



Contribution ID: 122

Type: **Talk**

[243] Growth and morphology of ultrathin lithium fluoride deposited on Ag(100)

Thursday, 2 September 2021 15:00 (15 minutes)

Lithium fluoride (LiF) is an interesting material for spintronic applications[1] and a potential candidate for decoupling single-molecule magnets from metallic substrates.[2] We have investigated the growth and morphology of LiF deposited onto the Ag(100) surface in the monolayer regime under different conditions. Scanning tunneling microscopy, low energy electron diffraction and polarized X-ray absorption spectroscopy reveal that LiF exhibits epitaxial Volmer-Weber type growth. When the substrate is held at room temperature during growth, anisotropic and strained dendrites form, while at 500 K LiF self-assembles into more relaxed square islands displaying a Moiré pattern.

[1] Drew et al., Nature Materials, 8, 109 (2009); [2] Wäckerlin et al., Advanced Materials, 28, 5142 (2016).

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Session Classification: Surfaces, Interfaces and Thin Films

Track Classification: Surfaces, Interfaces and Thin Films