

Abstract Submitted  
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**Temperature-Cancelled Anodized-Aluminum Pressure-Sensitive Paint for Unsteady Pressure Field Measurement** TAKUMA KURIKI, TAKESHI MIYAZAKI, The University of Electro-Communications, HIROTAKA SAKAUE, JAXA — A new temperature-cancellation method for pressure-sensitive paint (PSP) technique is introduced. This uses an intermediate range of two luminescent peaks which have opposite temperature dependencies. This method gives an advantage from a conventional two-color method especially in unsteady pressure field measurements by using a single band-pass filter. The present method is applied to anodized-aluminum pressure-sensitive paint (AA-PSP), which is known as one of the fastest PSPs. Peak control study as well as temperature- and pressure-calibrations is included. The dipping deposition parameters, such as the luminophore concentration and the dipping duration, are related to the peak control. A peak-controlled AA-PSP shows temperature cancellation in the calibrated temperature range (10 to 50 °C). Pressure sensitivity is 0.4, which is comparable to that of conventional AA-PSP. The present temperature-cancellation method will be demonstrated in unsteady pressure field of an impinging jet in the final version.

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