

Chen Chen

Product Engineer - Lam Research

Chen.Chen@lamresearch.com 38660 Lexington St, Apt 429, Fremont, CA, 94536 510-612-3043

Work Experience

Lam Research

Fremont, CA

Product Engineer – Dielectric Etch Productivity Group

2018/07 – present

- Support customer fab operation with in-lab test and data analysis
- Develop new features and tools for making state-of-the-art semiconductor chips

University of California-Berkeley

Berkeley, CA

Research Assistant – Crommie Research Group

2012/11 – 2018/05

- Responsible for maintenance and daily operation of two scanning tunneling microscopes (STMs). Substantial trouble-shooting experience and skills developed through working with a complex home-built instrument.
 - Study nanostructures on surfaces. Synthesize various nanostructures on different surfaces, image them with STM, and measure their electronic structures with spectroscopic techniques. Examples of such nanostructures include one-dimensional graphene nanoribbons (GNRs), and two-dimensional covalent organic frameworks (COFs). These structures have potential to be used for future generation of electronic devices.
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Education

University of California-Berkeley

Doctor of Philosophy, Chemistry

2018/05

GPA: 3.9/4.0 Advisor: Prof. Michael F. Crommie, UC Berkeley Physics Department

Peking University, China

Bachelor of Science, Chemistry

2012/06

GPA: 3.7/4.0

Knowledge and Skills

- Reactive ion etching, plasma etching
 - Extensive chemistry background; Expertise in surface chemistry.
 - Scanning tunneling microscopy (STM) and spectroscopy (STS), AFM, UHV technique.
 - Experience in SEM, TEM, FIB, Mass Spectrometry, LEED, Auger, XRD.
 - Mathematica, Matlab, Labview, HTML, C++, Python, Pandas, Machine Learning, Deep Learning.
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Professional Presentations

1. April 2017, San Francisco, American Chemical Society Spring Meeting. “Probing the local electronic structure of a porphyrin-based single-layer covalent organic framework.”

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2. March 2015, San Antonio, American Physical Society March Meeting. “Bottom-up synthesis of N=11 armchair graphene nanoribbons via sp³ to sp² cyclization route”.
 3. January 2015, Berkeley, Kavli Energy NanoScience Institute Inaugural Symposium. Presented poster “atomically-engineered graphene nanostructures”.
 4. March 2014, Denver, American Physical Society March Meeting. “Tuning the band gap of graphene nanoribbons synthesized from molecular precursors”.
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Selected Publications

1. Local Electronic Structure of Molecular Heterojunctions in a Single-Layer 2D Covalent Organic Framework
T. Joshi, **C. Chen**, H. Li, C. S. Diercks, G. Wang, P. J. Waller, H. Li, J. L. Bredas, O. M. Yaghi, M. F. Crommie. *Adv. Mater.* **2019**, *31*, 1805941.
2. Local Electronic Structure of a Single-Layer Porphyrin-Containing Covalent Organic Framework
C. Chen, T. Joshi, H. Li, A. Chavez, Z. Pedramrazi, P.-N. Liu, H. Li, W. R. Dichtel, J.-L. Bredas, and M. F. Crommie. *ACS Nano* **2018**, *12*, 385.
3. Concentration Dependence of Dopant Electronic Structure in Bottom-up Graphene Nanoribbons
Z. Pedramrazi, **C. Chen**, F. Zhao, T. Cao, G. D. Nguyen, A. A. Omrani, H. Tsai, R. R. Cloke, T. Marangoni, D. J. Rizzo, T. Joshi, C. Bronner, W. Choi, F. R. Fischer, S. G. Louie, and M. F. Crommie. **Manuscript submitted.**
4. Sequence-defined Oligo(ortho-arylene) Foldamers Derived from the Benzannulation of Ortho(arylene ethynylene)s
D. Lehnerr, **C. Chen**, Z. Pedramrazi, C. R. DeBlase, J. M. Alzola, I. Keresztes, E. B. Lobkovsky, M. F. Crommie, and W. R. Dichtel. *Chem. Sci.* **2016**, *7*, 6357-6364.
5. Closing the Nanographene Gap: Surface-Assisted Synthesis of Peripentacene from 6,6'-Bipentacene Precursors
C. Rogers, **C. Chen**, Z. Pedramrazi, A. A. Omrani, H. Z. Tsai, H. S. Jung, S. Lin, M. F. Crommie, and F. R. Fischer. *Angew. Chem. Int. Ed.* **2015** *54*(50), 15143-15146.
6. Molecular Bandgap Engineering of Bottom-up Synthesized Graphene Nanoribbon Heterojunctions
Y. C. Chen, T. Cao, **C. Chen**, Z. Pedramrazi, D. Haberer, D. G. de Oteyza, F. R. Fischer, S. G. Louie, and M. F. Crommie. *Nature Nanotechnology* **2015** *10*, 156–160.