Positive Temperature Dependence of Quadrupole Splittings in Mössbauer Spectra of Fe_{1.33}Nb_{2.67}Se_{10}

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The Mössbauer effect in the low-dimensional compound Fe\textsubscript{1.33}Nb\textsubscript{2.67}Se\textsubscript{10} has been examined between 78 and 414 K. An unusual positive temperature dependence of the quadrupole splittings was found above 250 K. As a possible origin a mechanism due to π bonding is suggested.

Key words: Low-Dimensional Compound; Fe\textsubscript{1.33}Nb\textsubscript{2.67}Se\textsubscript{10}; Mössbauer Effect; Quadrupole Splittings; π Bonding.