

STUDIES OF ORIENTATION
EFFECTS IN CRYSTALS BY ISOLATED
RESONANCES IN NUCLEAR REACTIONS

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S u m m a r y

The isolated resonance of a nuclear reaction occurring at impurity interstitial atoms has been used for the first time to study orientation effects. The resonance of the $^{13}\text{C}(\text{p},\gamma)^{14}\text{N}$ reaction, provided the proton energy of 1.7476 MeV, was used to investigate the proton flux distribution in the (0001) planar channel of the single-crystal solution Re–0.4 at.% of ^{13}C . Some specific features of the γ -quantum yield of the reaction and their dependences on the energy have been established. Electron energy losses of channeling protons have been measured. The γ -quantum yield of the channeling-proton-excited reaction has been demonstrated to depend on the amplitude of thermal vibrations of carbon atoms.