
Joon Hak Oh

Assistant Professor, POSTECH

Address: Department of Chemical Engineering,
Pohang University of Science and Engineering (POSTECH),
Pohang, Gyeongbuk 790-784, Korea

Telephone: (82)54-279-2393

Fax: (82)54-279-5296

E-mail: joonhoh@postech.ac.kr

Web: <http://ohgroup.postech.ac.kr>

EDUCATION

Seoul National University	Ph.D	Chemical Engineering	2004
Seoul National University	MS	Chemical Engineering	2000
Seoul National University	BS	Chemical Technology	1998

PROFESSIONAL ACTIVITIES

- Assistant Professor, Chemical Engineering, POSTECH, Korea, March 2014 to Present
- Assistant Professor, Nano-Bioscience and Chemical Engineering, UNIST, Korea, May 2010 to February 2014
- Postdoctoral Scholar, Chemical Engineering, Stanford University, USA, November 2006 to April 2010
- Senior Engineer, Flexible Display Lab., Samsung Electronics, Korea, July 2004 to October 2006

AWARD AND HONORS

- Outstanding Faculty Award, UNIST, 2013 (for research excellence)
- The Best Inventor Award, Samsung Electronics, 2006
- The Best Ph.D. Thesis Award, The Polymer Society of Korea, 2005
- Graduation Honor Prize, Seoul National University, 1998
- Honor Prize, Seoul National University Alumni Association, 1997

RECENT SELECTED PUBLICATION

- B. Kang,[†] M. Jang,[†] Y. Chung,[†] H. Kim, S. K. Kwak, J. H. Oh,* K. Cho,* “Enhancing 2D Growth of Organic Semiconductor Thin Film with Macroporous Structures via Small Molecule Heterointerface”, *Nature Commun.* **2014**, Accepted for Publication [[†] contributed equally]
- J. Lee,[†] A.-R. Han,[†] H. Yu, T. J. Shin, C. Yang, J. H. Oh,* “Boosting the Ambipolar Performance of Solution-Processable Polymer Semiconductors via Hybrid Side-Chain Engineering”, *J. Am. Chem. Soc.* **2013**, *135*, 9540–9547. [[†] contributed equally]
- D. W. Chang,[†] E. K. Lee,[†] E. Y. Park, H. Yu, H.-J. Choi, I.-Y. Jeon, G.-J. Son, D. Shin, N.

Park, J. H. Oh,* L. Dai, J.-B. Baek, “Nitrogen-Doped Graphene Nanoplatelets from Simple Solution Edge-Functionalization for n-Type Field-Effect Transistors” *J. Am. Chem. Soc.* **2013**, *135*, 8981–8988.

- H. Yu, Z. Bao, J. H. Oh,* “High-Performance Phototransistors Based on Single-Crystalline n-Channel Organic Nanowires and Photogenerated Charge-Carrier Behaviors”, *Adv. Funct. Mater.* **2013**, *23*, 629-639. **[Selected as Front Cover Paper]**
- J. Kim,[†] A.-R. Han,[†] J. Kim, Y. Kim, J. H. Oh,* C. Yang, “Solution-Processable Ambipolar Diketopyrrolopyrrole-Selenophene Polymer with Unprecedentedly High Hole and Electron Mobilities”, *J. Am. Chem. Soc.* **2012**, *134*, 20713–20721.
- J. Lee,[†] A.-R. Han,[†] J. Hong, J. H. Seo, J. H. Oh,* C. Yang, “Inversion of Dominant Polarity in Ambipolar Polydiketopyrrolopyrrole with Thermally Removable Groups”, *Adv. Funct. Mater.* **2012**, *22*, 4128-4138. **[Highlighted as a Back Cover Article]**
- 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*, 1486–1493.
- H. W. Lee, Y. Yoon, S. Park, J. H. Oh, S. H. Hong, L. S. Liyanage, H. Wang, S. Morishita, N. Patil, Y. J. Park, J. J. Park, A. Spakowitz, G. Galli, F. Gygi, P. Wong, J. B.-H. Tok, J. M. Kim, Z. Bao, “Selective Dispersion of High Purity Semiconducting Single-Walled Carbon Nanotubes with Regioregular Poly(3-alkylthiophene)s”, *Nature Commun.* **2011**, *2*:541 doi: 10.1038/ncomms1545.
- J. H. Oh, W.-Y. Lee, T. Noe, W.-C. Chen, M. Könemann, Z. Bao, “Solution-Shear-Processed Quaterrylene Diimide Thin-Film Transistors Prepared by Pressure-Assisted Thermal Cleavage of Swallow Tails”, *J. Am. Chem. Soc.* **2011**, *133*, 4204-4207.
- J. H. Oh, S.-L. Suraru, W.-Y. Lee, M. Könemann, H. W. Höffken, C. Röger, R. Schmidt, Y. Chung, W.-C. Chen, F. Würthner,* and Z. Bao,* “High-Performance Air-Stable n-Type Organic Transistors Based on Core-Chlorinated Naphthalene Tetracarboxylic Diimides”, *Adv. Funct. Mater.* **2010**, *20*, 2148–2156.
- M. Gsänger, J. H. Oh, M. Könemann, H. W. Höffken, A.-M. Krause, Z. Bao, F. Würthner, “A Crystal-Engineered Hydrogen-Bonded Octachloroperylene Diimide with a Twisted Core: An n-Channel Organic Semiconductor”, *Angew. Chem. Int. Ed.* **2010**, *49*, 740–743. **[Featured as a Front Cover Paper]**
- J. H. Oh, H. W. Lee, S. Mannsfeld, R. M. Stoltenberg, E. Jung, Y. W. Jin, J. M. Kim, J.-B. Yoo, Z. Bao, “Solution-Processed, High-Performance n-Channel Organic Microwire Transistors”, *Proc. Natl. Acad. Sci. USA* **2009**, *106*, 6065–6070.
- R. Schmidt,[†] J. H. Oh,[†] Y.-S. Sun, M. Deppisch, A.-M. Krause, K. Radacki, H. Braunschweig, M. Könemann, P. Erk, Z. Bao, F. Würthner, “High-Performance Air-Stable n-Channel Organic Thin Film Transistors Based on Halogenated Perylene Bisimide Semiconductors”, *J. Am. Chem. Soc.* **2009**, *131*, 6215–6228.
- M. L. Tang, J. H. Oh, A. D. Reichardt, Z. Bao, “Chlorination: A General Route toward Electron Transport in Organic Semiconductors”, *J. Am. Chem. Soc.* **2009**, *131*, 3733–3740.

RESEARCH INTERESTS

- Nano Molecular Electronics, Flexible Electronics
- Organic Electronics: Organic Field-Effect Transistors, Organic Solar Cells, Sensors
- Synthesis of Organic Semiconductor Nanomaterials and Their Applications