Supplemental materials at articles

"Magnetization of the $Mn_{1-x}Fe_xSi$ in high magnetic field up to 50 T: possible evidence of a field-induced Griffiths phase"

Field dependences of magnetization at fixed temperatures $M(B, T = \text{const})$ were measured with the help of SQUID magnetometer (Quantum Design) up to $B = 5$ T for the $Mn_{1-x}Fe_xSi$ samples with iron concentration $x < 0.2$. Typical experimental results are shown in Fig. S1. Low field sections of $M(B, T = \text{const})$ curves were approximated by linear law $M(B, T) = \chi_0(T) \cdot B$ (lines in Fig. S1). The obtained $\chi_0(T)$ dependences for each particular sample were analyzed in coordinates $\chi_0^{-1} = f(T)$ (Fig. S2). The obtained $\chi_0^{-1} = f(T)$ dependences are linear and may be presented in the form $\chi_0^{-1} = (T - \theta)/C$ corresponding to Curie–Weiss law with Curie constant C and paramagnetic temperature θ. These parameters were found from linear fits of the data in Fig. S2 and shown at the inset in Fig. 3 of the main text.

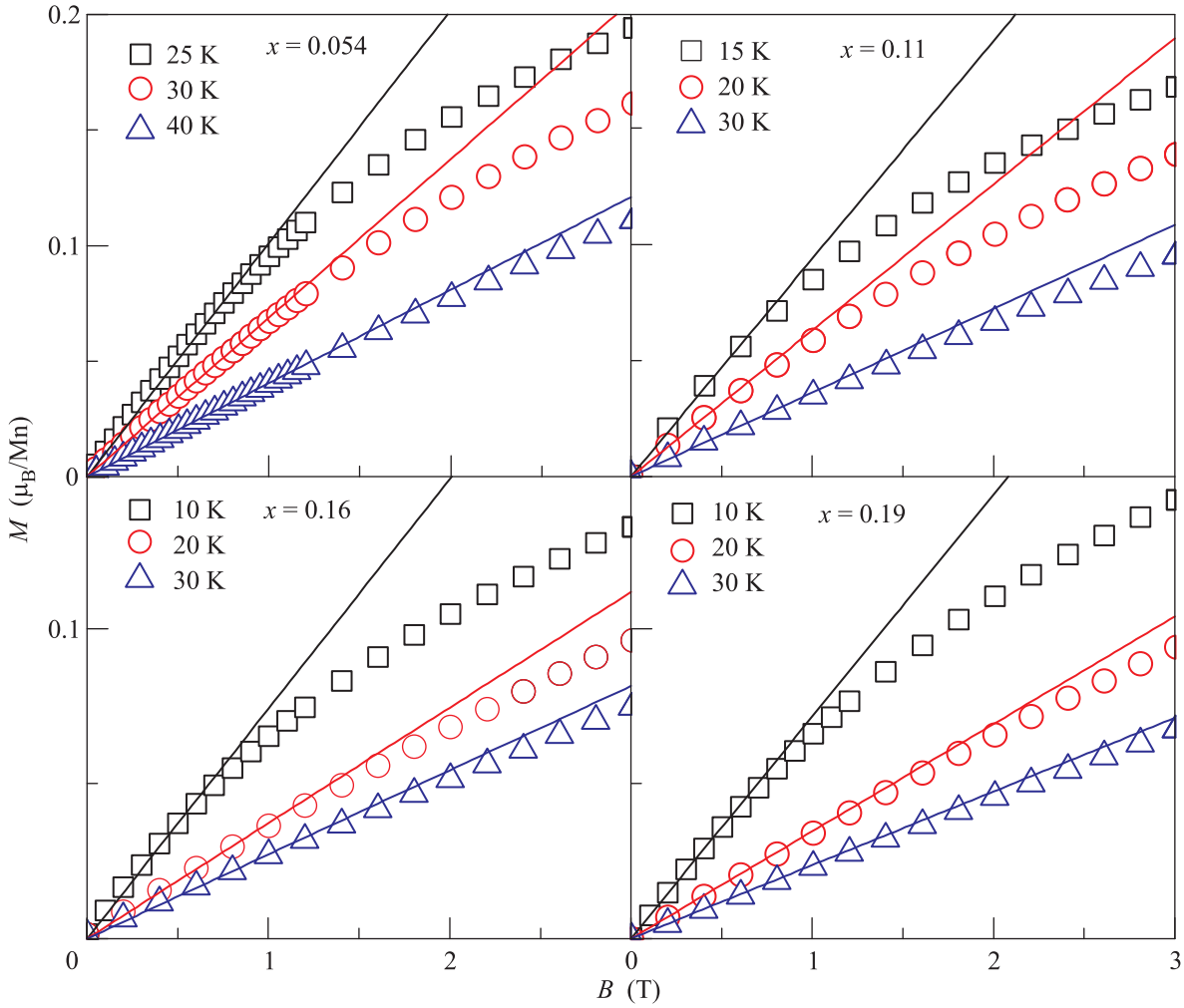

Fig. S1. Typical magnetization field dependences for different $Mn_{1-x}Fe_xSi$ samples in a weak magnetic field. Points — experiment, lines – approximation by linear law $M(B, T) = \chi_0(T) \cdot B$

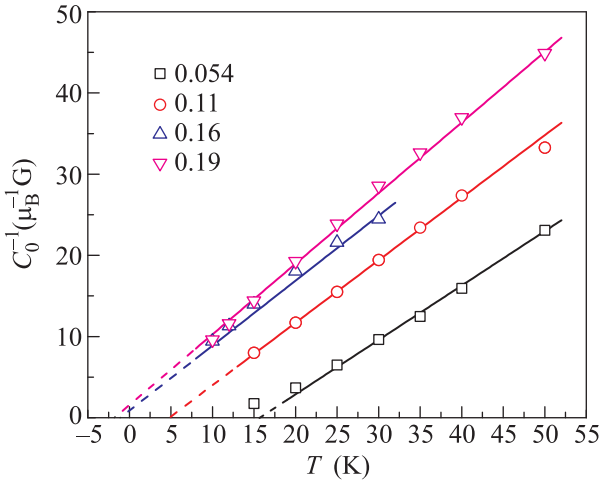

Fig. S2. Temperature dependences of the susceptibility $\chi_0(T)$ in coordinates $\chi_0^{-1} = f(T)$. Points – data obtained from analysis of the $M(B, T = \text{const})$ curves, lines — best fits with the help of equation $\chi_0^{-1} = (T - \theta)/C$