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**Heat generation based on graphene with plasmonic nanostructures under illumination** HUI-CHUN CHIEN, GUOWEI XU, JUDY WU, HSIN-YING CHIU, University of Kansas — We study the heat generation based on the graphene decorated with self-assembly silver nanoparticles under uniform illumination. Photoresponse from our devices was observed in high vacuum, which possibly was attributed to the change of interfacial properties between silver nanoparticles and graphene due to the heat generation by plasmonic-enhanced light trapping. Based on this heat generation mechanism, in this talk, we also present a novel scheme of photodetection with high photoresponsivity by employing liquid electrolyte in our system. Moreover, the photo-thermoelectric device will be proposed for solar energy applications.

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