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**Laser shock peening effect on the dislocation transitions and grain  
refinement of Al-Mg-Si alloy**

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**Abstract**

This paper systematically investigates the effect of laser shock peening without coating parameters on the microstructural evolution, and dislocation configurations induced by ultra-high plastic strains and strain rates. Based on an analysis of optical microscopy, polarized light microscopy, transmission electron microscopy observations and residual stress analysis, the significant influence laser shock peening parameters due to the effect of plasma generation and shock waves propagation has been confirmed. Although the optical microscopy results

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