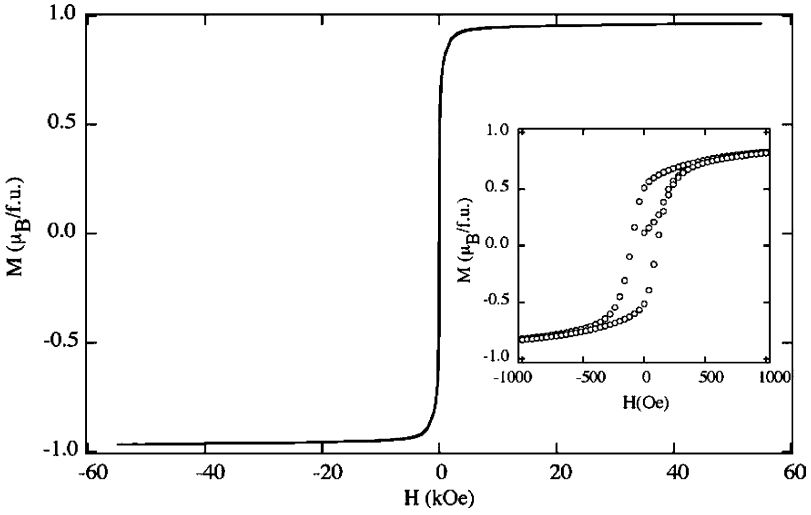

Fig. 5. The magnetization curve at 5 K of the Ca-containing phase. The inset is the enlargement of the low-magnetic-field part.

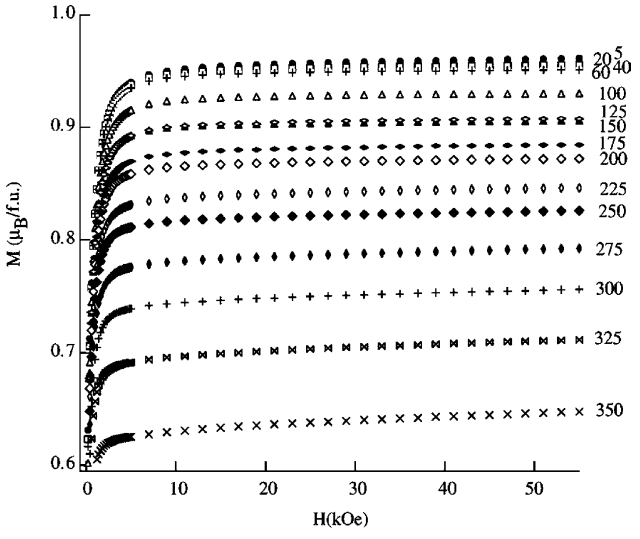

Fig. 6. The magnetization curves at various temperatures of the Ca-containing phase. The numbers shown indicate measuring temperatures in K.

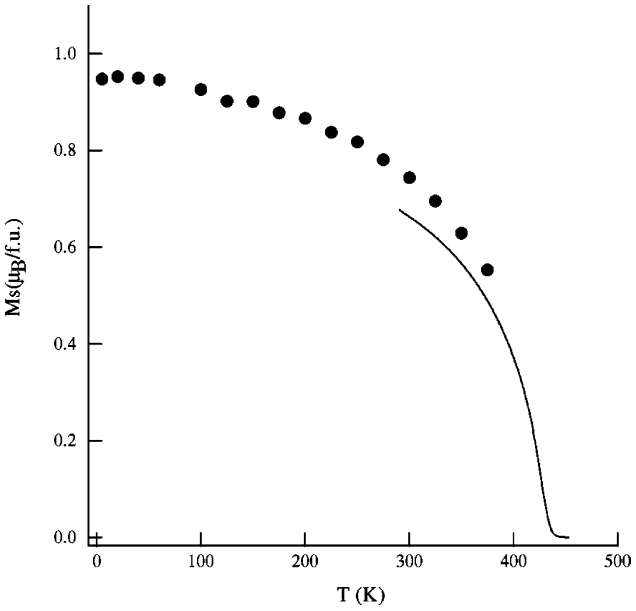

Fig. 7. Spontaneous magnetization M_s of the Ca-containing phase. The solid line indicates high-temperature-magnetization data at 1 kOe measured by VSM.

present transition temperature of 440 K is unusually high in cuprates.

Electric resistivity of the Ca-containing sample was several Ω cm at room temperature and it increased very steeply with decreasing temperature. Assuming a localized electron system and based on the stoichiometric composition of $Sr_8CaRe_3Cu_4O_{24}$, *B*-site cation combinations may be ($3Re^{6+}$, $4Cu^{3+}$, Ca^{2+}) or ($3Re^{7+}$, Cu^{3+}, $3Cu^{2+}$, Ca^{2+}), where both Re^{6+} and Cu^{2+} are $S=1/2$ ions with $5d^1$ and $3d^9$, respectively. In either case, three spin 1/2 ions should be present in the unit cell.

Experimentally, it was found that the oxygen content of a sample affects drastically the ferromagnetism. For instance, we made a sample with a nominal composition of $Sr(Ca_{0.125}Re_{0.375}Cu_{0.5})O_{2.75}$, i.e., the oxygen content was decreased expecting a hole-free system with Re^{6+} and Cu^{2+}. The sample thus prepared was not ferromagnetic but paramagnetic down to 5 K. A similar result was obtained on the Ca-free system; as an example, the $Sr_{1.15}Re_{0.35}Cu_{0.5}O_3$ sample (its XRD pattern is shown in Fig. 1) was paramagnetic down to 5 K whereas an oxygen-rich sample with $Sr_{1.15}Re_{0.35}Cu_{0.5}O_{3.2}$ showed ferromagnetism at room temperature. For the appearance of ferromagnetism, doping of holes and their ordered localization seem to be indispensable.

To consider the magnetic structure, it may be worth noting that the Cu2 sites form a network of