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**PIV Measurements in Turbulent Impinging Jets of Dilute Polymer Solutions** R. MEJIA-ALVAREZ, K.T. CHRISTENSEN, Mech. Science and Engineering Dept., Univ. of Illinois — Turbulent impinging jets are commonly employed in technological applications like drying, scouring, cooling and heating because of high heat-transfer rates achievable in the impingement region. This effort explores a possible modification of turbulence (and therefore transport) in this flow configuration through the addition of a small amount of polymer to a submerged turbulent impinging water jet at  $Re \cong 24,000$  and a nozzle-to-plate spacing of  $6D$ , where  $D$  is the exit diameter of the jet nozzle. Particle image velocimetry (PIV) is used to acquire large ensembles of instantaneous velocity fields in an impinging jet with plain water as well as two different dilute solutions of polyethylene oxide (50 and 100 ppm). A high-resolution ( $4k \times 2.75k$  pixels) CCD camera is employed to simultaneously resolve the flow in the region between the jet exit and the impingement surface as well as several diameters of the wall jet formed by this flow configuration. The statistical character of the turbulence in the jet-development, impingement and wall-jet regions is contrasted between the plain water and polymer solution cases. The dominant structural features of these flow regions are also identified and compared.

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