Nuclear Quadrupole Interactions of ^{27}Al in Alexandrite Single Crystal *

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In an alexandrite single crystal four sets of NMR spectra for ^{27}Al($I=5/2$) were observed in the crystallographic ab, bc, and ca planes. The Al(I) center has four magnetically inequivalent Al sites, whereas the Al(II) center has two. The nuclear quadrupole coupling constant and asymmetry parameter of Al(I) and Al(II) in an alexandrite crystal were determined. Within the experimental accuracy, our parameters turned out to have the same values as those of a chrysoberyl crystal.

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