Dr. Lei Zhao

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Education

Ph. D. Chemical Physics, Liquid Crystal Institute, **Kent State University, OH** 2008-2018

B.S. Materials Chemistry, **Nanjing University, China,** 2004-/2008

Professional Experience

Researchr in Noval Display & Sensing Research Center, Yongjiang Laboratory. 2022-present

- Diffractive waveguide on argument reality devices
- 3D light filed displays
- XR testing flatform, specially for XR related tests

Staff Display Engineer in PPO-Optics team, Apple Inc. 2012-2021

- Display LCD DRI for 12.9" iPad Pro (2015): Apple's first iPad with Variable Refresh Rate display
  - winner of **2016 SID Display of the Year Award**. Responsible for all aspects of display performance
- Display LCD DRI for 12.9" iPad Pro (2017): Apple's first iPad with ProMotion technology
  - winner of **2018 SID Display of the Year Award.** Responsible for all aspects of display performance
- Key contributor to new display technology development: display architecture and panel design.
  Special Project Group (the **VisionPro** team) **display/optics engineering**

Publications

- "A Closer Look Advancements in Near-Eye Display Testing and Metrology", Invited talk, ICDT 2023
- "A Method for Accurately Measuring the Refractive Index Modulation of Volume Holographic Grating", ICDT 2023
- "Pupil Swim Measurement and Analysis Method of Near-eye Displays", ICDT 2023
- "Comprehensive Contrast Ratio Evaluation Method of VR Products",ICDT 2023
- "A Method for Measuring AR/VR Pixel Angular Density",ICDT 2023
- "Conformational effect on the temperature dependence of helical twisting power," SPIE, 2013
- "Conformational effect on the temperature dependence of helical twisting power," IMID, 2011

Patents:

- "A dual-beam scheme that may improve the polariscopes measurement accuracy by employing a novel optical design," [CN1011420221A]
- "Display Device With Optical Combiner",[US11099386B1]
- "Display Pixels with Improved Storage Capacitance",[US20140327851A1]
- "Display Having Pixel Circuits With Adjustable Storage Capacitors",[US9182643B1]
- "Entry Controlled Inversion Imbalance Compensation", [US009830849B2], [CN105869559], [JP6523467], [KR101860283], [TW I586162 B]
- "VCOM Drift Improvements by New Design and Compensation Techniques"[US2018/0350283 A1]

Dear Committee,

I am writing to highly recommend Dr. Zhao, Lei for the representative of Young Leader Conference. Her exceptional skills and dedication to her work have made her an invaluable member of China display industry.

Lei was born in 1985 and graduated with a Bachelor's degree from Nanjing University and a PhD from the Liquid Crystal Institute at Kent State University. Her academic achievements are a testament to her dedication and hard work. After graduation, she joined Apple as a Display and Optical Engineer and has since made significant contributions to Apple product line.

While at Apple, Lei led the optical design of the first-generation iPad Pro, which generated over $100 billion in product sales. Her innovative approach and attention to detail led to the development of variable refresh rate technology, which has since been implemented in the MacBook, Apple Watch, and iPhone product lines. Her work has not only revolutionized the display industry but has also won the Best Display Award at the 2016 and 2018 SID Display Week, respectively.

Lei's achievements have not gone unnoticed. She was selected for the national talent introduction plan, provincial talent introduction plan and the Ningbo Yongjiang Talent Introduction Project, further highlighting her exceptional talent and leadership qualities. In November 2022, she joined the Yongjiang Laboratory as a researcher at the Novel Display and Sensing Research Center, where she continues to make strides in her field.

Lei's dedication, innovation, and leadership have made her an invaluable asset to China display industry. I am confident that she would excel as a young display leader and would bring her unique perspective and expertise to the table.

I highly recommend Lei as representative of China Young Display Leaders, and am confident that she would make a significant contribution to the Young Leader Conference. Her skills and experience are unparalleled, and she would be an asset to any team or organization.

Thank you for considering my recommendation. I am confident that Lei would be an excellent addition to the young display leader forum.

Best regards,

Qun (Frank) Yan
Director, SID Beijing Chapter
Treasurer, SID
Distinguished Professor, Fuzhou University