

Abstract Submitted
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Giant impact of magnetic impurity on stability of stripe order in high-Tc cuprate MASAKI FUJITA, Institute for Materials Research, Tohoku University, MASANORI ENOKI, Department of Physics, Tohoku University, SATOSHI IIKUBO, KAZUYOSHI YAMADA, World-Premier-International Research Center Initiative, Tohoku University — To study the stability of stripe orders in cuprate oxides through impurity-effect, we performed neutron-scattering experiments on $\text{La}_{1.88-y}\text{Sr}_{0.12+y}\text{Cu}_{1-y}\text{M}_y\text{O}_4$ ($y=0$ for $\text{M}=\text{Cu}$, Zn and $y=0.01$ for $\text{M}=\text{Ga}$, Fe). Well-defined incommensurate peaks from charge-density-wave order were induced in the low-temperature-orthorhombic phase (LTO) by impurity substitution, and the scattering intensity is much stronger in the Fe-doped system than in the Zn-doped one. Integrated intensity of magnetic peak from spin-density-wave order was also enhanced by Fe-doping, while it does not change so much by Zn- and Ga- substitutions. These results indicate that the static spin and charge stripe orders can be realized in the LTO phase, and the stability is effectively induced by doping the magnetic impurity.

Masaki Fujita
Institute for Materials Research

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