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**Modern applications of shadowgraph imaging**[1] RAFAEL CASTREJÓN GARCÍA[2], Universidad Nacional Autonoma de Mexico, JOSE RAFAEL CASTREJÓN-PITA[3], GRAHAM D. MARTIN, IAN M. HUTCHINGS, University of Cambridge — Over the last hundred years the shadowgraph technique has been extensively used in the study of fluid dynamics, the visualization of objects in motion and in the optical inspection of transparent media. Shadowgraphy is often considered an inexpensive but powerful tool to visualize liquids and is generally used to obtain qualitative properties, such as shapes and motion behavior of gases and liquids. In this work, the shadowgraph technique is combined with digital image analysis generate quantitative data. Three experimental systems are described. The first example is a setup developed to visualize and quantify the droplet size distribution in sprays. The second is a shadowgraph system used to record and analyze the profile of modulated continuous jets in order to measure the dynamic surface tension via the Raleigh-Weber model. The final system uses shadowgraph images of moving droplets to identify and record their instantaneous position and direction of motion.

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