

# Wafer-scaled Synthesis of 2D-MoS<sub>2</sub> by Cold-wall CVD

## Presenting Author

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Abstract (Century Gothic 11)

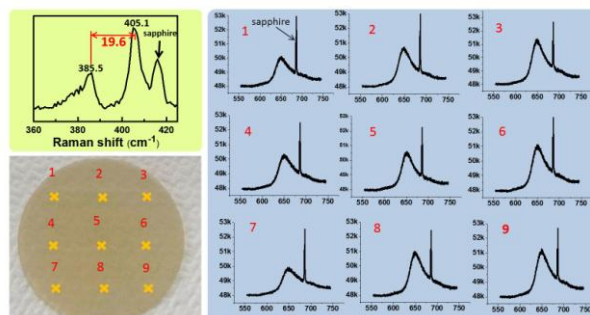
Wafer-scaled synthesis of mono- to few-layer transition metal dichalcogenide (TMD) of Molybdenum disulfide (MoS<sub>2</sub>) is achieved by using a special designed cold-wall chemical vapour deposition (CVD) system which is capable of high comparability to the process of nowadays semiconductor industry. In our cold-wall CVD system, varied precursors including sulfur powder, hydrogen sulfide (H<sub>2</sub>S), molybdenum trioxide (MoO<sub>3</sub>) or molybdenum hexacarbonyl (Mo(CO)<sub>6</sub>) were introduced. The advanced multi-zone temperature control allows us to realize the synthesis of wafer-scaled MoS<sub>2</sub>. Follow the concept of our cold-wall CVD system, other wafer-scaled 2D-TMD would be realized in the near future.

## References

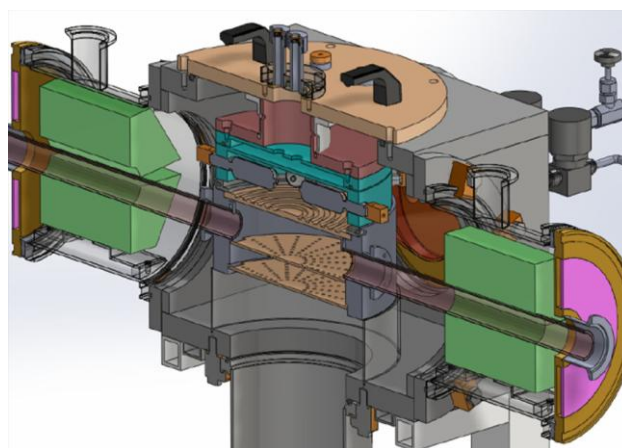
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## Figures



**Figure 1:** Monolayer MoS<sub>2</sub> on 2-inch sapphire wafer.



**Figure 2:** Sectional view of the reaction chamber of cold-wall CVD.