

4th International Conference and Exhibition on **Biosensors & Bioelectronics**

September 28-30, 2015 Atlanta, USA

A simple method to fabricate bioinspired curved surface microlens array

Xiaoyang Zhu, Li Zhu, Hejuan Chen and Lijun Yang
Nanjing University of Science and Technology, China

In nature, omnidirectionally arranged insects' compound eyes have the outstanding capabilities for the wide Field-Of-View (FOV) imaging and fast motion detection. In recent years, the optical elements inspired by the compound eyes have attracted a great deal of research. However, fabrication of the artificial compound eye structures onto curved surfaces is still challenging. Although several groups have demonstrated the ability to produce the curved microlens array (curved MLA) using different techniques, most of them also suffer from different disadvantages, such as expensive facilities, long processing time and complicated fabrication process. In this work, a simple and cost-effective approach is introduced to fabricate the curved MLA. Firstly, we fabricated a glycerol solution micro-droplet array on the planar glass substrate using a novel Drop-On-Demand (DOD) droplet generator, and then multiple replication processes were used to transfer the profile of the micro-droplet array from the planar surface onto a curved surface using the Polydimethylsiloxane (PDMS). The Scanning Electron Microscope (SEM) and the optical performance of the formed curved MLA are analyzed.

zhuxy1026@163.com

Notes: