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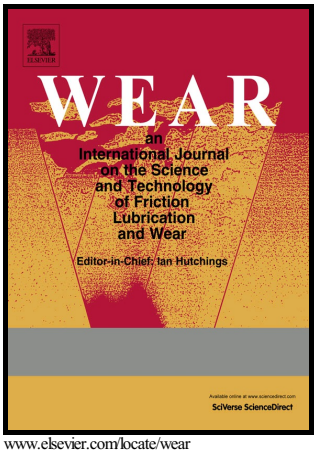

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Abstract

Nanocrystalline Al-Ni-Gd-Co alloys with exceptionally high hardness have been recently developed from amorphous precursors. In the present work, the reciprocating sliding wear in the gross slip regime of these novel nanocrystalline Al-based alloys has been investigated under small amplitude oscillatory sliding motion using a martensitic chrome steel as the counter material. When compared to pure Al or Al-12Si alloy, these nanocrystalline alloys exhibit excellent wear resistance and a lower coefficient of friction when sliding against steel. The