RF Sputtering by Rhawan Sr$_2$FeMoO$_6$ Fabrication of Sr$_2$FeMoO$_6$ thin films by RF Sputtering

Hee-Uk Ryu, Ho-Jun Sun
Department of Materials Science and Engineering, Kunsan National University

Abstract: The search for new magnetic and ferroelectric materials for spintronics has led to the development of a new class of materials known as double perovskites. Among these, Sr$_2$FeMoO$_6$ (SFMO) is a promising candidate for such applications due to its unique magnetic properties. This work investigates the fabrication of Sr$_2$FeMoO$_6$ thin films using RF sputtering. The films are prepared on various substrates, and their structural and magnetic properties are studied. The results show that the as-deposited films exhibit a single-phase crystalline structure with a perovskite-like crystal structure. The magnetic properties of the films are studied using magnetic susceptibility measurements, and it is found that the films exhibit ferromagnetic behavior with a Curie temperature of approximately 400 K. The results of this study suggest that Sr$_2$FeMoO$_6$ thin films can be a promising candidate for applications in spintronics and magnetoelectronics.

Key Words: Sr$_2$FeMoO$_6$, conductive oxide, Thin film, Electrode, RF Sputtering