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## General Program & Exhibit Guide



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■ **S4F – P004 METAL-INSULATOR TRANSITION IN  
THE PLASMA-TREATED  $\text{SrRuO}_3$  THIN FILM**

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## METAL-INSULATOR TRANSITION IN THE PLASMA-TREATED SrRuO<sub>3</sub> THIN FILM

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SrRuO<sub>3</sub> is a conductive magnetic oxide, which shows paramagnetic at room temperature and ferromagnetic below 160 K. Metal-insulator transition in SrRuO<sub>3</sub> epitaxial thin films has been attracted considerable attention because of its important technological issues.<sup>[1]</sup> Recently, metal-insulator transition in plasma-treated SrRuO<sub>3</sub> thin films could be explained in terms of Anderson transition due to the oxygen deficiency.<sup>[2]</sup> The Hall resistivity of our SrRuO<sub>3</sub> films contained the anomalous Hall contribution. The sign changes at certain temperature indicated that the Berry-phase mechanism could be act as the main anomalous Hall effect in SrRuO<sub>3</sub>.<sup>[3]</sup> According to these results, we propose that the transport properties of SrRuO<sub>3</sub> thin films were significantly affected by plasma treatment.

Keywords: SrRuO<sub>3</sub>, Thin Film, Plasma-treatment

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