EFFECT OF NEUTRON IRRADIATION ON THE EPR SPECTRA OF $CuGeO_3$

E. Mosiniewicz-Szablewska[a], **L. Gladczuk**[a], **H.A. Dabkowska**[b], **B. Pytel**[c] **and H. Szymczak**[a]

[a]Institute of Physics, Polish Academy of Sciences, Warsaw, Poland
[b]Brockhouse Institute for Materials Research, McMaster University, Hamilton, Canada
[c]Institute of Atomic Energy, Swierk, Poland

9.7 cm

The influence of neutron irradiation on the electron paramagnetic resonance (EPR) spectra of the spin-Peierls compound $CuGeO_3$ has been investigated in the wide temperature range 2 - 300 K.
It was found that the irradiation induced appreciable changes in the EPR signal intensity, resonance linewidth and g-factor of this material. It was also shown that the irradiation leads to a decrease of the spin-Peierls transition temperature. For higher irradiation doses, an antiferromagnetically ordered phase can be observed at lower temperatures. This phase coexists with the spin-Peierls phase. The observed decrease in the spin-Peierls transition temperature after irradiation may be associated with some changes in topological and chemical short-range order or with the transmutation of the fraction of ^{63}Cu in the ^{63}Cu(n,α)^{60}Co reaction.

13.4 cm

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Corresponding author :
Ewa Mosiniewicz-Szablewska

Address for correspondence :
Instytut Fizyki PAN
Al. Lotników 32/46
02-668 Warszawa

Email address :
mosin@ifpan.edu.pl