

## Poster-2-24

**Strontium Vanadate thin films growth for optical applications**Tancredi Thai ANGELONI and Stefano GARIGLIO*University of Geneva*

Light-matter interaction can be strongly enhanced by confining the electric field in optical cavities. These require a well-suited stacking of reflecting and transparent materials selected for the frequency range of interest. In our study, we target the Terahertz spectrum and have chosen the SrVO<sub>3</sub> compound for its high reflectivity in this frequency range.[1] We report results on the growth of SrVO<sub>3</sub> thin films by pulsed laser deposition unraveling the complex dependence of resistivity and crystalline quality on the Ar/O<sub>2</sub> growth atmosphere as well as laser fluence and target-substrate distance. The investigation of electric transport reveals the role of electron-phonon coupling in the conduction of this material, in line with recent literature.[2] Optical measurements performed by Fourier Time-domain InfraRed spectroscopy show that the films reflectivity window is within the scope of our applications.

[1] Mathieu Mirjolet et al. "Electron-Phonon Coupling and Electron-Phonon Scattering in SrVO<sub>3</sub>". In: *Advanced Science* 8.15 (2021), p. 2004207.

[2] Mathieu Mirjolet et al. "Optical Plasmon Excitation in Transparent Conducting SrNbO<sub>3</sub> and SrVO<sub>3</sub> Thin Films". In: *Advanced Optical Materials* 9.17 (2021), p. 2100520.