Stability of charge-stripe ordered La$_{2-x}$Sr$_x$NiO$_{4+\delta}$ at one third doping

The stability of charge ordered phases is doping dependent, with different materials having particularly stable ordered phases. In the half filled charge ordered phases of the cuprates this occurs at one eighth doping, whereas in charge-stripe ordered La$_{2-x}$Sr$_x$NiO$_{4+\delta}$ there is enhanced stability at one third doping. In this paper we discuss the known details of the charge-stripe order in La$_{2-x}$Sr$_x$NiO$_{4+\delta}$, and how these properties lead to the one third doping stability.

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