

### Effect of pH on Li-ion assisted MoS<sub>2</sub> exfoliation

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There have been attempts for Li-ion assisted MoS<sub>2</sub> exfoliation to utilize unique property of 2D layered MoS<sub>2</sub>. However, use of organic solvents and argon in the exfoliation process hampered the efficiency of Li-ion assisted exfoliation. Here, we report the MoS<sub>2</sub> exfoliation process using aqueous Li-ion solution at room temperature in a Taylor-Couette flow reactor. MoS<sub>2</sub> was dispersed in Li-ion solution at various pH. We studied the effect of pH on the quality of exfoliated MoS<sub>2</sub>. Surface layer of MoS<sub>2</sub> exfoliated at various pH was analyzed by transmission electron microscopy and scanning electron microscopy. Characteristics of exfoliated MoS<sub>2</sub> was analyzed by X-ray photoelectron spectroscopy, X-ray diffraction, and Raman spectroscopy.