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Abstract

Graphene nanowalls (GNWs) membrane exhibits a high response to deformation due to the interlaced graphene sheets. In this work, a contact-lens tonometer is developed using the graphene nanowalls (GNWs) as the sensing element for continuously intraocular pressure (IOP) monitoring. A gold film assisted transfer method was invited to transfer an intact structure of GNWs film from Silicon substrate, on which it's deposited by PACVD, to polydimethylsiloxane (PDMS). It helps to obtain a sensing material with high sensitivity and transparency. The contact-lens tonometer has a high-resolution sensing property to tiny deformation introduced by IOP increasing.

Figures used in the abstract

Figure 1: 图片展现眼角膜在眼内压 (IOP) 升高至25mmHg时所呈现的应力以及形变状态