

Figure 1. Schematic of the PEALD process and the effect of plasma feed gas H_2 content in controlling the crystallinity of MoS_x films. On the right, Raman spectra of MoS_x films deposited at $150\text{ }^\circ\text{C}$ (140 ALD cycles) using different levels of H_2 content are shown.

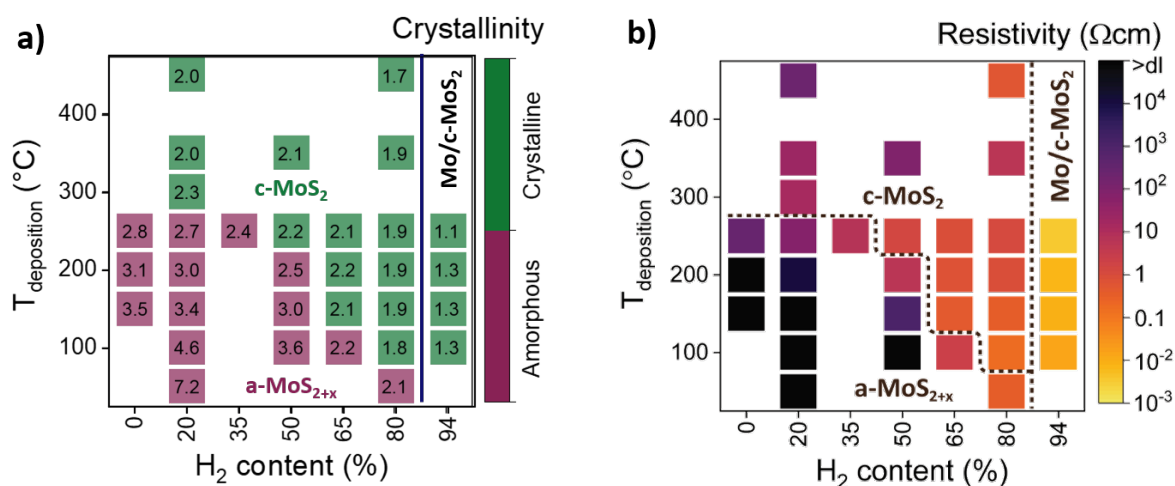


Figure 2. Effect of H_2 content and deposition temperature on a) crystallinity (colors, analyzed by Raman) and S/Mo ratio (numbers, analyzed by XPS) and b) resistivity (analyzed by four-point probe).

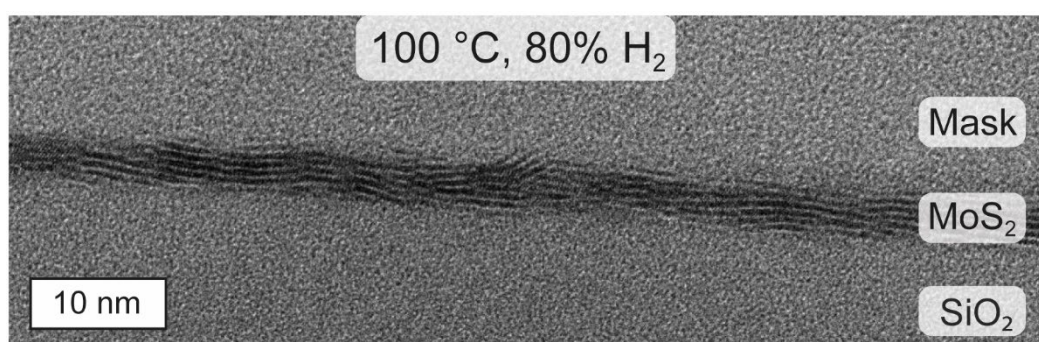


Figure 3. Cross-sectional TEM image showing the layered crystalline structure of a MoS_2 film grown at $100\text{ }^\circ\text{C}$ and 80% H_2 content using 50 ALD cycles.