CURRICULUM VITAE

Jin-Yong Hong

Address: Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139, United States

E-mail: jyhong@mit.edu
Tel.: +1-617-324-4235, C.P.: +1-857-209-1343

EDUCATION

Postdoctoral Fellowship

Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, Massachusetts, United States (Jun. 2013–present).
Postdoctoral research focused on the following topics:

- 2D materials beyond Graphene (MoS_2, WS_2, *h*-BN, $MoSe_2$, etc.)
- Graphitization of graphene oxide with pressure-assisted thermal reduction
- Simultaneous reduction and surface functionalization of graphene aerogel
- Enhancing mechanical properties of graphene aerogel

Research Advisor: Professor Jing Kong

Integrated M.S and Ph.D. Program

School of Chemical and Biological Engineering, Seoul National University, Seoul, South Korea (Mar. 2006–Feb. 2013).
Dissertation title: Fabrication of shape-controlled graphenes based on ‘Top-down’ and ‘Bottom-up’ approaches and their applications
Research Advisor: Professor Jyongsik Jang

B.S., Department of Polymer Science and Engineering, Chungnam National University, Daejeon, South Korea (Mar. 1999–Feb. 2006).
Research Advisor: Professor Juwhan Ryu
Military Service: 12th Corps, Republic of Korean Army (May. 2000–Jul. 2002).

PUBLICATIONS

- Total number of published papers: **44**
- Sum of impact factors: 329 (Average impact factor: **7.4**)
- Total number of citations: 667 (*h*-index: **19**)

1. H. Yoon, J.–Y. Hong, J. Jang, "Charge-Transport Behavior in Shape-Controlled Poly(3,4-ethylenedioxythiophene) Nanomaterials: Intrinsic and Extrinsic Factors" *Small* **2007**, *3*, 1774.
2. J.–Y. Hong, E. Kwon, J. Jang, "Fabrication of Silica Polythiophene core/shell Nanospheres and Their Electrorheological Fluid Application" *Soft Matter* **2009**, *5*, 951.
3. K. J. Lee, J. Lee, J.–Y. Hong, J. Jang, "Influence of Amorphous Polymer Nanoparticles on the Crystallization Behavior of Poly(vinylalchol) Nanocomposite" *Macromol. Res.* **2009**, *17*, 476.
4. J.–Y. Hong, H. Yoon, J. Jang, "The Kinetic Study on the Formation of Polypyrrole Nanoparticles in Water-Soluble Polymer/Metal Cation Systems: A Light Scattering Analysis" *Small.* **2010**, *6*, 679.
5. J.−Y. Hong, M. Choi, C. Kim, J. Jang, "Geometrical Study of Electrorheological Activity with Shape-controlled Titania-coated Silica Nanomaterials" *J. Colloid. Interface Sci.* **2010**, *347*, 177
6. J.−Y. Hong, J. Jang, "A Comparative Study on Electrorheological Properties of Various Silica/Conducting Polymer Core/Shell Nanospheres" *Soft matter* **2010**, *6*, 4669.
7. O. S. Kwon, J.−Y. Hong, S. J. Park, Y. Jang, J. Jang, "Resistive Gas Sensors Based on Precisely Size-Controlled Polypyrrole Nanoparticles: Effects of Particle Size and Depostion Method" *J. Phys. Chem.* **2010**, *114*, 18874.
8. S. Kim, W. K. Oh, Y. S. Jeong, J.−Y. Hong, B.−R. Cho, J.−S. Hahn, J. Jang, "Cytotoxicity of, and Innate Immune Response to, Size-controlled Polypyrrole Nanoparticles in Mammalian Cells" *Biomaterials* **2011**, *32*, 2342.
9. K.−Y. Shin, J.−Y. Hong, J. Jang, "Heavy metal ion adsorption behavior in nitrogen-doped magnetic carbon nanoparticles: Isotherms and kinetic study" *J. Hazard. Mater.* **2011**, *190*, 36.
10. K.−Y Shin, J.−Y. Hong, J. Jang, "Micropatterning of Graphene Sheets by Inkjet Printing and Its Wideband Dipole-Antenna Application" *Adv. Mater.* **2011**, *23*, 2113.
11. J.−Y. Hong, K.−Y. Shin, O. S. Kwon, H. Kang, J. Jang, "A Strategy for Fabricating Single Layer Graphene Sheets based on a Layer-by-Layer Self-

Assembly" *Chem. Comm.* **2011**,*47*, 7182.

12. K.–Y Shin, J.–Y. Hong, J. Jang, "Flexible and Transparent Graphene Films as Acoustic Actuator Electrodes using Inkjet Printing" *Chem. Comm.* **2011**, *47*, 8527.
13. J.–Y. Hong, D. Long, W. Li, J. Miyawaki, L. Ling, I. Mochida, S. –H. Yoon, J. Jang, "Fabrication of Uniform Graphene Discs *via* Transversal Cutting of Carbon Nanofibers" *ACS Nano* **2011**, *5*, 6254.
14. J. Song, H. Song, H. Kong, J.–Y. Hong, J. Jang, "Fabrication of Silica/Polyrhodanine Core/Shell Nanoparticles and Their Antibacterial Properties" *J. Mater. Chem.* **2011**, *21*, 19317.
15. E. Lee, J.–Y. Hong, H. Kang, J. Jang, "Synthesis of TiO_2 Nanorod-decorated Graphene Sheets and Their Highly Efficient Photocatalytic Activities under Visible-light Irradiation" *J. Hazard. Mater.* **2012**, *13-18*, 219.
16. O. S. Kwon, S. J. Park, J.–Y. Hong, A–R Han, J. S. Lee, J. S. Lee, J. H. Oh, J. Jang, "Flexible FET-Type VEGF Aptasensor Based on Nitrogen-Doped Graphene Converted from Conducting Polymer" *ACS Nano* **2012**, *6*, 1486.
17. K.–Y Shin, J.–Y. Hong, S. Lee, J. Jang, "Evaluation of Anti-scratch Properties of Graphene Oxide/Polypropylene Nanocomposites" *J. Mater. Chem.* **2012**, *22*, 7871.
18. J.–Y. Hong, J. Jang, "Micropatterning of Graphene Sheets: Recent Advances in Techniques and Applications" *J. Mater. Chem.* **2012**, *22*, 8179. (review article)
19. J.–Y. Hong, W.–K. Oh, K.–Y. Shin, O. S. Kwon, S. Son, J. Jang, " Spatially Controlled Carbon Sponge for Targeting Internalized Radioactive Materials in Human Body" *Biomaterials* **2012**, *33*, 5056.
20. O. S. Kwon, S. R. Ahn, S. J. Park, H. S. Song, S. H. Lee, J. S. Lee, J.–Y. Hong, J. S. Lee, S. A. You, H. Yoon, T. H. Park, J. Jang, "Ultrasensitive and Selective Recognition of Peptide Hormone Using Close-Packed Arrays of hPTHR-Conjugated Polymer Nanoparticles" *ACS Nano* **2012**, *6*, 5549.
21. J.–Y. Hong, J. Jang, "Highly Stable, Concentrated Dispersions of Graphene Oxide Sheets and Their Electro-responsive Characteristics" *Soft Matter* **2012**, *8*, 3348.
22. S. Lee, J.–Y. Hong, J. Jang, "The Effect of Graphene Nanofiller on the Crystallization Behavior and Mechanical Properties of Poly(vinyl alcohol)" *Polym. Int.* **2012**, *62*, 901.
23. K.–Y Shin, J.–Y. Hong, J. Jang, "High Electrothermal Performance of Expanded Graphite Nanoplatelet-based Patch Heater" *J. Mater. Chem.* **2012**, *22*, 23404.
24. J.–Y. Hong, E. Lee, J. Jang, "Electro-responsive and dielectric characteristics of graphene sheets decorated with TiO_2 nanorods" *J. Mater. Chem. A* **2013**, *1*, 117.
25. E. Lee, J.–Y. Hong, G. Ungar, J. Jang, "'Crystallization of poly(ethylene oxide)

embedded with surface-modified SiO_2 nanoparticles" *Polym. Int.* **2013**, 62, 1112.

26. S. Lee, J.–Y. Hong, J. Jang, "Synthesis and Electrical Response of Polyaniline/Poly(styrene sulfonate)-coated Silica Spheres Prepared by Seed-coating Method" *J. Colloid. Interface Sci.* **2013**, *398*, 33.
27. J.–Y. Hong, S. O. Jeon, J. Jang, K. Song, S. H. Kim, "A Facile Route for the Preparation of Organic Bistable Memory Devices Based on Size-controlled Conducting Polypyrrole Nanoparticles" *Org. Electron.* **2013**, 14, 979.
28. S. Lee, J.–Y. Hong, J. Jang, "Multifunctional Graphene Sheets Embedded in Silicone Encapsulant for Superior Performance of Light-Emitting Diodes" *ACS Nano* **2013**, *7*, 5784.
29. S. Kim, C. Kim, J.–Y. Hong, S. H. Hwang, J. Jang, "Enhanced Electrorheological Performance of Barium-doped SiO_2@TiO_2 Hollow Mesoporous Nanospheres" *RSC Adv.* **2014**, *4*, 6821.
30. K.–Y Shin, J. S. Lee, J.–Y. Hong, J. Jang, "One-step Fabrication of a Highly Conductive and Durable Copper Paste and its Flexible Dipole Tag-antenna Application" *Chem. Comm.* **2014**, *50*, 3093.
31. S. Lee, C. –M. Yoon, J.–Y. Hong, J. Jang, "Enhanced Electrorheological Performance of Graphene Oxide-wrapped Silica Rod with High Aspect Ratio" *J. Mater. Chem.C* **2014**, *2*, 6010.
32. J.–Y. Hong, J. Kong, S. H. Kim, "Spatially controlled graphitization of reduced graphene oxide films *via* a green chemistry approach" *Small* **2014**, 10, 4839.
33. S. Lee, J.–Y. Hong, J. Jang, "Performance enhancement of white light-emitting diodes using an encapsulant semi-solidification method" *J. Mater. Chem. C*, **2014**, *2*, 8525.
34. J.–Y. Hong, X. Yu, B. M. Bak, C. Pang, H. S. Park, "Bio-inspired functionalization and redox charge transfer of graphene oxide sponges for pseudocapacitive electrodes" *Carbon*, **2015**, *83*, 71.
35. J.–Y. Hong, B. M. Bak, J. J. Wie, J. Kong, H. S. Park, "Reversibly compressible, highly elastic, and durable graphene aerogels for energy storage devices under limited conditions" *Adv. Funct. Mater.*, **2015**, 25, 1053.
36. J.–Y. Hong, E. H. Sohn, S. Park, H. S. Park, "Highly-efficient and recyclable oil absorbing performance of functionalized graphene aerogel" *Chem. Eng. J.*, **2015**, *269*, 229.
37. X. Yu, H. J. Kim, J.–Y. Hong, Y. M. Jung, K. D. Kwon, J. Kong, H. S. Park, "Elucidating surface redox charge storage of phosphorus-incorporated graphenes with hierarchical architectures" *Nano Energy*, **2015**, *15*, 576.

38. S. Lee, J.–Y. Hong, J. Jang, “A Comparative study on optical, electrical and mechanical properties of conducting polymer-based electrodes” *Small*, **2015**, *11*, 5498.
39. B. C. Kim, J.–Y. Hong, G. G. Wallace, H. S. Park, “Recent progress in flexible electrochemical capacitors: electrode materials, device configuration, and functions” *Adv. Energy Mater.*, **2015**, *5*, 1500959.
40. Q. Mahmood, S. K. Park, K. D. Kwon, S. –J. Chang, J. –Y. Hong, G. Shen, Y. M. Jung, T. J. Park, S. W. Khang, W. S. Kim, J. Kong, H. S. Park, “Transition from diffusion-controlled intercalation into extrinsically pseudocapacitive charge storage of MoS_2 by nanoscale heterostructuring” *Adv. Energy Mater.*, **2015**, *6*, 1501115.
41. J.–Y. Hong, J. J. Wie, Y. Xu, H. S. Park, “Chemical modification of graphene aerogels for electrochemical capacitor applications” *Phys. Chem. Chem. Phys.*, **2015**, *17*, 30946.
42. J.–Y. Hong, D. G. Yoon, B. D. Chin, S. H. Kim, “All-solution-processed, flexible thin-film transistor based on PANI/PETA as gate/gate insulator” *RSC Adv.*, **2015**, *5*, 105785.
43. J.–Y. Hong, Y. C. Shin, A. Zubair, Y. Mao, T. Palacios, M. S. Dresselhaus, S. H. Kim, J. Kong, “A rational strategy for graphene transfer on substrates with rough features” *Adv. Mater.*, **2016**, *28*, 2382.
44. J.–Y. Hong, S. Yun, J. J. Wie, X. Zhang, M. S. Dresselhaus, J. Kong, H. S. Park, “Cartilage-inspired superelastic ultradurable graphene aerogels prepared by selective gluing of intersheet joints” *Nanoscale*, **2016**, *8*, 12900.

REFERENCES

Prof. Jyongsik Jang
School of Chemical and Biological Engineering, Seoul National University, 599 Gwanangno, Gwanakgu, Seoul 151-742, Korea.
E-mail: jsjang@plaza.snu.ac.kr
Tel.: +82–2–880–7069; Fax: +82–2–888–1604.

Prof. Jing Kong
Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139, United States
E-mail: jingkong@mit.edu
Tel.: +1–617–324–4068.