



Figure 1. Phase diagram showing the dependence of the order parameter S on the composition x for the system $Fe_{1-x}Ni_x$. The diagram is divided into several regions, with the central region labeled 'paramagnetic' and the surrounding regions labeled 'ferromagnetic'.

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the present work shows that the activation and ordering energies of the defect array ($2V_{\text{L}} + 10V_{\text{I}}^{\text{II}}$) is about 1.8 eV . The activation energy of the defect array is $\Delta H_{\text{a}}(10^0) = 4.5 \text{ eV}$ at point A in Fig. 1. Thus, spontaneous formation of stable defect array could be as low as -6.1 eV at point B.

For isolated interacting ($2V_{Cu}^- + In_{Cu}^{4+}$) pair, we find that the pairing pushes up the deep In_{Cu} levels to positions much closer to the conduction band minimum (see also Fig. 1).

