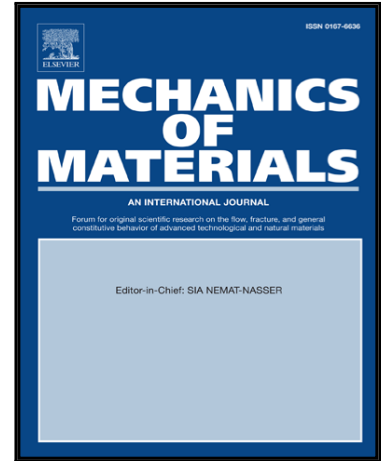


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Micromechanical study of elastic-plastic and thermoelastic behaviors of SiC nanoparticle-reinforced aluminum nanocomposites

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Highlight

- A micromechanics model is developed to investigate the thermal and mechanical behaviors of Al nanocomposites containing SiC nanoparticles.
- Multiaxial elastoplastic stress-strain curves are evaluated.
- The elastic-plastic and thermal expansion responses are significantly affected by the interphase characteristics.
- The reduction of the nanoparticle diameter results in the improvement of nanocomposite effective properties.

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