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Study Ni70al20Si10prepared by mechanical alloying

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Abstract : Alloys based on nickel, aluminum and siliconhave been extensively studied because they are of great interestfor high temperature structural applications (low density, highspecific strength, greater resistance to oxidation, hightemperature resistance). The properties of these materials can beimproved by mechanical alloying. In this work we havedeveloped and studied intermetallic Ni70al20Siprepared bymechanical alloying. The powder mixtures were crushed in aplanetary ball mills for synthesizes shades off balance, the millingtime was a factor in the study of structural changes of thiscompound to 50 hours of milling. Characterizations by SEM andXRD are used to derive the properties of this compound.

Keywords : intermetallic alloy, Mechanical Alloying, Aluminum- Nickel-Silicon, SEM, XRD