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Observation of phonon splitting in BaFe_2As_2 single crystals using infrared spectroscopy ALEXANDER SCHAFGANS, ANDREW LAFORGE, MUMTAZ QAZILBASH, University of California, San Diego, ATHENA SEFAT, DAVID MANDRUS, Oakridge National Laboratory, DIMITRI BASOV, University of California, San Diego — We present infrared spectroscopic results on the pnictide parent compound BaFe_2As_2 (Ba122) detailing direct observation of phonon splitting in the pnictide materials following the tetragonal to orthorhombic structural phase transition. We then compare these results with the optimally Co-doped superconductor Co-Ba122 in which only one, weak infrared-active phonon is observed. Finally, we explore these results to glean insights into the interplay between structural and spin density wave order.

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