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Effects of thickness and substrate properties on cracks in thin films bonded to an elastic substrate[1] DONG HYUN KIM, WON BO LEE, Seoul Natl Univ — Cracks occurring in thin films caused by residual tension can change desired film properties and lead to flaws or failures. Since the geometry of cracks or flaws is governed by the fracture properties of the interface and the substrate, in addition to known effects of film thickness, we investigate crack formations according to the film thicknesses using thermal deposition. Also by using different kinds of substrates and films, the effects of residual stress and elastic moduli on crack formation are investigated. As a result, several dimensionless quantities describing the cracks of thin films can be introduced.

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