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A Proposal of Local Indentation Techniques for Mechanical Property Evaluation

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Abstract : General light metal alloys are often developed in the material of transportation equipment such as automobiles and aircraft. Among the light metal alloys, magnesium is the lightest structural material with superior specific strength and many attractive physical and mechanical properties. However, magnesium alloys were difficult to obtain the mechanical properties at warm temperature. The aims of present work were to establish an analytical relation between mechanical properties and plastic flow induced by local indentation. An experimental investigation of the local strain distribution was carried out using a specially designed local indentation equipment in conjunction with ARAMIS based on digital image correlation method.

Keywords : indentation, magnesium, mechanical property, lightweight material, ARAMIS
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