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Film Stress Relief: A Practical Guide to Adjusting Process Parameters

By

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A process engineer’s success depends, in large part, on how tightly he or she is able to control process parameters. Reducing film stress is a prime example of how engineers can successfully control their process outcomes by controlling several process parameters, including process power.

Excessive film stress can cause problems ranging from cracking (so called crazing), wrinkling, curling, and peeling films to bent or shattered substrates. Even when film stress is not this extreme, it can dramatically reduce device lifetime. Although the potential problems are many, most of the time it is possible to control stress and achieve the film properties required.

In this talk, we provide a practical guide to controlling film stress by adjusting such process parameters as pressure, temperature, target-to-substrate distance, as well as advice on selecting the optimal type of process power, including pulsed-DC.

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