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【12】Needle-like organic crystals on two dimensional materials

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Van der Waals (vdW) heterostructure attracted wide attention by the research community in the past decade. Their functionality depends predominantly on two dimensional (2D) materials. However, there are other vdW heterostructure building blocks besides 2D sheets, as molecular crystals.
This talk will focus on vdW heterostructures combining organic crystallites and 2D materials. By epitaxially growing small rod-like molecules on 2D materials, effectively one-dimensional needle-like crystallites form and self-align to the substrate's high symmetry directions [1]. Originating from highly anisotropic properties of the organic molecules, these mixed-dimensional vdW heterostructures exhibit unique mechanical and opto-electronic properties [2,3].

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