PARADIM – an Incubator for Collaborations

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Important applications like ultrashort pulsed lasers, sensors, laser amplifiers, and digital optical information processing, depend on materials with nonlinear optical properties—that is the material's nonlinear interaction with electromagnetic waves, *e.g.*, light.

One of the widely used materials for nonlinear optics is lithium niobate ($LiNbO_3$) but growth in thin film form for use in photonic integrated circuits remains challenging. Enhancing the quality of thin films may enable the reduction of device dimensions as well as the operating voltage, making it easier to modulate electrical and optical properties.

"The PARADIM user meeting provided a nice platform for users to get more connected and discuss collaborations."

Jian Shi, RPI (July 2021)

Discussions among two PARADIM users and members of their research groups during one of PARADIM's User Meetings made the teams join forces to realize epitaxial $LiNbO_3$ thin films on various substrates via van der Waals and remote epitaxy. High-resolution structural characterization of the achieved films was enabled by access to PARADIM's Electron Microscopy Facility.

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