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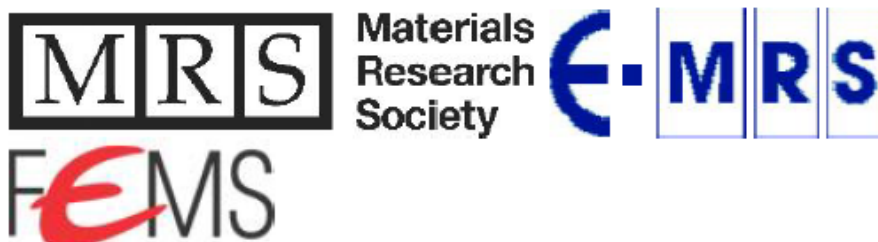
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Magnetic and mechanical properties of nickel-based superalloy after laser induced deformation

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Nickel-based superalloys are used in load-bearing structures at elevated temperature and pressure and in harsh environment. Nickel based superalloys have good mechanical properties, good oxidation and corrosion resistance. Among the most demanding applications for a structural material are those in the turbine engines, in first place for turbine blades. Nickel based superalloys consist of nickel solid solution, strengthening γ' phase (Ni_3Al) and carbides. At room temperature turbine blades are paramagnetic. The earlier studies reported increase in magnetic properties of Ni_3Al after induced deformation. In this paper, the magnetic properties of nickel-based superalloy after deformation induced by laser waves are investigated and discussed. Mechanical characteristics are analyzed with regards to changes of magnetics properties.