

Mixing is Key to Combustion Reactions.

L-. S. Fan

Distinguished University Professor and Chair of Chemical Engineering
The Ohio State University, Columbus, Ohio

Telephone: 614/292-7907, Fax: 614/292-3769, email: fan@che.eng.ohio-state.edu

Abstract

A fundamental issue in effective combustion/gasification/liquefaction of fuels is mixing of gases with solids and/or liquids. Ohio State has pioneered the development of sensing techniques applicable at high temperature and high pressure. Examples of the pioneering work are shown in Electrical Capacitance Tomography and in Particle Velocimetry Tomography - techniques which gather information to validate flow codes. A newly discovered advance in NN-MOIRT reconstruction has decreased computation time by orders of magnitude. These tools will be useful to the design validation, improvement, and scale-up of V21 components.