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Dual Luminescence Imaging for Two Phase Flow HIROTAKA SAKAUE, Univ of Notre Dame, KATSUAKI MORITA, JAXA — Dual luminescence imaging gives time-resolved information of fluid dynamic phenomena. It uses two luminescent probes; one is sensitive to the detecting medium and the other as a reference. It is a non-intrusive technique, and both luminescent outputs are captured by a high-speed color camera as color-filtered images. By taking a ratio of the two images at the same time frame, this imaging technique can give time-resolved information. It is suitable for a moving and free surface objects. It is also suitable for a measurement where a target is small to mount a conventional thermocouple and pressure probes. Some of the applications of this imaging are described in the presentation, such as icing and boiling phenomena.

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