

Abstract Submitted  
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**Photochromic flow visualization in silicone oil for demonstrations and experiments** ENRICO FONDA, New York University, STEPHEN R. JOHNSTON, DEVESH RANJAN, Georgia Institute of Technology, KATEPALLI R. SREENIVASAN, New York University — Photochromic dyes change color when illuminated, usually with UV light. As tracers for flow visualization they are non-intrusive, can selectively color the fluid, and are suitable for complex and confined flows. Availability of cheap 405nm high-power lasers combined with advances in image acquisition and image-processing technology, make these tracers particularly effective in creating convenient and engaging educational demonstrations as well as in qualitatively exploring flow structures. We present two low-cost demonstrations: laminar-flow reversibility using a Taylor-Couette device and a thermal convection flow. We also report our experience in studying large scales in high Prandtl numbers Rayleigh-Bénard convection.

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