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In-situ measurements of Stress Relaxation across Metal Insulator Transition in Correlated Oxide Thin Films VISWANATH BALAKRISHNAN, SHRIRAM RAMANATHAN, Harvard School of Engineering and Applied Sciences — Stress relaxation across the metal-insulator transition in correlated oxide thin films such as VO_2 and $SmNiO_3$ is of great importance since it could be directly related to the symmetry breaking structural component of the transition and also affects the properties and performance of the electronic devices significantly. We present in-situ stress relaxation measurements across the thermally triggered metal insulator transition and its impact on the transition characteristics and stability. Mesoscopic size effects, micropatterning and geometrical confinement effects on the metal insulator transition and associated stress relaxation will be addressed. Correspondence between onset of the electrical transition with stress relaxation leads to several interesting observations regarding the transition dynamics and will be discussed.

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