**131a Novel Computational and Experimental Methods in Mixing**

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Experimental data and numerical results for full-field (3-D), time-resolved, velocity-vector fields are nonexistent for mixing systems. Yet these are needed for the full validation of mixing computations. This paper will review our progress to accomplish these lofty goals for both an opposed-jet mixer and a turbine driven mixing vessel. For the opposed-jet system, the full data set is now available and parallel computations are well underway. Samples of the type of data available and the progress on the computations will be offered. For the turbine driven mixing vessel, the flow field is much more complicated than that of the opposed-jet. Thus, to have some idea as to the details of the flow field, stereoscopic (human) visual pictures were obtained of the detailed flow in the vicinity of a Rushton turbine from a convected view. Similar visual pictures for the flow around the baffles were obtained to complete the picture. These results will be the basis for the detailed measurements of the full-field (3-D), time-resolved, velocity-vector fields in both the impeller and baffle regions. These in turn can be used for the validation project for computational approaches.