked within the top 500 chemists (only one among Korean nationals): H-index ranking of well known living chemists: Updated online by Chemistry World, UK, on Dec 12, 2011:

[http://www.rsc.org/images/H-index%20ranking%20of%20living%20chemists\(December%202011\)_tcm18-211414.pdf](http://www.rsc.org/images/H-index%20ranking%20of%20living%20chemists(December%202011)_tcm18-211414.pdf)

Korea National Honor Scientist (2010) 국가과학자

Korea Premium Science and Technology Award (2010) 대한민국 최고과학기술인상

Fukui medal from Asia-Pacific Association of Theoretical and Computational Chemistry (APATCC) (2010): [<http://www.apatcc.org/awards.html>]

International Academy of Quantum Molecular Science (IAQMS): membership elected (2009): [<http://www.iaqms.org/members/kim.php>]

Postech Fellow (2009-2014)

Hongdeuk Chaired Professor (2004-2007)

Korea Science Award from Korean President (2004) 한국과학상

Academic Achievement Award from the Korean Chemical Society (2001)

Invited Talks: ~130 invited talks in international conferences including ~35 plenary and keynote talks

Citations/Impact.: 463 publications in SCI journals; **SCI Citations: ~33,200;** **H-index: 83**

Brief Introduction of Publications:

- Over 450 papers have been published in prestigious journals such as Nature, Science, Nature Nanotech., Nature Commun., Chem. Rev., Chem. Rev. Soc., Proc. Natl. Acad. Sci., Acc. Chem. Res., Phys. Rev. Lett, J. Am. Chem. Soc., Angew. Chem. Int. Ed., Chem. Eur. J., Org. Lett., J. Org. Chem., Phys. Rev., J. Chem. Phys., J. Phys. Chem., etc. (refer to: <http://csm.unist.ac.kr>). One book and twelve book chapters have been published [Marcel Dekker, Elsevier, American Science, World Scientific., etc..

- These papers have been well cited. Organic nanotubes and nanowires (*Science* 2001 and *JACS* 2001) and left handed helices (*JACS* 2001) were featured in *C&EN*. Extraction of thinnest carbon nanotubes (*PNAS* 2005) was featured in *Nature* (Materials website). Supermagnetism in graphene nanoribbon (*Nature Nanotech.* 2008) was featured in NPG Asia materials. Large scale graphene ultrathin films (*Nature* 2009a) which we collaborated with my former student (BH Hong) was featured in *New York Times* and cited in the official "Nobelprize.org" press release for the 2010 Nobel prize in physics. Near field focusing and magnification beyond the diffraction limit of the self assembled nanolenses was published (*Nature* 2009b), which was featured in *Laser Focus World*, *Nature Nanotech.*, *NPG Asia Materials* (*Nature Publ. Group*), *Technology Review* (MIT), *Chem. & Eng. News* (Am. Chem. Soc.), *Nanotechweb.org*

(*IOP*), and Korean television and newspapers. An ultrafast DNA sequencing method (*Nature Nanotech.* 2011) was featured in *NPG Asia Materials (Nature Publ. Group)*, magazines, newspapers and TV. Synthesis of 3rd type of Calix compounds (*Nature Commun.* 2013a) and highly active Pt-DNA-graphene catalysts for fuel cell (*Nature Commun.*2013b) was featured in newspapers.

Brief Summary of SCI Publications

Journals (IF): No. of publications: [Total: 463]

Nature (38.138): 2,	Science (34.661): 1,	Nature Nanotech. (35.267): 3,
Nature Commun. (11.329): 3,	Chem. Rev. (37.369): 3,	Chem. Soc. Rev. (34.090): 2,
Prog. Mater. Sci. (31.083): 1,	Acc. Chem. Res. (22.003): 2,	Adv. Mater. (18.960): 9,
Nano Lett. (13.779): 4,	ACS Nano (13.334):16,	J.Am.Chem.Soc. (13.038):28,
Angew. Chem. (11.709): 6,	Adv.Funct. Mater. (11.382):1,	Nano Energy (11.553): 1,
Proc.Nat.Acad.Sci. (9.423): 5,	Chem. Sci. (9.144):1,	Phys. Rev. X (8.701): 1,
Chem. Mater. (9.407): 1,	Phys. Rev. Lett. (7.645): 9,	J. Phys. Chem. Lett. (8.539): 5,
J. Mater. Chem. A (8.262): 4,	Nanoscale (7.760): 5,	Chem. Commun. (6.567): 6,
ACS Appl.Mater.Inter. (7.145):4,	Org. Lett. (6.732):13,	Carbon (6.198): 3,
Chem. Eur. J. (5.771):13,	Anal Chem (5.886): 1,	Sci. Rep. (5.228): 4,
J.Chem.Theor.Comput. (5.301):18,	Env. Sci. Tech. (5.393):1,	
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J. Phys.Chem. C (4.509): 9,	Inorg. Chem. (4.820): 1,	J. Org. Chem. (4.785):11,
Chem. Asian J. (4.592): 2,	Phys.Chem.Chem.Phys. (4.449):13,	CrystEngComm (3.849): 2,
RSC Adv. (3.289):3,	Nanotechnology (3.573):9,	Phys. Rev. B (3.718): 25,
J. Comput. Chem. (3.648):9,	Org. Biomol. Chem. (3.559):3,	Opt. Exp. (3.148): 2,
ChemPhysChem (3.138):1,	Appl. Phys. Lett. (3.142):4 ,	J. Phys. Chem. B (3.187):14,
Opt. Lett (3.040):1,	J. Struct. Biol (2.570):1,	J. Chem. Phys. (2.894):84,
Phys. Rev. A (2.765): 3,	Pure Appl. Chem. (2.615):1,	Tetrahedron (2.645): 2,
J. Phys. Chem. A (2.883): 30,	Tetrahedron Lett. (2.347):1,	Theor. Chem. Acc. (1.806): 2,
Bioorg.Med.Chem.Lett. (2.486):1,	Phys. Rev. E (2.252):2,	Curr. Appl. Phys. (2.144): 1,
Chem. Phys. Lett. (1.860):10,	Struct. Chem. (1.854): 1,	J. Mol. Graph. Model. (1.674): 2,
Mol. Phys. (1.837): 5,	Int. J. Quant. Chem. (2.184):1,	J. Mol. Struct. (1.780): 1,
J. Phys. Org. Chem. (1.515): 1,	J. Math. Phys. (1.234):1,	

Selected Papers:

[1] *Nature* 460, 498 (2009). [IF: 42.351; Corresponding Author; No. of citations: ~160].

Near-field focusing and magnification through self-assembled nanoscale spherical lenses,

J. Y. Lee, B. H. Hong, W. Y. Kim, S. K. Min, Y. Kim, M. V. Jouravlev, R. Bose, K. S. Kim, I.-C. Hwang, L. J. Kaufman, C. W. Wong, P. Kim, and K. S. Kim

Featured in *Laser Focus World*, *NPG Asia Materials (Nature Publ. Group)*, *Technology Review (MIT)*, *Chem. & Eng. News (Am. Chem. Soc.)*, *Nanotechweb.org(IOP)*, and Korean television and newspapers

[2] *Nature Nanotechnol.* 6, 162 (2011). [IF: 33.265; Corresponding Author; No. of citations: ~220].

Fast DNA sequencing with a graphene-based nanochannel device,

S. K. Min, W. Y. Kim, Y. Cho, K. S. Kim

Featured in *NPG Asia Materials (Nature Publ. Group)*. science news magazines, television and newspapers.

[3] *Nature Nanotechnol.* 3, 408 (2008). [IF: 33.265; Corresponding Author; No. of citations: ~450].

Prediction of very large values of magnetoresistance in a graphene nanoribbon device,

W. Y. Kim and K. S. Kim

Featured in *NPG Asia Materials (Nature Publ. Group)* and Korean newspapers

[4] *Science* 294, 348 (2001). [IF: 31.477; Corresponding Author; No. of Citations ~550].

Ultrathin Single-crystalline Silver Nanowire Arrays Formed in an Ambient Solution Phase,

B.H. Hong , S.C. Bae, C.-W. Lee, S. Jeong, and K.S. Kim

Featured in *Science and Chem. & Eng. News (Am. Chem. Soc.)*.

[5] *Nature* 457, 706 (2009). [IF: 42.351, coauthor; No. of Citations: ~4,900]

Large-scale pattern growth of graphene films for stretchable transparent electrodes,

K. S. Kim, Y. Zhao, H. Jang, S. Y. Lee, J. M. Kim, K. S. Kim, J.-H. Ahn, P. Kim, J.-Y. Choi, and B. H. Hong

Featured in *New York Times*, *Chem. & Eng. News (Am. Chem. Soc.)*, *Nanotechweb.org(IOP)*, etc.; cited in the official "Nobelprize.org" press release for the 2010 Nobel prize in physics.

- [6] *Nature Nanotechnol.* 5, 574 (2010). [IF: 33.265; coauthor; No. of Citations: ~3,300].
Roll-to-roll production of 30-inch graphene films for transparent electrodes,
S. Bae, H. Kim, Y. Lee, X. Xu, J.-S. Park, Y. Zheng, J. Balakrishnan, T. Lei, H. R. Kim, Y. I. Song, Y.-J. Kim, K. S. Kim, B. Ozyilmaz, J.-H. Ahn, B. H. Hong and S. Iijima
Featured in leading science magazines, Korean television and newspapers
- [7] *Nature Commun.* 4, 1797 (2013) [IF: 10.742; Corresponding Author; No. of Citations: ~30].
Calix[n]imidazolium as a new class of positively charged homocalix compounds,
Y. Chun, N. J. Singh, I.-C. Hwang, J. W. Lee, S. U. Yu, and K. S. Kim
- [8] *Nature Commun.* 4, 2221 (2013) [IF: 10.742; Corresponding Author; No. of Citations: ~50].
Stable Pt nanoclusters on genomic DNA-graphene oxide with a high oxygen reduction reaction activity.
J. N. Tiwari, K. Nath, S. Kumar, R. N. Tiwari, K.C. Kemp, N. H. Le, D. H. Youn, J. S. Lee, K. S. Kim
- [9] *Chem. Rev.* 100, 4145 (2000). [IF: 45.661; Corresponding Author; No. of Citations: ~800].
Molecular Clusters of π -Systems: Theoretical Studies of Structures, Spectra and Origin of Interaction Energies,
K. S. Kim, P. Tarakeshwar, J. Y. Lee
- [10] *Chem. Rev.* 112, 6156 (2012). [IF: 45.661; Corresponding Author; No. of Citations: >1000].
Functionalization of Graphene: Covalent and noncovalent approaches, derivatives and applications,
V. Georgakilas, M. Otyepka, A. B. Bourlinos, V. Chandra, N. Kim, K. C. Kemp, P. Hobza, R. Zboril, and K. S. Kim
- [11] *Chem. Soc. Rev.* 35, 355 (2006). [IF: 30.425; Corresponding Author; No. of Citations: ~600].
Imidazolium Receptors for the Recognition of Anions, J. Yoon, S. K. Kim, N. J. Singh and K. S. Kim
- [12] *ACS Nano* 4, 3979 (2010). [IF: 12.033; Corresponding Author; No. of Citations: ~700].
Water Dispersible Magnetite-Reduced Graphene Oxide Composites for Arsenic Removal,
V. Chandra, J. Park, Y. Chun, J. W. Lee, I.-C. Hwang, K. S. Kim
Featured in many science news magazines, television and newspapers.
- [13] *ACS Nano* 8, 1827 (2014). [IF: 12.033; Corresponding Author; No. of Citations: ~20].
Two Dimensional Molecular Electronics Spectroscopy for Molecular Fingerprinting, DNA Sequencing and Cancerous DNA Recognition,
A. C. Rajan, M. R. Rezapour, J. Yun, Y. Cho, W. J. Cho, S. K. Min, G. Lee, and K. S. Kim
- [14] *Phys. Rev. Lett.* 112, 157802 (2014) [IF: 7.728; Corresponding Author; No. of Citations: ~10].
Limit of metastability for liquid and vapor phases of water,
W. J. Cho, J. Kim, J. Lee, T. Keyes, J. E. Straub, K. S. Kim.
- [15] *J. Am. Chem. Soc.* 123, 10748 (2001) IF: 11.444; Corresponding Author; No. of Citations: ~250].
Self-Assembled Arrays of Organic Nanotubes with Infinitely Long One-Dimensional H-Bond chains,
B. H. Hong, J. Y. Lee, C.-W. Lee, J. C. Kim, S. C. Bae, and K. S. Kim
- [16] *Proc. Nat. Acad. Sci.* 112, 14156 (2015). High Temperature in-situ Crystallographic Observation of Reversible Gas Sorption in Impermeable Organic Cages. S. B. Baek, D. Moon, R. Graf, W. J. Cho, S. W. Park, T.-U. Yoon, S. J. Cho, I.-C. Hwang, Y.-S. Bae, H. W. Spiess, H. C. Lee, K. S. Kim.
- [17] *Chem. Rev.* 116, 5464 (2016). Non-Covalent Functionalization of Graphene and Graphene Oxide for Energy Materials, Biosensing, Catalytic, and Biomedical Applications, V. Georgakilas, J. Tiwari, K. C., Kemp, J. Perman, A. Bourlinos, K. S. Kim, R. Zboril.
- [18] *Nature Commun.* 7, 13115 (2016). Engineering structure-mechanism-based chemical regulators for distinct pathological factors in Alzheimer's disease, M. Beck , J. Derrick , R. Kerr , S. B. Oh , W. J. Cho , S. J. Lee , Y. Ji , J. Han, Z. Tehrani, N. Suh, S. Kim, S. Larsen, K. S. Kim, J.-Y. Lee, B. Ruotolo, M. H. Lim.
- [19] *J. Phys. Chem. Lett.* 7, 2478 (2016). Electron Transport in Graphene Nanoribbon Field-Effect Transistor under Bias and Gate Voltages: Iso-Chemical Potential Approach, J. Yun, G. Lee, K. S. Kim.

List of (SCI) Publications

- <http://csm.unist.ac.kr> (Center), <http://www.researcherid.com/rid/C-7538-2012> (ISI)
1. T. Yoon, K. S. Kim, One step synthesis of CoS-doped β -Co(OH)₂@amorphous MoS_{2+x} hybrid catalyst grown on nickel foam for high performance electrochemical overall water splitting, *Adv. Funct. Mater.* (in press).
 2. M. Beck , J. Derrick , R. Kerr , S. B. Oh , W. J. Cho , S. J. Lee , Y. Ji , J. Han, Z. Tehrani, N. Suh, S. Kim, S. Larsen, K. S. Kim, J.-Y. Lee, B. Ruotolo, M. H. Lim, Engineering structure-mechanism-based chemical regulators for distinct pathological factors in Alzheimer's disease, *Nature Commun.* 7, 13115 (2016). doi:10.1038/ncomms13115
 3. H. Park, S. Choi, P. Lee, J. Kim, M. Ryu, K. S. Kim, J. Chung, Band and Bonding Characteristics of N₂⁺ Ion-Doped Graphene. *RSC Adv.* 6, 84959-84964 (2016). DOI: 10.1039/C6RA19511C
 4. Seong Kyu Kim, Wenzhou Chen, Saeed Pourasad, and Kwang S. Kim, Two-Dimensional Icy Water Clusters Between a Pair of Graphene-Like Molecules or Graphene Sheets, *J. Phys. Chem. C* 120, 19212–

- 19224 (2016).
5. V. Vij, J. N. Tiwari, and K. S. Kim, Covalent vs. Charge Transfer Modification of Graphene/Carbon-Nanotubes with Vitamin B1: Co/N/S-C Catalyst towards Excellent Oxygen Reduction. *ACS Appl. Mater. Interf.* 29, 16045-16052 (2016). DOI: 10.1021/acsami.6b03546
 6. G. Shi, Z. A. Tehrani, D. Kim, W. J. Cho, I. S. Youn, H. M. Lee, M. Yousuf, N. Ahmed, B. Shirinfar, A. J. Teator, D. N. Lastovickova, L. Rasheed, M. S. Lah, C. W. Bielawski, K. S. Kim, Halides with Fifteen Aliphatic C-H...Anion Interaction Sites. *Sci. Rep.* 22, 30123 (2016).
 7. L. Rasheed, M. Yousuf, I. S. Youn, G. Shi, K. S. Kim, An Efficient Non-Reaction Based Colorimetric and Fluorescent Probe for Highly Selective Discrimination of Pd⁰ and Pd²⁺ in Aqueous Media. *RSC Adv.* 6, 60546-60549 (2016).
 8. J. Yun, G. Lee, K. S. Kim, Electron Transport in Graphene Nanoribbon Field-Effect Transistor under Bias and Gate Voltages: Iso-Chemical Potential Approach. *J. Phys. Chem. Lett.* 7, 2478-2482 (2016). DOI: 10.1021/acs.jpcllett.6b00996
 9. T.-H. Han, S.-J. Kwon, N. Li, H.-K. Seo, W. Xu, K. S. Kim, T.-W. Lee, Versatile p-Type Chemical Doping to Achieve Ideal Flexible Graphene Electrodes, *Angew. Chem. Int. Ed.* 55, 6197-6201 (2016). DOI: 10.1002/anie.201600414R1
 10. M. Yousuf, I. S. Youn, J. Yun, L. Rasheed, R. Valero, G. Shi, K. S. Kim, Violation of DNA Neighbor Exclusion Principle in RNA Recognition. *Chem. Sci.* 7, 3581-3588 (2016). DOI: 10.1039/C5SC03740A
 11. M. Filatov, T. J. Martinez, K. S. Kim, Using the GVB Ansatz to develop ensemble DFT method for describing multiple strongly correlated electron pairs. *Phys. Chem. Chem. Phys.* 18, 21040-21060 (2016). DOI: 10.1039/C6CP00236F
 12. A. D. DeAngelis, K. C. Kemp, N. Gaillard, K. S., Kim, Antimony(III) sulfide thin films as a photoanode material in photocatalytic water splitting, *ACS Appl. Mat. Interf.* 8, 8445-8451 (2016)..
 13. V. Georgakilas, J. Tiwari, K. C., Kemp, J. Perman, A. Bourlinos, K. S. Kim, R. Zboril, Non-Covalent Functionalization of Graphene and Graphene Oxide for Energy Materials, Biosensing, Catalytic, and Biomedical Applications, *Chem. Rev.* 116, 5464-5519 (2016).
 14. S. Y. Willow, X. C. Zeng, S. S. Xantheas, K. S. Kim, S. Hirata, Why Is MP2-Water “Cooler” and “Denser” than DFT-Water? *J. Phys. Chem. Lett.* 7, 680-684 (2016).
 15. V. Vij, J. N. Tiwari, W.-G. Lee, T. Yoon, K. S. Kim, Hemoglobin-carbon nanotube derived noble-metal-free Fe₅C₂-based catalyst for highly efficient oxygen reduction reaction, *Sci. Rep.* 6, 20132 (2016). doi: 10.1038/srep20132.
 16. Z. A. Tehrani, K. S. Kim, Functional Molecules and Materials by π -interaction Based Quantum Theoretical Design, *Int. J. Quant. Chem.* 116, 622-633 (2016).
 17. I. S. Youn, W. J. Cho, K. S. Kim, Effects of an Electric Field on Interaction of Aromatic Systems, *J. Comput. Chem.* 37, 971-975 (2016)..
 18. J. N. Tiwari, V. Vij, K. C. Kemp, K. S. Kim, Engineered Carbon-Nanomaterial Based Electrochemical Sensors for Biomolecules, *ACS Nano* 10, 46-80 (2016). DOI: 10.1021/acsnano.5b05690
 19. S. W. Han, W. S. Yun, J. D. Lee, Y. H. Hwang, J. Baik, H. J. Shin, W. G. Lee, Y. S. Park, and K. S. Kim, Hydrogenation-induced atomic stripes on the 2H-MoS₂ surface. *Phys. Rev. B* 92, 241303(R) (2015).
 20. P. Lee, K.-H. Jin, S. J. Sung, J. G. Kim, M.-T. Ryu, H.-M. Park, S.-H. Jhi, N. Kim, Y. Kim, S. U. Yu, K. S. Kim, D. Y. Noh, J. Chung, Proximity Effect Induced Electronic Properties of Epitaxial Graphene on Bi₂Te₂Se, *ACS Nano* 9, 10861-10866 (2015).
 21. M. Shabagi, H. W. Lee, T. Stauber, K. S. Kim, Drift-induced modifications to the dynamical polarization of graphene, *Phys. Rev. B* 92, 195429 (2015).
 22. S. B. Baek, D. Moon, R. Graf, W. J. Cho, S. W. Park, T.-U. Yoon, S. J. Cho, I.-C. Hwang, Y.-S. Bae, H. W. Spiess, H. C. Lee, K. S. Kim, High-Temperature in situ Crystallographic Observation of Reversible Gas Sorption in Impermeable Organic Cages, *Proc. Nat. Acad. Sci.* 112, 14156-14161 (2015).
 23. S. K. Kim, H. M. Lee, K. S. Kim, Disulfuric acid dissociated by two water molecules: Ab initio and density functional theory calculations, *Phys. Chem. Chem. Phys.* 17, 28556-28564 (2015). (back cover)
 24. H. Kim, V. D. Doan, W. J. Cho, R. Valero, Z. A. Tehrani, J. M. L. Madriderjos, K. S. Kim, Intriguing Electrostatic Potential of CO: Negative Bond-ends and Positive Bond-cylindrical-surface. *Sci. Rep.* 5, 16307 (2015).
 25. L. Rasheed, M. Yousuf, I. S. Youn, T. Yoon, K.-Y. Kim, Y.-K. Seo, G. Shi, J.-H. Hur, K. S. Kim, Turn-on Ratiometric Fluorescent Probe for Selective Discrimination of Cr³⁺ from Fe³⁺ in Aqueous Media for Living Cell Imaging, *Chem. Eur. J.* 46, 0000- (2015).
 26. S. Y. Willow, M. A. Salim, K. S. Kim, S. Hirata, Ab initio molecular dynamics of liquid water using embedded fragment second-order many-body perturbation theory towards its accurate property prediction. *Sci. Rep.* 5, 14358 (2015).

27. C. K. Kemp, S. B. Baek, W. G. Lee, M. Meyyappan, K. S. Kim, Activated carbon derived from waste coffee grounds for stable methane storage. *Nanotech.* 26, 385602 (2015).
28. B. Park, J. Park, J. G. Son, Y.-J. Kim, S.-U. Yu, H. J. Park, D.-H. Chae, J. Byun, G. Jeon, S. Huh, S.-K. Lee, A. Mishchenko, S. Hyun, T. G. Lee, S. W. Han, J.-H. Ahn, Z. Lee, C. Hwang, K. S. Novoselov, K. S. Kim, B. H. Hong, J. K. Kim, A Facile Route for Patterned Growth of Metal-Insulator Carbon Lateral Junction through One-pot Synthesis, *ACS Nano*, 9, 8352-8360 (2015). DOI 10.1021/acsnano.5b03037
29. Y. S. Park, G. Lee, M. Holmes, C. C. S. Chan, B. Reid, J. A. Alexander-Webber, R. J. Nicolas, R. Taylor, K. S. Kim, S. W. Han, W. Yang, Y. Jo, J. Kim, H. Im, Surface Effect Induced Optical Bandgap Shrinkage in GaN Nanotubes, *Nano Lett.*, 15, 4472-4476 (2015). DOI: 10.1021/acs.nanolett.5b00924
30. H. M. Lee, K. H. Lee, G. Lee, and K. S. Kim, Geometrical and Electronic Characteristics of Au_nO_2^- ($n=2-7$), *J. Phys. Chem. C* 119, 14383-14391 (2015). DOI 10.1021/acs.jpcc.5b03051
31. C. Hyun, J. Yun, W. J. Cho, C. W. Myung, J. Park, G. Lee, Z. Lee, K. Kim, and K. S. Kim, Graphene Edges and Beyond: Temperature Driven Structures and Electromagnetic Properties. *ACS Nano* 9, 4669-4674 (2015).
32. M. Saleh and K. S. Kim, Highly selective CO_2 adsorption performance of carbazole based microporous polymers, *RSC Adv.* 5, 41745-41750 (2015).
33. H. H. Kim, B. Kang, J. W. Suk, N. Li, K. S. Kim, R. S. Ruoff, W. H. Lee, K. Cho, Clean Transfer of Wafer-Scale Graphene via Liquid Phase Removal of Polycyclic Aromatic Hydrocarbons, *ACS Nano* 9, 4726-4733 (2015).
34. H. M. Lee, I. S. Youn, M. Saleh, J. W. Lee, K. S. Kim, Interactions of CO_2 with various functional molecules, *Phys. Chem. Chem. Phys.* 17, 10925-10933 (2015). DOI: 10.1039/C5CP00673b
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3. B. H. Hong, J. Y. Lee, P. Kim, and K.S. Kim, "Growth and applications of ultralong carbon nanotubes", Patent No : US 8,080,281 B2, Registration Date : 2011.12.20, Application No:12/412,984, Country Registered: USA [USA Patent No, : PCT/US2007/020778 (60/848,023); (2007.9.27)]
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Invited/Keynote/Plenary Talks and Organizing Chairs of International Conferences (since 1998)

1. "Structures and energetics of molecular clusters: Theoretical insights", International Conference on "Chemistry of Small Manybody System", Tokyo, Japan, Dec. 4-6, 1998.
2. "Ionophores and Receptors Using Cation- π Interactions: Collarenes", CBM-IFOC Joint Symposium, Pohang, Korea, Nov. 27-28, 1998.
3. "Theoretical Studies on the Photochromic Activity of Diarylethylene Photoswitch Molecules", 8th Korea-Japan Joint Symposium: Molecular Science, Taejon, Korea, Jan. 7-9, 1999.
4. "Conformational vibrational effects of electrons and halide anions on water clusters", Div. of Phys. Chem. 218th ACS Natl. Meeting, New Orleans, USA, Aug. 22-26, 1999.
5. "Conformational vibrational effects of electrons and halide anions on water clusters", 8th Asian Chemical Congress, Taipei, Taiwan, Nov. 21-24, 1999.
6. "Structures, energetics, and spectra of hydrated electrons and hydrated halide anions: Ab initio study", Institute for Molecular Science, Okazaki, Japan, Dec. 19-22, 1999.
7. "Computational Investigation of Interaction Forces and their Importance in Molecular Recognition", Workshop on Computational Chemistry, Hong Kong, Feb. 21-23, 2000.
8. "Nature of weakly bound complexes of π -systems: Comparison with H-bonded complexes", Gordon Research Conference: Molecular Ionic Clusters (MIC 2000), Toulouse, France, April. 16-21, 2000.
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10. "Aqueous Clusters of Electrons, Halide Anions, and π Systems", Water in Confined Geometries, Telluride, Colorado, USA, Jul. 30-Aug. 5, 2000.
11. "Theoretical Investigations of Ion solvation, Ionophore-Ion Interactions, and Receptor-substrate Interactions", 16th IUPAC Conference, Halifax, Canada, Aug. 6-11, 2000.
12. "Solvation Phenomena: Lessons from Theoretical Investigations of Aqueous Clusters of Electrons, Ions and π -Systems", Symposium on Solvated Molecules and Ions: from Clusters to Condensed Phases PacifiChem 2000, Honolulu, Hawaii, USA, Dec. 14-19, 2000.
13. "Self-assembled nanotubes and silver subnanowire arrays formed in and ambient solution phase", The First Korean-Swedish Bilateral Symposium, Seoul, Korea, Nov. 5-7, 2001.
14. "Catalytic role of enzymes: partial proton shuttles and charge redistributions", The 9th Korea-Japan Joint Symposium, Okazaki, Japan, Jan. 10-12, 2001.
15. **[plenary talk]** "De novo design of functional molecules, nanomaterials, and nanodevices", 11th Current Trends for Computational Chemistry, Jackson State Univ. USA (Nov. 1-2, 2002).
16. **[keynote speaker]** "De novo design of functional nano-materials and molecular devices", 6th World Congress of Theoretically Oriented Chemists, Lugano, Switzerland (Aug. 4-9, 2002).
17. "Theoretical investigations of self-assembly in organic nanotube", 223rd Am. Chem. Soc. (ACS) National Meeting, Orlando, FL, USA (April 7-11, 2002).
18. "Theoretical Insights into the kaleidoscopic world of gas phase clusters and nanomaterials", 10th Korea-Japan Joint Symposium on Theoretical/Computational Chemistry, Postech (Jan 12-15, 2003).
19. "De novo design of functional nano-materials and molecular devices", 225th Am. Chem. Soc. (ACS) National Meeting, New Orleans, LA, USA (Mar. 23-27, 2003).
20. "Theory, Modeling and Simulation," International Conference on Materials for Advanced Technologies (ICMAT 2003), Singapore, 2003 (Dec. 10-13, 2003).
21. **[plenary talk]** "Nanomaterials and Molecular Devices: Theoretical Exploration",

- "Theory and Application of Computational Chemistry", Gyeongju, Korea (Feb. 15-20, 2004).
22. "Molecular Hosts for Anion Binding", 227th ACS Nat. Meeting, Anaheim, CA, USA (Mar.28-Apr.1, 2004).
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24. "Theoretical design and experimental realization of nanomaterials and nanodevices", Computer Modeling and Simulating Materials Nanoworld, Sicily, Italy (May 30-June 4, 2004).
25. [plenary talk] "Design of Functional Molecules and molecular devices", 15th Molecular Electronics and Devices Symposium, Postech (June 17-18, 2004).
26. "Theoretical Design of Ion Receptors", 228th ACS Nat. Meeting, Philadelphia, PA, USA (Aug.22-26, 2004).
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28. [plenary talk] "Functional molecules/materials and nanosensors: De Novo Design Approach based on Nanorecognition", 45th Sanibel Symposium, St. Simon's Island, GA, USA (Mar 5-11, 2005).
29. "Assembling Phenomena of water-containing clusters and the design of ion-selective receptors", 229th ACS Nat. Meeting, San Diego, CA, USA (Mar 13-17, 2005).
30. "Design of ion selectivity receptors ", 3rd International Symposium on Calix-Supramolecular Chemistry, Dankook Univ., Seoul (Aug. 26, 2005).
31. "Ab initio study of structures and dynamics of molecular clusters toward the design of nanosensors", Symposium of Computational Quantum Chemistry; Methodology and Application, PacifiChem 2005, Honolulu, Hawaii, USA (Dec. 15-20, 2005).
32. "De novo design of functional nanomaterials based on nanorecognition", Symposium of Design of Nanomaterials and Nanodevices, PacifiChem 2005, Honolulu, Hawaii, USA (Dec. 15-20, 2005).
33. "Theoretical design of functional nanomaterials and nanodevices", 12th International Conference of Quantum Chemistry (ICQC-2006), Kyoto, Japan (May 21-26, 2006).
34. "Structures, dynamics, and spectra of hydrated molecular clusters", Sendai International Conference, Sendai, Japan (May 29-30, 2006).
35. [plenary talk] "De Novo Design Approach Based on Nanorecognition: Functional Molecules/Materials and Nanosensors/Nanodevices", 18th International Conference on Physical Organic Chemistry (ICPOC-18), Warsaw, Poland (Aug. 20-25, 2006).
36. "Quantum Conductance of Silver Nanowires and Linearization of Atomic Gold Chains" 234th ACS Nat. Meeting, Boston, USA (Aug. 19-23, 2007).
37. "Quantum Conductance of Magic Structures of Metal Nanowires and Design of Stable Linear Single Atomic Chains", 3rd APCTCC Meeting, Beijing, China (Sept. 22-26, 2007).
38. "Magic Structures and Quantum Conductance of Nanowires and Negative Differential Resistance of Molecular Electronic Devices", Korean Chem. Soc. Meeting, Taegu, Korea (Oct. 18-19, 2007).
39. [plenary talk] "Magic Structures and Quantum Conductance of Linear Ultrathin Nanowires and Negative Differential Resistance of Molecular Wires", 16th Current Trends for Computational Chemistry, Jackson State Univ. USA (Nov. 2-3, 2007).
40. "Quantum Conductance in Ultrathin Nanowires, Negative Differential Resistance in Molecular Wires, and Giant Magnetoresistance in Graphene Nanoribbon Devices", 1st International Conference of the Grand Challenge to Next Generation Integrated Nanoscience, Tokyo, Japan (June 3-7, 2008).
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50. K. S. Kim, “Molecular Electronics and Spintronics”, The 2nd KIAS International Symposium on Recent Progress in Computer Simulations in Molecular Sciences, KIAS, Seoul (June 14-16, 2009).
51. K. S. Kim, “Electrode characteristics and super-magneto-resistance in graphene nanoribbon devices”, KIAS Graphene Workshop, KIAS, Seoul (June 29- July 2, 2009).
52. K. S. Kim, “Synthesis of nanolens“, Web lecture, Korea NanoTechnology Research Society (KoNTRS) (Sept 28, 2009).
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56. K. S. Kim, “Molecular Assembly Based Nano-Electronics/Spintronics and Nano-Optics”, Asian Pacific Conference of Theoretical and Computational Chemistry (APCTCC-4) Port Dickson, Malaysia (Dec. 21-23, 2009).
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58. K. S. Kim, Ulsan Chemistry Day, Ulsan (March 19, 2010).
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60. K. S. Kim, “Theoretical design of functional molecules and nano-electronic/spintronic/optical materials”, Molecular Quantum Mechanics 2010, Univ. of California, Berkeley, USA (May 24-29, 2010).
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62. [keynote speaker] K. S. Kim, “Present and Prospects of Nano-Chemistry Research”, 2010 KRF Fundamental Science & Technology Research Workshop, Taejeon (June 25, 2010).
63. K. S. Kim, Theoretical Understanding of Nano-electronics/spintronics and Nano-optics, International Conference in Honor of Prof. Jean-Marie, Namur, Belgium (July 5-8, 2010).
64. [keynote speaker] K. S. Kim, “Nano-sensing, Nano-electronics/spintronics, and Nano-optics”, WCU 2nd International Symposium on IT Convergence Engineering, Postech, Pohang (Aug 19-20, 2010).
65. [plenary speaker] K. S. Kim, “Functional Molecules/Materials, Nano-electronics/spintronics, and Nano-optics”, The Twentieth International Conference on Physical Organic Chemistry : ICPOC-20, Bexco, Busan (Aug 22-24, 2010).
66. [keynote speaker] K. S. Kim, International Union of Materials Research Societies - International Conference on Electronic Materials 2010 (IUMRS-ICEM2010), Computational Design for Next Generation Electronic Materials, Kintex, Seoul (Aug 24-27, 2010).
67. [keynote speaker] K. S. Kim, "Seeking Solutions to Mathematical and Physical Problems in Frontier Chemical Science", Inaugural symposium of Institute of Edge Science, Postech, Pohang (Sept 10, 2010).
68. K. S. Kim, “Carbon-based materials towards futuristic electronic devices and greener environments”, Korean Carbon Society, Postech, Pohang (Nov. 5-6, 2010).

69. K. S. Kim, "Functional Nanomaterials, Nano-electronics/spintronics, and Nano-optics", Tokyo Tech – Tsinghua University Joint Symposium, Fuji-Yoshida, Japan (Nov. 11-13, 2010).
70. K. S. Kim, "Nanoscale optical lenses and plasmonic components toward integrated optical nano-devices", Nanotechnology Forum 2010, SAIT, Yongin (Nov. 12, 2010).
71. [plenary speaker] K. S. Kim, "Functional Molecules/Materials, Nano-electronics, and Nano-optics", NanoThailand: Nanotechnology for a Sustainable World, Bangkok, Thailand (Nov. 18-20, 2010).
72. K. S. Kim, "Study of electron transport phenomena in molecular electronics/spintronics based on density functional theory coupled to non-equilibrium Green function theory", Symposium #10: Computational Quantum Chemistry: Theory and Interactions with Experiment, PacifiChem 2010, Hawaii, USA (Dec. 15-20, 2010).
73. H. M. Lee, N. J. Singh, K. S. Kim, "Ab initio study of structures and dynamics of molecular clusters toward the design of functional molecules and nanomaterials", Symposium #81: Challenges and Solutions to Accurate Calculations on Large Molecular Systems, PacifiChem 2010, Hawaii, USA (Dec. 15-20, 2010).
74. [plenary speaker] "Functional Nanomaterials, Nano-electronics/spintronics, and Nano-optics", 2nd Nanoscience & Nanotechnology Global Research Lab Symposium (GRL-NT Symposium), Seoul (Feb 22., 2011)
75. [plenary speaker] K. S. Kim, "Functional Materials, Nanoptics, Molecular Electronics, and Ultrafast DNA Sequencing", Campus Asia Symposium, Shanghai Jia Tong Univ., Shanghai, China (March 10-12, 2011)
76. K. S. Kim, "Special Lecture on Nanoscience", Kyungbuk Science Education Center, Pohang (March 26, 2011).
77. K. S. Kim, "Molecular Electronics and Ultrafast DNA sequencing", Illumina Inc. San Diego, USA (April 5, 2011).
78. K. S. Kim, Mulliken Lecture, Univ of Georgia, Athens, USA (April 9, 2011).
79. [plenary speaker] K. S. Kim, "Ultrafast DNA sequencing", International Conference on Molecular Electronics and Devices (22nd IC ME&D) Pohang (May 19-20, 2011).
80. K. S. Kim, "Nanoelectronics/spintronics and Ultrafast DNA sequencing, International Conference of Materials for Advanced Technologies ICMAT 2011, Singapore (June 26-July 1)
81. K. S. Kim, "Ultrafast DNA Sequencing and Nano-Optics/Photonics", WATOC 2011, Satiago de Compostela, Spain (July 17-22, 2011).
82. K. S. Kim, "Molecular Electronics and ultrafast DNA sequencing", Fukui International Symposium for Theoretical Chemistry (FISTC), Kyoto, Japan (August 31-Sept 1, 2011).
83. K. S. Kim, "Molecular electronics and ultrafast DNA Sequencing", 7th Congress of the International Society for Theoretical Chemical Physics (ISTCP-VII), Waseda Univ. Tokyo, Japan (Sept. 2-8, 2011).
84. K. S. Kim, Carbon-based Spintronics: *spin injection and manipulation in organic molecules, carbon nanotubes and graphene* (cspin11), Max Planck Institute for the Physics of Complex Systems, Dresden, Germany (Oct. 24-27, 2011).
85. [plenary speaker] K. S. Kim, Functional Molecules, Nano-Electronics/Spintronics/Photonics, and Ultrafast DNA Sequencing, 20th Conferences on Current Trends in Computational Chemistry (CCTCC), Jackson, Miss. USA (Oct. 27-29, 2011).
86. [keynote speaker] K. S. Kim, Molecular electronics and ultrafast DNA sequencing, SWOCS III. Pohang (Nov. 19, 2011).
87. [keynote speaker] K. S. Kim, Molecular Sensing, Nano-Electronics/Photonics, and Ultrafast DNA Sequencing, 5th Asian Pacific Conerence of Theoretical & Computational Chemistry (APCTCC), Rotorua, New Zealand (Dec. 9–13, 2011).
88. K. S. Kim, Nano- electronics/spintronics and ultrafast DNA sequencing, CECAM-Workshop, Univ. of Hong Kong (Dec. 12-16, 2011).
89. K. S. Kim, Graphene Based Ultrafast DNA Sequencing – 2-Dimensional Conductance, 243th ACS National Meeting , (San Diego, Mar 25-29, 2012).
90. K. S. Kim, Molecular Electronics Based Ultrafast DNA Sequencing, CECAM DNA workshop 2012, (Pisa, Italy June 11-13, 2012).
91. K. S. Kim, Efficient electron dynamics based on planewave-based real-time time-dependent density functional theory: vibronic electronic spectra, and coupled electron-nucleus dynamics, UCLA ICQC Satellite Symposium, QM and MD of Organic and Biological Reactivity, UCLA, LA, USA (June 21-23, 2012).
92. K. S. Kim, Nano- electronics/spintronics and ultrafast DNA sequencing, International Conference on

- Theoretical and High Performance Computational Chemistry 2012 (CT-HPCC12), Nanjing (July 8-11, 2012).
93. [**plenary** speaker] K. S. Kim, Molecular Electronics/Spintronics/Nano-Photonics, and Ultrafast DNA Sequencing, Nano Korea 2012 Symposium, 10th International Nanotech Symp & Nanoconvergence Expo, Coex, Seoul (Aug. 16-18, 2012).
 94. K. S. Kim, Molecular Electronics, Nano-Photonics, and Ultrafast DNA Sequencing, Theory and Applications in Computational Chemistry, TACC-2012, Italy (Sept. 2-7, 2012).
 95. K. S. Kim, Nature of various π interactions and harnessing to nano/bio systems, van der Waals Interactions in Complex Materials, CECAM HQ, Lausanne, Switzerland (Oct. 15-19, 2012).
 96. K. S. Kim, Molecular Electronics Based Ultrafast DNA Sequencing, Pioneer Workshop on Nanopore 2013, Seoul Nat. Univ., Seoul (Feb. 21-23, 2013).
 97. K. S. Kim, Various π interactions for nano and bio systems, Accurate Characterization of Noncovalent Interactions: From Small Molecules to Supramolecular Chemistry, 245th ACS National Meeting, New Orleans, USA (Apr. 7-11, 2013).
 98. K. S. Kim, Molecular Electronics Spectroscopy and Fast DNA Sequencing, Novel Approaches to DNA Sequencing, Stockholm, Sweden (June 10-14, 2013).
 99. [**keynote** speaker] K. S. Kim, Fano Resonance Driven Molecular Electronics Spectroscopy and Fast DNA Sequencing, APCTCC-6, Gyeongju, Korea (July 10-13, 2013).
 100. K. S. Kim, Graphene for Electronics/Spintronics, Single Molecule Spectroscopy and Fast DNA Sequencing; Functionalized Graphene for Water Remediation, Fuel Cells, and Energy Materials/Devices 2D-Day Symposium: Graphene and beyond, Postech (Aug. 23, 2013).
 101. [**keynote** speaker] K. S. Kim, Graphene for Electronics/Spintronics, Single Molecule Spectroscopy and Fast DNA Sequencing; International conference NANOCON'13, Brno, Czech. (October 16-18, 2013).
 102. K. S. Kim, Remarkable oxygen reduction catalytic capacity of Pt nanoclusters and nanodendrites in genomic-DNA/reduced-graphene-oxide hybrid materials, International Conference on Small Science (ICSS 2013) Las Vegas, USA (Dec. 15-18, 2013).
 103. K. S. Kim, Two dimensional Molecular Electronics Spectroscopy for Molecular Fingerprinting and DNA Sequencing, Pioneer Workshop 2014 on nanopore and nanofluidics –Physics and application as Biodevices, Osaka Univ. Japan (Feb. 7-8, 2014).
 104. K. S. Kim, Eco-friendly Futuristic Energy Materials and Devices, UNIST BK21+ Symposium, Ulsan, Korea (Feb. 7-13, 2014).
 105. K. S. Kim, Two Dimensional Molecular Electronics Spectroscopy for Molecular Fingerprinting, DNA Sequencing, and Cancerous DNA Recognition, International Workshop on Computational Quantum Chemistry in honor of Professor Jean-Marie Andre for his 70th anniversary, Tsinghua Univ., Beijing, China (March 31- April 1, 2014).
 106. [**keynote** speaker] K. S. Kim, Two Dimensional Molecular Electronics Spectroscopy for Molecular Fingerprinting, DNA Sequencing, and Cancerous DNA Recognition, Korean Chemical Society (April 17, 2014).
 107. K. S. Kim, Evaporation and condensation of metastable states of water, International Symposium on Frontiers of Theoretical and Computational Chemistry, Shenzhen, China (May 5- 6, 2014).
 108. K. S. Kim, Remarkable oxygen reduction catalytic capacity of Pt nanoclusters and nanodendrites in Pt/DNA/reduced-graphene-oxide hybrid materials, Collaborative Conference on Materials Research (CCMR) 2014, Incheon (June 23-26, 2014).
 109. [**plenary** speaker] K. S. Kim, Organic and Graphene Based Nanomaterials and Nanodevices, ICSM2014, Turku, Finland (June 30-July 5, 2014).
 110. J. N. Tiwari, K. S. Kim, Energy delivery and enhanced catalytic activity by graphene and bio-organic hybrid materials, Graphene and Organic Hybrid Division, 15th International Conference on Organized Molecular Films (ICOMF 2014 (LB15)), Jeju (July 9-11, 2014).
 111. K. S. Kim, Two Dimensional Molecular Electronics Spectroscopy for Molecular Fingerprinting and DNA Sequencing, WATOC 2014, Santiago, Chile, (Oct. 5-10, 2014).
 112. K. S. Kim, Nano-Bio-Info fused science and technology, Educational program for new executives and maters, Samsung Electronics, Suwon, Korea (Jan. 28, 2015).
 113. [**keynote** speaker] K. S. Kim, Electronic/spintronic devices, spectroscopy, and dynamics, 5th

- Symposium/Workshop of Computational Sciences (SWOCS5), Postech, Pohang, Korea (Feb. 3, 2015).
114. K. S. Kim, Nano-Bio-Info fused science and technology, 2014 Art-Design STEM Program, UNIST, Ulsan, Korea (Feb. 10, 2015).
 115. [plenary speaker] K. S. Kim, Electronic/spintronic transport, spectroscopy, and dynamics, 15th International Congress of Quantum Chemistry (ICQC), Beijing, China (June 8-13, 2015).
 116. [keynote speaker] K. S. Kim, Electronic Transport, Spectroscopy, and Dynamics, Current Status of Computational Chemistry, IUPAC-2015, 45th World Chemistry Congress, BEXCO, Busan (Aug 9-12, 2015).
 117. K. S. Kim, Organic/Graphene Based Nanomaterials and Nanodevices 2015 ChemComm Symposia, UNIST, (Aug. 12-13, 2015).
 118. K. S. Kim, Past, Present, and Future of Computational Quantum Chemistry: Korea vs World, Korean Chemical Society Meeting, Oct. 13-15, 2015.
 119. K. S. Kim, Anisotropic noncovalent interactions in molecular assembly and collective properties in condensed phase, PacifiChem, Honolulu, Dec. 15-20, 2015.
 120. K. S. Kim, Collective Properties and Liquid-Vapor Phases of Water, APCTCC7, Taiwan, Jan 25-28, 2016.
 121. K. S. Kim, Electronic/Spintronic Transport, Spectroscopy, and Dynamics, 251st ACS National Meeting, San Diego, Mar. 13-17, 2016.
 122. [plenary speaker] K. S. Kim, Organic/Graphene Based Nanomaterials and Nanodevices, 2nd International Conference on Smart Materials & Surfaces, SMS Korea, Incheon, 2016. Mar. 23-25, 2016.
 123. K. S. Kim, Carbon/Graphene Based Nanomaterials/Nanodevices & Beyond: Electronic/Spintronic Transport & Spectroscopy, Low Dimensional Conference, Tabriz. May 22-23.2016.
 124. K. S. Kim, Nano-Bio Fused Science: Nano-optics, Photonics and Energy Materials. Low Dimensional Conference, Tabriz. May 22-23.2016.
 125. [plenary speaker] K. S. Kim, Carbon Based Nanomaterials/devices, Nanotech France, Paris, June 1-3, 2016.
 126. K. S. Kim, Electron/spin transport in molecular electronics/spintronics devices, TACC 2016, Seattle, Aug. 25-Sep 3. 2016.
 127. K. S. Kim, Graphene spintronics, Las Vegas, EMN Conference (Spintronics), Oct 11-13, 2016.

*** To be presented:

*** Invited talks at many foreign universities and national laboratories ***:

- (1) "July-Aug. 2002": Max Plank Inst. (Mainz) Univ. Frankfurt Univ. Bonn; Acad. of Sci. Czech Republic.
- (2) "Oct. 2002": Univ. Illinois (Urbana-Champaign); Northwestern Univ. Univ. of Colorado, (Boulder); Pacific Northwest National Lab.
- (3) "March 2003": Univ. Texas (Austin); Georgia Inst. Tech. (Phys); Univ. Pittsburgh; Yale Univ.

*** Invited talks at many Korean universities, national laboratories, industrial research centers ***:

- (4) * Colloquium:

SNU, etc, etc...(a few times)

Gwangju Institute of Science and Technology (GIST): Dec. 18, 2008. ,

Quantum Conductance of Subnanowires, Negative Differential Resistance of Molecular Wires, and Supermagnetoresistance of Graphene Nanoribbon Devices,

Daegu Gyeongbuk Institute of Science and Technology (DGIST): Dec. 2012. Nov. 2016.

Hamburg Phonon Science Colloquium. Dec. 16, 2016. (to be presented).

*** Organizing Chairperson of International Conferences

1. [Organizing Chairman] The 9th Korea-Japan Joint Symposium, Okazaki, Japan (Jan. 10-12, 2001).
2. [Organizing Chairman] The 10th Korea-Japan Joint Symposium on Theoretical/Computational Chemistry, Postech (Jan 12-15, 2003).
3. {Organizing Chairman} "Theory and Application of Computational Chemistry", TACC 2004, Gyeongju, Korea (Feb. 15-20, 2004).
4. [Organizing board member] "Modeling and Simulating Materials Nanoworld", Sicily, Italy (May 30-June 4, 2004).
5. [Corresponding Organizer] Computational Quantum Chemistry Methodology and Application",

- PacifiChem 2005, Honolulu, Hawaii, USA (Dec. 15-20, 2005).
6. [Co-Organizer] "Design of Nanomaterials and Nanodevices", PacifiChem 2005, Honolulu, Hawaii, USA (Dec. 15-20, 2005).
 7. {Organizing Chairpersons} "1st WCU Symposium/Workshop of Computational Sciences, Pohang, Korea (Nov. 21-22, 2009).
 8. {Organizing Chairpersons} "2nd WCU Symposium/Workshop of Computational Sciences, Pohang, Korea (Oct. 31, 2010).
 9. {Organizing Chairpersons} "3rd WCU Symposium/Workshop of Computational Sciences, Pohang, Korea (Nov. 19, 2011).
 10. {Organizing Vice Chairperson} "Theory and Application of Computational Chemistry", TACC 2012, Pavia, Italy (Sep. 2-7, 2012).
 11. {Organizing Chairpersons} "4th WCU Symposium/Workshop of Computational Sciences, Pohang, Korea (Nov. 17, 2012).
 12. {Organizing Chairpersons} "6th Asia-Pacific Conference of Theoretical and Computational Chemistry, Gyeongju, Korea (July 10-13, 2013).