

Abstract Submitted  
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**Spectroscopic investigation on the electronic structure of a 5*d* band insulator SrHfO<sub>3</sub>** YUNSANG LEE, Y.K. SEO, D.J. LEE, Soongsil University, H.J. NOH, Chonnam National University — We investigated the high-energy electronic structure of a 5*d* perovskite SrHfO<sub>3</sub>. By using optical spectroscopy and O 1*s* x-ray absorption spectroscopy, the values of electronic structure parameters are estimated properly. In particular, the crystal field splitting energy, which is closely associated with the *p* – *d* hybridization strength, is as high as 5 eV, and the Sr 4*d* bands appear to be strongly mixed with the Hf 5*d* bands. Moreover, the emission spectra with a 325 nm light excitation exhibit a sizable strength near 500 nm at low temperatures due to oxygen defects. These findings in SrHfO<sub>3</sub> are compared with electronic properties of similar compounds, 3*d* SrTiO<sub>3</sub> and 4*d* SrZrO<sub>3</sub>.

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