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## **Fatigue and fracture toughness of cryogenic-grade epoxy resin at low temperature**

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Thermosetting epoxy resins are commonly used as adhesives, sealants, and matrices of insulation material of superconducting magnets. In the present work, fatigue and fracture toughness of a cryogenic-grade epoxy resin were investigated at room and liquid nitrogen temperatures to establish sound data bases for practical applications. The fatigue testing of the epoxy was conducted with strain and stress-controlled modes with various strain and stress amplitudes. The fracture toughness, K<sub>IC</sub>, was tested with a compact tension specimen according to standard ASTM D 5045. The results of fatigue and fracture toughness testing will be useful in engineering designs.

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