

Curriculum Vitae

Fengjiao Zhang

University of Illinois at Urbana-Champaign

Department of Chemical and Biomolecular Engineering

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Education

2015.07- Department of Chemical and Biomolecular Engineering, University of Illinois at Urbana-Champaign (UIUC)

Postdoctoral Scholar

Advisors: Prof. Ying Diao

Research Area: Solution printing of OFET based sensors towards promising application in healthcare system

2010.09-2015.06 Institute of Chemistry, Chinese Academy of Sciences (ICCAS)

Ph.D. candidate in Organic Chemistry

Supervisor: Prof. Daoben Zhu and Assoc. Prof. Chong-an Di

Research Area: Design fabrication, characterization and application of organic field-effect transistors (OFETs)

2006.09-2010.07 Fuzhou University (FZU)

B. S. degree in Chemistry

Awards and Honors

2014 ICCAS Dean's Award for President Special Award, **ICCAS**

2013 UCAS-BHP Billiton Scholarship, **ICCAS**

2013 Chu Yuet Wah Scholarship, **ICCAS**

2013 Tang Aoqing Scholarship in Chemistry, **ICCAS**

2013 National Scholarship, **ICCAS**

- 2010 The Outstanding Party members of Fuzhou University, **FZU**
- 2008 National Self-reliance Scholarship, **FZU**
- 2008 First Class Scholarship of Fuzhou University, **FZU**

Presentations

1. The 9th National Symposium on Electronic Process in Organic Solids (Selected as outstanding Poster award). *Nov. 10th-12th, 2012*, Yangzhou, China.
2. Graduated students' forum of organic solids in Peking University (Selected as outstanding Oral talk). *Sept. 6th-8th, 2013*, Beijing, China.
3. Annual appraisal exercises of Institute of Chemistry (Oral talk). *Dec. 6th, 2013*, Beijing, China.
4. Asian European Symposium on Organic Optoelectronics (Poster). *Dec. 9th-11th, 2013*, Beijing, China.
5. Asian Core Winter School (Oral talk and selected as outstanding Poster award). *Feb. 24th-26th, 2014*, Taipei, China.

Publications

1. **Zhang, F. J.**; Hu, Y. B.; Schuettfort, T.; Di, C. A.; Gao, X. K.; McNeill, C. R.; Thomsen, L.; Mannsfeld, S. C.; Yuan, W.; Sirringhaus, H.; Zhu, D. B. Critical role of alkyl chain branching of organic semiconductors in enabling solution-processed N-channel organic thin-film transistors with mobility of up to $3.50 \text{ cm}^2 \text{ V}^{-1} \text{ s}^{-1}$. *J. Am. Chem. Soc.* **2013** (135): 2338-2349.
2. **Zhang, F. J.**; Zang, Y. P.; Huang, D. Z.; Di, C. A.; Zhu, D. B. Flexible and self-powered temperature–pressure dual-parameter sensors using microstructure-frame-supported organic thermoelectric materials. *Nat. Commun.* **2015** (6):8356.
3. **Zhang, F. J.**; Di, C. A.; Berdunov, N.; Hu, Y. B.; Gao, X. K.; Meng, Q.; Sirringhaus, H.; Zhu, D. B. Ultrathin film organic transistors: Precise control of semiconductor thickness via spin-coating. *Adv. Mater.* **2013** (25): 1401-1407. (*Selected as inside cover*)
4. Di, C. A.; **Zhang, F. J.**; Zhu, D. B. Multi-functional integration of organic field-effect transistors (OFETs) : Advances and perspectives. *Adv. Mater.* **2013** (25): 313-330.
5. **Zhang, F. J.**; Zang, Y. P.; Di, C. A.; Huang, D. Z.; Gao, X. K.; Meng, Q.; Sirringhaus, H.;

- Zhu, D. B. Modulated thermoelectric properties of organic semiconductors using field-effect transistors. *Adv. Funct. Mater.* **2015** (25): 3004-3007.
6. **Zhang, F. J.**; Di, C. A. The development of solution-processed organic thin-film transistors. *Chemistry* **2013**, 5, 15. (*Selected as cover*)
 7. Zang, Y. P.; **Zhang, F. J.**; Huang, D. Z.; Gao, X. K.; Di, C. A.; Zhu, D. B. Flexible suspended gate organic thin-film transistors for ultra-sensitive pressure detection. *Nat. Commun.* **2015** (6): 6269.
 8. Zang, Y. P.; **Zhang, F. J.**; Di, C. A.; Zhu, D. B. Advances of flexible pressure sensors toward artificial intelligence and health care applications. *Mater. Horiz.* **2015** (2): 140-156.
 9. Zang, Y. P.; **Zhang, F. J.**; Huang, D. Z.; Di, C. A.; Meng, Q.; Gao, X. K.; Zhu, D. B. Specific and reproducible gas sensors utilizing gas-phase chemical reaction on organic transistors. *Adv. Mater.* **2014** (26): 2862-2867.
 10. Shi, K.; Zhang, F. J.; Di, C. A.; Yan, T. W.; Zou, Y.; Zhou, X.; Zhu, D. B.; Wang, J. Y.; Pei, J. Toward high performance n-type thermoelectric materials by rational modification of BDPPV backbones. *J. Am. Chem. Soc.* **2015** (137): 6979-6982.
 11. Sun, Y. H.; **Zhang, F. J.**; Sun, Y. M.; Di, C. A.; Xu, W.; Zhu, D. B. n-Type thermoelectric materials based on CuTCNQ nanocrystals and CuTCNQ nanorod arrays. *J. Mater. Chem. A* **2015** (3): 2677-2683.
 12. Jiao, F.; **Zhang, F. J.**; Zang, Y. P.; Zou, Y.; Di, C. A.; Xu, W.; Zhu, D. B. An easily accessible carbon material derived from carbonization of polyacrylonitrile ultrathin films: ambipolar transport properties and application in a CMOS-like inverter. *Chem. Commun.* **2014** (50): 2374-2386.
 13. Meng, Q.; **Zhang, F. J.**; Zang, Y. P.; Huang, D. Z.; Zou, Y.; Liu, J.; Zhao, G. Y.; Wang, Z. R.; Ji, D. Y.; Di, C. A.; Hu, W. P.; Zhu, D. B. Solution-sheared ultrathin films for highly-sensitive ammonia detection using organic thin-film transistors. *J. Mater. Chem. C* **2014** (2): 1264-1269.

14. Zhao, Z.; **Zhang, F. J.**; Zhang, X.; Yang, X. D.; Li, H. X.; Gao, X. K.; Di, C. A.; Zhu, D. B. 1,2,5,6-Naphthalenediimide based donor–acceptor copolymers designed from isomer chemistry for organic semiconducting materials. *Macromolecules* **2013** (46): 7705-7714.
15. Qi, Z.; **Zhang, F. J.**; Di, C. A.; Wang, J. Z.; Zhu, D. B. All-brush-painted top-gate organic thin-film transistors. *J. Mater. Chem. C* **2013** (1): 3072-3077.
16. Yuan, J. Y.; Huang, X. D.; **Zhang, F. J.**; Lu, J. L.; Zhai, Z. C.; Di, C. A.; Jiang, Z. Q.; Ma, W. L. Design of benzodithiophene-diketopyrrolopyrrole based donor–acceptor copolymers for efficient organic field effect transistors and polymer solar cells. *J. Mater. Chem.* **2012** (22): 22734-22742.
17. Huang, H.; Sheng, P.; Tu Z. Y.; **Zhang, F. J.**; Wang, J. H.; Geng, H.; Zou, Y.; Di, C. A.; Yi, Y. P.; Sun, Y. M.; Xu, W.; Zhu, D. B. A two-dimensional π -d conjugated coordination polymer with extremely high electrical conductivity and ambipolar transport behavior. *Nat. Commun.* **2015**, *Accepted*.
18. Huang, D. Z.; Zou, Y.; Jiao, F.; **Zhang, F. J.**; Zang, Y. P.; Di, C. A.; Xu, W.; Zhu, D. B. Interface-located photothermoelectric effect of organic thermoelectric materials in enabling NIR detection. *ACS Appl. Mater. Interfaces* **2015** (7): 8968-8973..
19. Hu, Y. Y.; Berdunov, N.; Di, C. A.; Nandhakumar, I.; **Zhang, F. J.**; Gao, X. K.; Zhu, D. B.; Siringhaus, H. Effect of molecular asymmetry on the charge transport physics of high mobility n-type molecular semiconductors investigated by scanning kelvin probe microscopy. *ACS Nano* **2014** (8): 6778-6787.
20. Qiao, Y. L.; Guo, Y. L.; Yu, C. M.; **Zhang, F. J.**; Xu, W.; Liu, Y. Q.; Zhu, D. B. Diketopyrrolopyrrole-containing quinoidal small molecules for high-performance, air-stable, and solution-processable n-channel organic field-effect transistors. *J. Am. Chem. Soc.* **2012** (134): 4084-4087.
21. Hu, Y. B.; Qin, Y. K.; Gao, X. K.; **Zhang, F. J.**; Di, C. A.; Zhao, Z.; Li, H. X.; Zhu, D. B. One-pot synthesis of core-expanded naphthalene diimides: Enabling N-substituent modulation for diverse n-type organic materials. *Org. Lett.* **2012**, (14): 292-295.