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Title:	Modulating capacitive response of MoS2 flake by controlled nanostructuring through focused laser irradiation
Authors:	Balal, M. (/jspui/browse?type=author&value=Balal%2C+M.) Sheet, G. (/jspui/browse?type=author&value=Sheet%2C+G.)
Keywords:	Capacitance Electrostatic force microscopy MoS2 nanostructure Laser irradiation
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Abstract:	Unlike graphene nanostructures, various physical properties of nanostructured MoS2 have remained unexplored due to the lack of established fabrication routes. Herein, we have reported unique electrostatic properties of MoS2 nanostructures, fabricated in a controlled manner of different geometries on 2D flake by using focused laser irradiation technique. Electrostatic force microscopy has been carried out on MoS2 nanostructures by varying tip bias voltage and lift height. The analysis depicts no contrast flip in phase image of the patterned nanostructure due to the absence of free surface charges. However, prominent change in phase shift at the patterned area is observed. Such contrast changes signify the capacitive interaction between tip and nanostructures at varying tip bias voltage and lift height, irrespective of their shape and size. Such unperturbed capacitive behavior of the MoS2 nanostructures offer modulation of capacitance in periodic array on 2D MoS2 flake for potential application in capacitive devices.
Description:	Only IISERM authors are available in the record.
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