

Polarisation and relaxation characteristics of irradiated polmeric materials at 1 K and at 2.5 T.

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The dynamic polarisation of nuclear spins requires the introduction of paramagnetic centres into potential target materials. A method of choice is the irradiation of such materials, in particular the inorganic materials lithium hydride and ammonia have been used in many nuclear and particle physics experiments with much success. As established as these materials are, a solid target material that can be handled at room temperature and in which the paramagnetic centre remains stable under these conditions would have many advantages. Initial experiments indicate that the polymeric materials may fulfil these criteria. Polyethylene and polypropylene was irradiated at various doses and subsequently analysed under standard polarised target conditions of 2.5 T and 1 K. The influence of annealing on the radical structure and the resulting change in polarisation characteristics are presented.

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