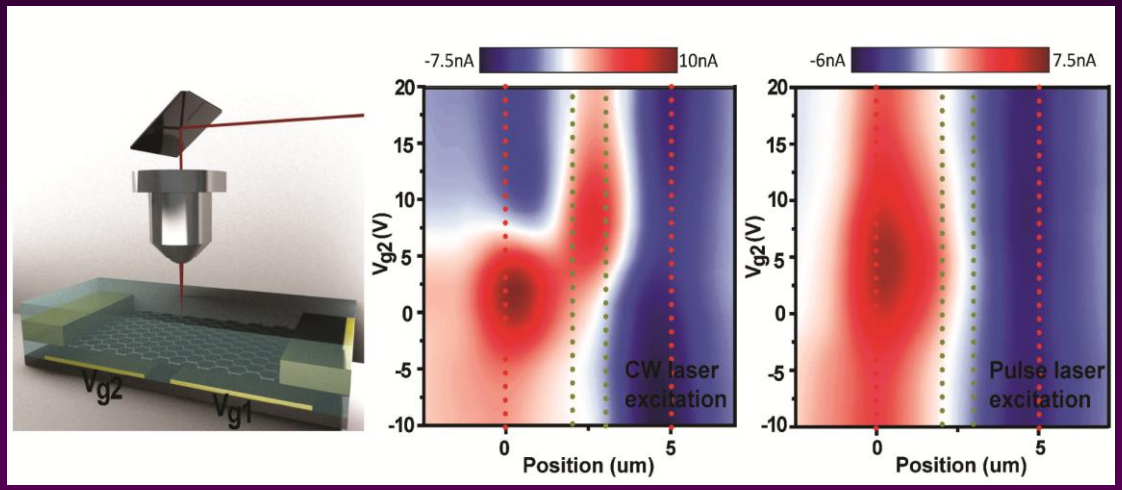
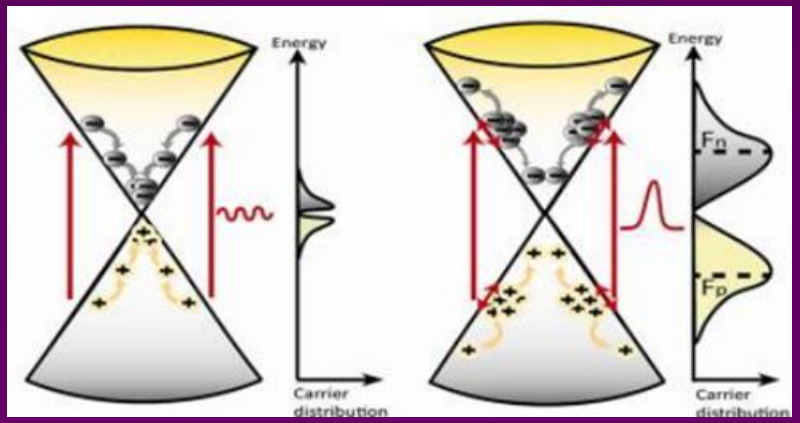
Observation of Photoexcited Hot carrier Extraction from Graphene

Zhaohui Zhong, Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, 48109

We aim to study graphene photocurrent generation mechanisms at graphene-metal junction and graphene pn junction. By utilizing scanning photocurrent spectroscopy, we observed striking difference of gate dependence of photoresponse between pulse and continous wave laser excitation.



The unusual photoresponse under pulse laser excitation is due to nonequilibrium hot carrier generation.



In addition, power dependence of photoresponse at graphene-metal junction further confirm that hot carrier generation is directly related to laser excitation power.