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## Preparation of exfoliated MoS<sub>2</sub> nanosheets with catalytic active edges

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### Abstract

Two-dimensional MoS<sub>2</sub> nanosheets have been widely studied in diverse application fields (1). MoS<sub>2</sub> nanosheets can be prepared via different synthesis methods such as hydrothermal/solvothermal and liquid-phase-exfoliation method (2). In this study, MoS<sub>2</sub> nanosheets have been prepared through exfoliation of bulk MoS<sub>2</sub> powder in N-methyl-2-pyrrolidone (NMP) via combination of bath and then tip sonication. In order to activate the MoS<sub>2</sub> nanosheets edges, appropriate amount of highly oxidant H<sub>2</sub>O<sub>2</sub> was added to NMP solution. The best results were obtained where the volume ration of 3:17 (V/V%) was chosen for H<sub>2</sub>O<sub>2</sub>: NMP. Obtaining catalytic active MoS<sub>2</sub> nanosheets via such a facile and straightforward procedure is an important achievement for various applications such as water splitting and pollutants degradation (3).

**Key words:** MoS<sub>2</sub>, H<sub>2</sub>O<sub>2</sub>, NMP, exfoliation

### References

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