E^1_{2g} Band of Raman Spectral Characteristics of Nanostructured WS_2 Films Sputtered on Sapphire

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Abstract. This study presents the Raman spectral characteristics of WS_2 material sputtered on sapphire and subsequently sulfurized. The presented details of the Raman spectra follow the position and change of the E^1_{2g} and A_{1g} vibrational modes. From a physical point of view, the changes in the Raman spectral characteristics of WS_2 films depend on changes in the position of the excitation point, excitation wavelengths of the laser 532 nm and 632.8 nm and the presence of possible crystallographic defects. Lattice defects have a significant effect on the Raman spectrum of the monitored samples.