

Solvent-additive assisted-growth of perovskite single crystals via Lewis acid-base adduct approach

Faculty: Prof Yeng Ming Lam

Single crystals are important platform for the study of fundamental optoelectronic properties of organic–inorganic hybrid perovskite materials. Organic molecule, commonly employed as Lewis-base additive for polycrystalline perovskite film, has been recently introduced as capping ligands to manipulate the growth of freestanding perovskite single crystals in solution. In this project, various organic molecules from anionic- surfactant and ionic-liquid families will be used to tune preferential growth of the crystal facets. The characteristics of the different facets will be structurally, morphologically and chemically characterized. Finally, the growth of the freestanding crystals will be extended into single-crystalline thin films using the space-confined method.