ADVANCES IN LASER TECHNIQUES FOR SHOCK TUBE STUDIES OF CHEMICAL KINETICS

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The role of lasers in shock tube studies of chemical kinetics has grown substantially since the first applications about 25 years ago, leading to dramatic improvements in experimental capabilities for quantitative measurements of reaction rate coefficients at high temperatures. Representative recent results will be presented for three experimental techniques: pulsed-laser photolysis for direct preparation of radical reactants; CW narrow-linewidth laser absorption (UV, visible and IR) for quantitative species detection; and CW/FM absorption techniques for reduced noise and increased sensitivity in species detection.