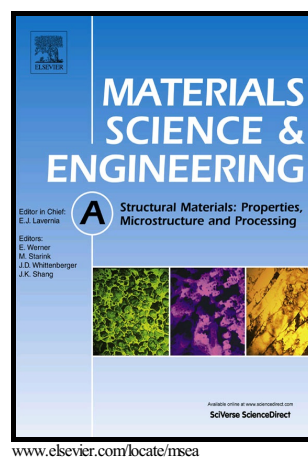


Effect of Er contents on the microstructure of long period stacking ordered phase and the corresponding mechanical properties in Mg-Dy-Er-Zn alloys

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Effect of Er contents on the microstructure of long period stacking ordered phase and the corresponding mechanical properties in Mg-Dy-Er-Zn alloys

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Abstract: The influence of Er contents on the mechanical properties and microstructure of the Long period stacking ordered (LPSO) phases $\text{Mg}_{96.6}\text{Zn}_{0.91}\text{Dy}_{2.17}\text{Er}_{0.32}$ and $\text{Mg}_{96.23}\text{Zn}_{0.88}\text{Dy}_{2.21}\text{Er}_{0.68}$ alloys have been studied. The results showed that the LPSO structures in the two alloys are 18R-type in the as-cast state. And co-existence of 18R-type and 14H-type LPSO phases after heat-treated has been observed in the two alloys. After hot extrusion, the ultimate tensile strength (UTS), yield strength (YS) and elongation (EL) of the $\text{Mg}_{96.6}\text{Zn}_{0.91}\text{Dy}_{2.17}\text{Er}_{0.32}$ alloy have reached the value of 303.42 MPa, 172.76 MPa and 18.31%, respectively. The

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