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Radial Thickness Profiles of Spincoated Thickness Gradient Films MONIKA MICHALEK, BERNIE NICKEL, JOHN DUTCHER, University of Guelph — By dropping a polymer solution onto a spinning substrate at a position displaced from the axis of rotation, one can produce a film in which the thickness increases with increasing radial distance (thickness gradient film). Since each film contains a continuous range of thickness values, one can track subtle changes in the physical properties with film thickness by using a local probe of the film properties. We have used two such local probes, focused ellipsometry and atomic force microscopy, to measure the radial thickness profiles. We have also developed a simple, fluid flow model that describes the dependence of the polymer film thickness on radial distance from the axis of rotation. A detailed comparison between the measured and calculated radial thickness profiles will be discussed.

> John Dutcher University of Guelph

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