INTELLIGENT STRUCTURAL ELEMENTS
COVERED BY PIEZOELECTRIC HIGH-POLYMER FILM

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Abstract- If a piezoelectric material is deformed, the local electric field is caused by the
electromechanical interaction. When a structural element with surface defects is
subjected to the stress, the strain distribution appears also on the opposite surface to the
defects. Such localized strain distribution can be measured by the electric potential
distribution on a piezoelectric film mounted on the smooth surface. This paper shows that
back-surface defects in typical structural elements can be visualized by mounted PVDF
thin film.