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Raman Spectroscopy and Scanning Electron Microscopy of the Bismuth Sillenites $Bi_{25}InO_{39}$ and $Bi_{25}FeO_{39}$[1] DANIEL J. ARENAS, THEO JEGOREL, LEV GASPAROV, University of North Florida, HIDEO KOHNO, Osaka University, CATALIN MARTIN, DAVID B. TANNER, University of Florida, MICHAEL W. LUFASO, University of North Florida — The Raman spectrum of $Bi_{25}InO_{39}$, a new type of bismuth sillenite, is reported along with the spectra of $Bi_{25}FeO_{39}$. Their spectra are remarkably similar to each other and to other bismuth sillenites reported in the literature. The similarities show that the new samples were successfully grown in the sillenite structure. The parameters of each Raman mode were obtained by fitting the spectra to a Lorentzian oscillator model, and the modes were assigned to symmetry-allowed modes of the I23 space group. The assignments were made by comparison to other materials with the sillenite structure. Scanning Electron Microscope images of the samples are also presented.

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