EuroSciCon

May 09-10, 2019
Stockholm, Sweden

EuroSciCon Joint Event on
Laser Optics,
Quantum & Plasma Physics

Ni lei et al., J Electr Eng Electron Technol 2019, Volume:8
DOI: 10.4172/2325-9833-C1-015

DESIGN AND ANALYSIS OF A HIGH ACCURACY BIDIRECTIONAL THERMAL DEFORMABLE MIRROR

Ni Lei[1] and Song dengqiang[2]

[1]Southwest University of Science and Technology, China
[2]Donghua University, China

In order to realize a high-efficiency, low-cost and bi-directional heat-driven deformable mirror, a novel deformable mirror integrated structure using a thermoelectric cooler is proposed. Through finite element analysis and theoretical analysis and comparison, we found out that there are problems in the driving process, and corrected four kinds of special aberrations: convex divergence, concave divergence, 45° astigmatism, 90° astigmatism, and mirror PV. Finally, compared with other related studies, the results show that the correction ability of our deformed mirror aberration is more prominent. At the same time, the mirror PV value reaches 386 nm and the RMS value reaches 81 nm. The two-way driving correction effect is excellent, and the efficiency and cost are low.

Biography

Dr. Lei Ni is a lecturer at the Southwest University of Science and Technology (SWUST). His research focuses on Optical instruments design and Optical processing. He graduated from the University of Chinese Academy of Science at 2013 and received his Doctor's Degree in the 2013 from the University of Chinese Academy of science.

sunshinedavy@qq.com