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Growth of thin films material

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he molecular beam epitaxy is one of the most powerful thin-film deposition technique for exploring novel materials and heterostructure. Almost all elements can be evaporated with atomic-layer precision in thickness in this ultra-high vacuum environment. In this talk we will discuss about the superlatives of the MBE, the types of sources and the in-situ RHEED monitoring technique. We will introduce the different type of epitaxy, especially the van der Walls epitaxy method for growing 2D materials. We will take the examples of topological insulator (Bi2Te3, Bi2Se3) and transition metal dichalcogenides (WSe2) to briefly illustrate how some of the growing parameters influence the growth quality.

Primary author: MPG (HALLE, DE), Pierre-Jean Zermatten,

Presenter: MPG (HALLE, DE), Pierre-Jean Zermatten,