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Low Interfacial Tension Measurement with Synthetic Schlieren Imaging AVANISH MISHRA, VARUN KULKARNI, JIAN-WEI KHOR, STEVE WERELEY, Purdue University — Interfacial tension in liquid-liquid systems can be deduced by measuring shape of the static meniscus profile near a vertical solid wall. When interfacial tension is low (less than 1 mN/m), meniscus becomes too small in size to be properly measured by side view imaging. In this work, instead of relying on the side view imaging, we use the Free Surface Synthetic Schlieren (FS-SS) method for the measurement of surface gradient of the meniscus from top view images. The interfacial tension is estimated by fitting the measured surface gradient profile with the theoretical results. Since this method utilizes distortion in a background pattern for estimating the surface gradient, it allows us to measure very low values of the interfacial tension.

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