

# **Tunable-Composition Multi-Component Thin Films using Split-Target Pulsed Laser Deposition**

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A new technique has been developed that uses pulsed laser deposition (PLD) with a two-part (split) ablation target to grow thin layers of a multi-component oxide film with improved control over the resultant film elemental composition. One often heralded advantage of PLD for growth of chemically complex materials is stoichiometric transfer of the target material to the substrate. In some cases, though, target stoichiometry is preserved only under very specific deposition conditions that vary depending on the target material and the substrate temperature. Such conditions are often difficult and time-consuming to determine. The new technique overcomes these difficulties, and has been used to demonstrate the ability to grow mixed-metal oxide films of varied stoichiometry from a single split target.

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