Fufei An

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EDUCATION

University of Illinois at Urbana-Champaign (UIUC) Aug.2018-May.2024
Ph.D Candidate of Materials Sicence and Engineering *Advisor: Qing Cao*

Shanghai Jiao Tong University (SJTU) Sep.2014-Jun.2018
Bachelor of Engineering in Materials Science and Engineering *Advisor: Shenmin Zhu*

WORKING EXPERIENCE

Analog Devices, Inc. May.2024-Present
Senior Engineer, Product Engineering (Mfg.) *Global Operations & Technology*

- Management of product sustaining activities which include driving product margin and performance improvement (yield, test time, quality, etc.) and cost reduction
- Lead cross functional collaborative efforts to optimize product positioning to meet business requirements

SKILLS

Fabrication Skills: Familiar with all the common fabrication processes for nanoelectronics, including (but not limited) Photolithography (Both traditional mask manual aligner and Heidelberg Maskless Aligner), Electron Beam Lithography (heavy user on both Raith system and Elionix system), Wet etching with HF/BOE/TMAH etc. and dry etching like Reactive Ion Etching (RIE) and Plasma enhanced ICP-RIE, Wet/Dry Oxidation, Metal depositions (E-beam evaporator, AJA sputtering system, thermal evaporator, etc.), Atomic Layer Deposition (ALD), Plasma-Enhanced Chemical Vapor Deposition (PECVD), etc.

Materials Characterizations and Measurements: Nanophoton Raman, Atomic Force Microscope (Cypher AFM), Scanning Electron Microscope (Hitachi SEM), Focused Ion Beam (Thermo Scios2 Dual-Beam SEM/FIB), Thermal Gravity Analysis (TGA), X-Ray Diffraction (XRD), X-ray photoelectron spectroscopy (XPS), Fourier Transform Infrared Spectroscopy (FTIR), Transmission Electron Microscope (TEM), Scanning transmission electron microscopy (STEM), Micromanipulator Probe Station (Keysight EasyExpert as the software), CRX-6.5K Probe Station, CHI650D (Electrochemical Workstation), Brunauer, Emmett and Teller (BET) Technique, Gas Chromatograph, etc.

Computer Competencies: Klarity ACE, Data Suite, Exensio, Avalon, OriginLab, Adobe Photoshop, Matlab, Python, LabVIEW, Blender, Klayout, DigitalMicrograph, Solidworks, Microsoft, etc.

SELECTED AWARDS

Editors' Choice 2024 from Communications Engineering	*Jan.2025*
Mavis Future Faculty Fellows by the Grainger College of Engineering (2023-2024)	*Apr.2023*
PPG-MRL Graduate Research Assistantship at the Materials Research Laboratory	*Dec.2021*
Undergraduate Overseas Research Scholarship	*Oct.2017*
Prominent Performance Award for Academic Conference of Chun-Tsung Program	*Dec.2016*
Arawana Scholarship, Awarded by Arawana Charity Foundation	*Sep.2016*
Second Prize, Contemporary Undergraduate Mathematical Contest in Modeling	*Sep.2016*
Elite (Liu Yongling) Scholarship, Awarded by Elite Industrial Holdings Ltd.	*Sep.2015*

PUBLICATIONS

- Hsien-Nung Wang[1], **Fufei An**[1], Cindy Wong, Kaijun Yin, Jiangnan Liu, Yihan Wang, Jian-Min Zuo, Andre Schleife, and Qing Cao*. Solution-processable ordered defect compound semiconductors for high-performance electronics. *Science Advances 10, eadr8636 (2024),* ***Feature Article of Science Advances****.*
- **Fufei An**, C.Wang, V.H.Pham, A.Borisevich, J.Qian, K.Yin, S.Pidaparthy, B.Robinson, A-S.Chou, J.Lee, J.Weidman, S.Natesakhawat, H.Wang, A.Schleife, J-M.Zuo, C.Matranga, and Q.Cao*. Ultrathin quasi-2D amorphous carbon dielectric prepared from solution precursor for nanoelectronics. *Communications Engineering 2, 93 (2023),* ***Editors' Choice 2024****.*
- Jinsong Cui, **Fufei An**, Jiangchao Qian, Yuxuan Wu, Luke L. Sloan, Saran Pidaparthy, Jian-Min Zuo, Qing Cao*. CMOS-Compatible and Scalable Electrochemical Synaptic Transistor Arrays for Deep-Learning Accelerator. *Nature Electronics (2023): 1-9.*
- Yi Zhang, Jinsong Cui, Kuan-Yu Chen, Shanny H. Kuo, Jaishree Sharma, Rimsha Bhatta, Zheng Liu, Austin Ellis-Mohr, **Fufei An**, Jiahui Li, Qian Chen, Kari D. Foss, Hua Wang, Yumeng Li, Annette M. McCoy, Gee W. Lau, Qing Cao*. A Smart Coating with Integrated Physical-Antimicrobial and Strain-Mapping Functionalities for Orthopaedic Implants. *Science Advances 9, eadg7397 (2023).*
- Yadong Xu[1], Ganggang Zhao[1], Liang Zhu, Qihui Fei, Zhe Zhang, Zanyu Chen, **Fufei An**, Yangyang Chen, Yun Ling, Peijun Guo, Shinghua Ding, Guoliang Huang, Pai-Yen Chen, Qing Cao, Zheng Yan. Pencil–paper on-skin electronics. *Proceedings of the National Academy of Sciences 117-31(2020):18292-18301.*
- **Fufei An**[1], Li, Yao[1], Haoran Wu, Shenmin Zhu, Chenyangzi Lin, Mengdan Xia, Kun Xue, Di Zhang, and Keryn Lian. A $NiCo_2S_4$/hierarchical porous carbon for high performance asymmetrical supercapacitor. *Journal of Power Sources 427(2019): 138-144.*
- Li, Yao[1], Mengdan Xia[1], **Fufei An**, Nianfang Ma, Xueliang Jiang, Shenmin Zhu, Dawei Wang, and Jun Ma. Superior removal of Hg (II) ions from wastewater using hierarchically porous, functionalized carbon. *Journal of hazardous materials 371(2019): 33-41.*
- Sun, Du[1], Yunfei Wang[1], Kenneth JT Livi, Chuhong Wang, Ruichun Luo, Zhuoqun Zhang, Hamdan Alghamdi, Chenyang Li, **Fufei An**, Bernard Gaskey, Tim Mueller, and Anthony Shoji Hall*. Ordered Intermetallic Pd_3Bi Prepared by an Electrochemically Induced Phase Transformation for Oxygen Reduction Electrocatalysis. *ACS nano 13, no.9(2019): 10818-10825.*

PATENT APPLICATIONs

- Qing Cao, **Fufei An**, Christopher Matranga, Congjun Wang, Viet Hung Pham. "2D amorphous carbon film assembled from graphene quantum dots" *U.S. Patent Application No. 21-0366-US-PRO*

CONFERENCE AND PRESENTATIONS

- **Fufei An**, Qing Cao. "Ultrathin Quasi-2D Amorphous Carbon Dielectric prepared from Solution Precursor for Nanoelectronics", *2024 MRS Spring Meeting.*
- Congjun Wang, Viet Hung Pham, **Fufei An**, Christopher Matranga, Qing Cao. "Solution Processible Carbon Precursors for 2D Amorphous Carbon Dielectric", *The Materials Science & Technology (MS&T) technical meeting and exhibition (2022).*