Blister shapes of thin films randomly deposited on adhesive substrates

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When a flexible sheet is randomly deposited on an adhesive substrate bubbles and blisters are usually produced. The same phenomenon is commonly observed during delamination processes of thin layers induced by differences in thermal expansion coefficients or differential swelling of the materials [1]. Although they are usually disastrous, these blisters may be useful for flexible electronics applications if they are produced in a tailored fashion [2]. In the case of liquid adhesion, mechanical properties may also be deduced from monitoring the shape of controlled blisters [3]. We propose here to describe how relevant mechanical properties of the thin sheet can be inferred from the observation of blisters simply obtained by carelessly depositing the flexible sheet on the adhesive substrate.

Références

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