Superconducting Enhancement in Nickel-Pnictide Superconductors
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relationship between phase criticality and superconductivity is understood in sev-
eral conventional systems, open questions remain in many families of high Tc su-
perconductors, wherein structure and magnetic order are closely linked. Utilizing
superconducting BaNi2As2 we are able to explore the behavior of superconductivity
near a structural instability decoupled from magnetic ordering. Here we present the
details and results of both Sr and Co substitutional studies in (Ba,Sr)Ni2As2 and
Ba(Ni,Co)2As2, respectively, comparing the evolution of structural and supercon-
ducting phases in each case. The resulting phase diagrams as well as the possible
mechanism for superconducting enhancement in these systems will be discussed.