

Abstract Submitted  
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**Detection of the precursor layer in front of the moving contact line using fluorescence microscopy** HOSSEIN KAVEHPOUR, Mech. and Aero. Eng., UCLA — For wetting fluids a microscopic film, which is known as the precursor film, exists at the front of the moving contact line. The structure of this thin film has been studied theoretically, but previous experimental investigations were limited by the resolution of the measurement system (lateral or vertical) required to capture the complete scope of this feature. We studied the evolution of the profile of a spreading droplet near the moving contact line using a total internal reflection fluorescence microscope (TIR-FM). The TIR-FM system can detect nanoparticles and fluorescence materials approximately 100 nm from the substrate with high spatial resolution. The dynamic characteristics of the precursor films have a good agreement with the available theoretical results.

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