FT-NMR Detection of ^{45}Sc, ^{49}Ti and ^{93}Nb in TiO_2 Single Crystal*

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In order to determine the electric quadrupole moment of the short-lived β-emitter ^{41}Sc from the quadrupole coupling constant in TiO_2, we measured the field gradient by detecting the Fourier-Transformed-NMR of stable isotope ^{45}Sc doped in TiO_2. Also, in order to study the electronic structure of impurities systematically, EFGs were measured for ^{45}Sc, ^{49}Ti and ^{93}Nb in a TiO_2 single crystal.

Key words: TiO_2; ^{41}Sc; Quadrupole Moment; Transition Metal Impurity; Electric Field Gradient.

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