Yuning Wang

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Education

- **University of Science and Technology of China** — Suzhou, Jiangsu, China
  Ph.D of Electronic Science and Technology — *Sept. 2021 - Jun. 2024*
  - **Advisor**: Prof. Ke Xu
- **University of Science and Technology of China** — Suzhou, Jiangsu, China
  Master of Electronics and Communication Engineering — *Sept. 2019 - Jun. 2021*
  - **Advisor**: Prof. Ke Xu
- **Anhui University** — Hefei, Anhui, China
  Bachelor of Materials Physics — *Sept. 2015 - Jun. 2019*

Relevant skills

- **Research Focus**: Epitaxial Growth and Defects in Nitride Semiconductor Materials.
- **Epitaxial Growth Method of Nitride**: MOCVD, HVPE, MBE.
- **Equipment for Characterizing the Microstructure and Optical Properties of Materials**: TEM, SEM, CL, Raman, XRD, AFM, XPS.
- **DFT calculation**: MS, VESTE, PWMAT.
- **Other Skills**: LaTeX, Origin, Blender.

Projects

• **National Key R&D Program of China**, 4-inch AlN Template Substrate Industrialization Key Technology, Participation, Dec. 2022 - Now.

• **National Natural Science Foundation of China**, Interface Science Issues in Graphene-Based Remote Epitaxial High-Quality AlN Thin Films, Participation, Jan. 2022 - Now.

• **Key Project of National Natural Science Foundation of China**, Research on Growth and Physical Properties of Gallium Nitride with Low Defect Density on Two-dimensional Crystal Materials, Participation, Jul. 2020 - Dec. 2022.

Honors and Awards

- Suzhou Institute of Nano-Tech and Nano-Bionics "Qiang Yi" Scholarship, Second Class Scholarship, 2024
- University of Science and Technology of China, First Class Scholarship, 2023
- University of Science and Technology of China, Second Class Scholarship, 2022
- University of Science and Technology of China, Second Class Scholarship, 2021
- University of Science and Technology of China, "Nano Star" Scholarship, 2020
- University of Science and Technology of China, First Class Scholarship, 2020
- University of Science and Technology of China, Second Class Scholarship, 2019

Publications

• **Y. Wang**, Y. Qu, Y. Xu, D. Li, Z. Lu, J. Li, X. Su, G. Wang, L. Shi, X. Zeng, J. Wang, B. Cao, K. Xu. Modulation of Remote Epitaxial Heterointerface by Graphene-Assisted Attenuative Charge Transfer [J]. **ACS Nano**, 2023, 17(4): 4023-4033.

• J. Tao, Y. Xu, J. Li, X. Cai, **Y. Wang**, G. Wang, B. Cao, K. Xu. Microstructural and Spectroscopic Analysis of Epitaxial Lateral Overgrowth GaN via the Self-Decomposing Hexagonal Graphene Mask [J]. **Jpn. J. Appl. Phys.**, 2024, 63(2): 025503.

• L. Yue, J. Xu, X. Wang, J. Zhou, **Y. Wang**, L. Yao, M. Niu, M. Wang, B. Cao, K. Xu. Flexible Arrays of GaN-Based Micro-LED Fabricated on Different Substrates by Laser Lift-Off Process [J]. **Jpn. J. Appl. Phys.**, 2024.

• Z. Lu, **Y. Wang**, C. Wang, F. Wang, K. Xu, Y. Liu. Cathodoluminescence Studies of Point Defects in Aluminum Nitride [J]. **AIP Adv.**, 2023, 13, 035133.

• S. Wang, J. Xu, **Y. Wang**, X. Su, Y. Zheng, N. Bao, K. Xu. Growth of Single-Crystalline GaN Films on Ga-Free Langasite-Type Crystals by Metal-Organic Chemical Vapor Deposition [J]. **Cryst. Growth Des.**, 2023, 24(1): 331-338.

• Y. Qu, Y. Xu, **Y. Wang**, J. Wang, L. Shi, B. Cao, K. Xu. The Essential Difference between Remote Epitaxy and Van Der Waals Epitaxy: Long-Range Orbital Hybridization at the GaN/Graphene/AlN Interface [J]. **J. Cryst. Growth**, 2023, 609: 127073.

• J. Li, Y. Xu, J. Tao, X. Cai, **Y. Wang**, G. Wang, B. Cao, K. Xu. Study on Nucleation and Growth Mode of GaN on Patterned Graphene by Epitaxial Lateral Overgrowth [J]. **Cryst. Growth Des.**, 2023, 23(8): 5541-5547.

• Y. Qu, Y. Xu, B. Cao, **Y. Wang**, J. Wang, L. Shi, K. Xu. Long-Range Orbital Hybridization in Remote Epitaxy: The Nucleation Mechanism of GaN on Different Substrates via Single-Layer Graphene [J]. **ACS Appl. Mater. Interfaces**, 2022, 14(1): 2263-2274.

• Y. Xu, B. Cao, E. Zhao, Y. Qu, **Y. Wang**, Y. Zhang, J. Wang, C. Wang, K. Xu. Direct van deer Waals Epitaxy of Multiband-Emitting InGaN-Based LEDs on Graphene for Phosphor-Free White Light illumination [J]. **J. Alloys Compd.**, 2022, 902: 163712.

• J. Xu, **Y. Wang**, Y. Xu, J. Wang, K. Xu. Research on Heterogeneous Remote Epitaxy of GaN on Graphene [J]. **J. Synth. Cryst.**, 2023, 52(5): 894-900.

Patents

• **Y. Wang**, Y. Xu, K. Xu. Patent Name: Remote Epitaxial Growth Method, Composite Substrate and Application of High-Quality Nitride Film: China, invention patent application number: 202311652167.1[P]. (Authorized)

• **Y. Wang**, Y. Xu, J. Xu, J. Wang, K. Xu. Patent Name: Nitride Epitaxial Structure and Its Preparation Method and Application: China, invention patent application number: 202310327920.3[P]. (Authorized)

• **Y. Wang**, Y. Xu, J. Wang, K. Xu. Patent Name: A Silicon Nitride Single Crystal and Its Preparation Method and Application: China, invention patent application number: 202110428782.9[P]. (Authorized)

• L. Wang, Y. Xu, **Y. Wang**, K. Xu. Patent name: Epitaxial Growth Method and Application of Single Crystal Nitride Film Based on Electric Field Regulation: China, invention patent application number: 2024104655858[P]. (Applied)

• L. Wang, Y. Xu, **Y. Wang**, K. Xu. Patent name: Epitaxial Growth Method and Application of Large-Size Single Crystal Hexagonal Boron Nitride: China, invention patent application number: 2024104498240[P]. (Applied)

• J. Xu, Y. Xu, **Y. Wang**, J. Wang, K. Xu. Patent name: Nitride Epitaxial Structure, Epitaxial Growth Method and Application: China, invention patent application number: 202310410667.8[P]. (Published)

• Y. Qu, Y. Xu, **Y. Wang**, J. Wang, K. Xu. Patent name: Nitride Single Crystal Thin Film and Its Preparation Method and Application: China, invention patent application number: 202111625327.4[P]. (Authorized)

Academic Activities

• **Y. Wang**, Y. Xu, B. Cao, K. Xu. The 14th International Conference on Nitride Semiconductors (ICNS-14), Fukuoka, Japan, 2023 (Poster)

• **Y. Wang**, Y. Xu, B. Cao, K. Xu. The 5th National Wide Bandgap Semiconductor Conference, Suzhou, China, 2023 (Poster)

• **Y. Wang**, Y. Xu, B. Cao, K. Xu. The 24th National Semiconductor Physics Conference, Shanghai, China, 2023 (Oral)

• **Y. Wang**, Y. Xu, B. Cao, K. Xu. Advanced Epitaxy for Freestanding Membranes and 2D Materials(AEFM), Seoul, South Korea, 2023 (Oral & Poster)

• **Y. Wang**, Y. Qu, Y. Xu, D. Li, Z. Lu, X. Su, G. Wang, L. Shi, J. Wang, B. Cao, K. Xu. The 17th National MOCVD Conference, Taiyuan, China, 2022 (Poster)

• **Y. Wang**, Y. Qu, Y. Xu, D. Li, Z. Lu, J. Li, X. Su, G. Wang, L. Shi, X. Zeng, J. Wang, B. Cao, K. Xu. The 19th China International Exhibition and Forum on Solid State Lighting & 2022 International Forum on Wide Bandgap Semiconductors (SSLChina: IFWS), Suzhou, China, 2022 (Poster)

• **Y. Wang**, Y. Qu, D. Li, Z. Lu, L. Li, F. Yang, J. Li, J. Tao, X. Cai, X. Su, G. Wang, Y. Xu, B. Cao, J. Wang, K. Xu. The 4th National Wide Band Semiconductor Conference, Xiamen, China, 2021 (Poster)