Recommendation: Publish after minor revisions

Comments:

The authors reported a useful method to flexibly microprocess multilayer MoS2 flakes through femtosecond laser pulse direct writing, which directly fabricated regular MoS2 nanoribbon arrays with different ribbon widths and arbitrarily patterned MoS2 flakes to form micro/nanostructures. The chemical modification of MoS2 were also studied, indicating oxygen molecules were chemically and physically bonded to laser-processed MoS2, attributed to roughness defect-sites and edges of micro/nanostructures. They conducted the electrical tests of field effect transistor fabricated from prepared MoS2 nanoribbon arrays, and the output and transfer characteristics exhibited strong rectification. The method for maskless micro/nanopatterning of MoS2 flakes and the research on chemical and electrical modification of laser-processed MoS2 are significant and interesting. The innovation of this work is clear and significant, and the manuscript is well organized. However, before possible publication, some of the listed points should be explained or revised for further improving the manuscript.

1. Authors demonstrated the advantage of femtosecond laser processing and compared it with CW laser processing. Please illustrate the mechanism of femtosecond laser processing to explain it.
2. Please explain the formation of MoS2 micro/nanostructures in this work through femtosecond laser pulse direct writing, for it was difficult to fabricate such nanostructures through conventional direct writing due to the diffraction limit of femtosecond laser.
3. In Figure 4, the authors claimed stronger peak of nonvalent oxygen of O2/MoS2, on a Y-axis with a.u., this is not very convincing. What is the reference peak employed here to address relative changes? Also, please explain the existence of the strong and dominant peak assigned to divalent oxygen of Si–O bonds.
4. Authors demonstrated oxygen molecules chemically and physically bonded to laser-processed MoS2. Please elaborate the influence of these oxygen molecules on MoS2.
5. The rectification phenomenon of electrical properties of MoS2 field effect transistor in this work is significant. Please explain why femtosecond laser processing/surface moderate modification can cause them.