
Light collimation design for micro-LED near-eye displays

1. *College of Physics and Information Engineering, Fuzhou University, Fuzhou 350108, China.*
2. *Fujian Science & Technology Innovation Laboratory for Optoelectronic Information of China, Fuzhou 350108, China.*

Prof. Enguo Chen
Email: ceg@fzu.edu.cn

Near-eye display technology is one of the most prominent fields of interest today, yet facing challenges such as low collection efficiency of optical engines. This is primarily attributed to the Lambertian intensity distribution of the self-emitting micro-LED pixels. This presentation will outline innovative collimation methods developed by our group to enhance pixel-level collimation efficiency through on-chip or secondary optical solutions. These techniques are adaptable to advanced self-emitting displays and have the potential to significantly boost performance for projection, AR, and VR displays.

Short Bio:



Enguo Chen received the PhD degree in optical engineering from Zhejiang University, Zhejiang, China, in 2013. After that, he visited The Hong Kong University of Science and Technology (HKUST) and University of Central Florida (UCF) as a research scholar, respectively. He is currently a full professor at Fuzhou University, with a joint appointment as a Distinguished Research Fellow of Fujian Science & Technology Innovation Laboratory for Optoelectronic Information of China. Till now, his research has been funded by several grants from national or regional government, and he has also cooperated with several well-known display manufacturers. He has published over 150 papers in academic journals and conference proceedings and owned over 60 authorized Chinese invention patents. His research interests mainly include (1) optical design of optical systems and (2) emerging display technologies. He is the member of OSA, SID,

ACS and Chinese Vacuum Society and has served as the reviewer for 60+ peer-reviewed journals and TPC member for several academic conferences.