

## **Structure Analyses and Simulation of Tunable Grating based on GNP and PDMS**

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**Abstract:** The tunable grating made from graphene nanoplatelet (GNP) and polydimethylsiloxane (PDMS) has a large tuning range under the near-infrared (NIR) light driving conditions. However, when changing the grating structure parameters, the tuning range will change accordingly. In this paper, the influence of structural parameters of grating on its tuning range under the drive of near-infrared light is studied through numerical simulation. The results show that the different length, width and thickness parameters of the GNP/PDMS film will change the tuning range of the grating. When the length and thickness of the GNP/PDMS film increase, the tuning range of the grating is reduced, however, when the width of the film increases, the tuning range of the grating increases.