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Thin Film Substrates from the Raman spectroscopy point of view[1] LEV GASPAROV, Department of Physics, University of North Florida, THEO JEGOREL, University of Technology, Troyes, France, LARS LOETGERING, SRIMANTA MIDDEY, Fraunhofer Institute for Laser Technology, Aachen, Germany, JAK CHAKHALIAN, Department of Physics, University of Arkansas, Fayetteville, Arkansas, USA — We have investigated ten standard single crystal substrates of complex oxides on the account of their applicability in the Raman spectroscopy based thin film research. In this study we suggest a spectra normalization procedure that utilises a comparison of the substrate's Raman spectra to those of well-established Raman reference materials. We demonstrate that MgO, $LaGaO_3$, $(LaAlO_3)_{0.3}(Sr_2AlTaO_6)_{0.7}$ (LSAT), $DyScO_3$, $YAlO_3$, and $LaAlO_3$ can be of potential use for a Raman based thin film research. At the same time TiO_2 (rutile), $NdGaO_3$, $SrLaAlO_4$, and $SrTiO_3$ single crystals exhibit multiple phonon modes accompanied by strong Raman background that substantially hinder the Raman based thin film experiments.

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Lev Gasparov
Department of Physics, University of North Florida

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