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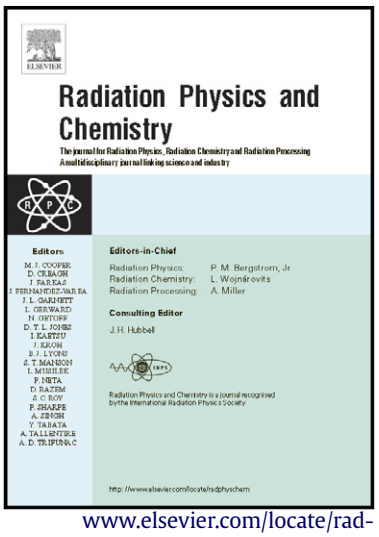

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NMR relaxometry measurements of Fricke gel dosimeters exposed to neutrons

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Abstract

Fricke infused gel matrices offer several features making them suitable for dosimetric applications; among these are tissue equivalence, low cost and ease of preparation. Their nuclear magnetic resonance (NMR) relaxation properties can be used as radiation detector for the dosimetry of beams used in cancer therapy. In recent years neutron capture therapy has been resumed for the treatment of various types of cancer and it requires three dimensional mapping of the neutron fields. In this work, we investigated this particular application through NMR relaxometry and MR imaging of Fricke gels exposed to neutrons. We analyzed both the R_1 and R_2 relax-