

Article

Charge-Ordering and Magnetic Transitions in Nanocrystalline Half-Doped Rare Earth Manganite $\text{Ho}_{0.5}\text{Ca}_{0.5}\text{MnO}_3$

Giuseppe Muscas, Francesco Congiu *, Alessandra Geddo Lehmann and Giorgio Concas

Dipartimento di Fisica, Università di Cagliari, I-09042 Monserrato, CA, Italy;
g.muscas@unica.it (G.M.); a.geddolehmann@gmail.com (A.G.L.); gconcas@unica.it (G.C.)

* Correspondence: franco.congiu@dsf.unica.it

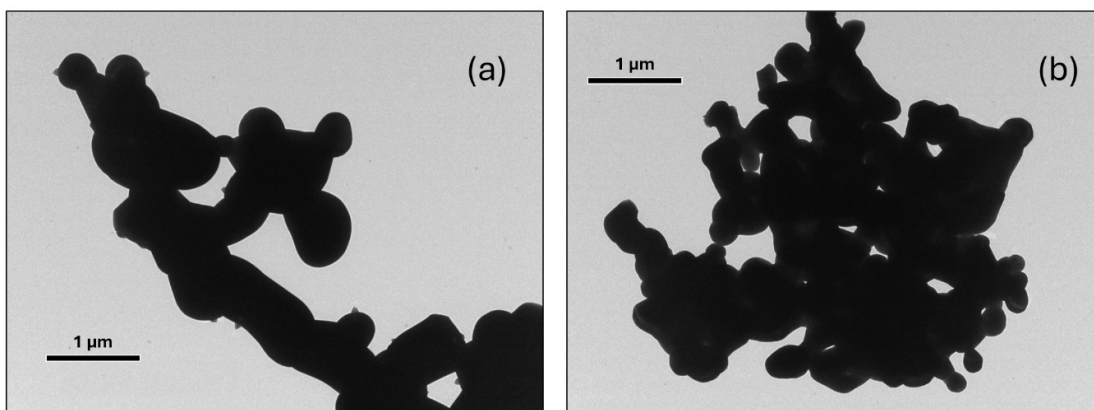


Figure S1: TEM image of the typical large agglomerates constituting sample T1000 (a) and sample T1100 (b).

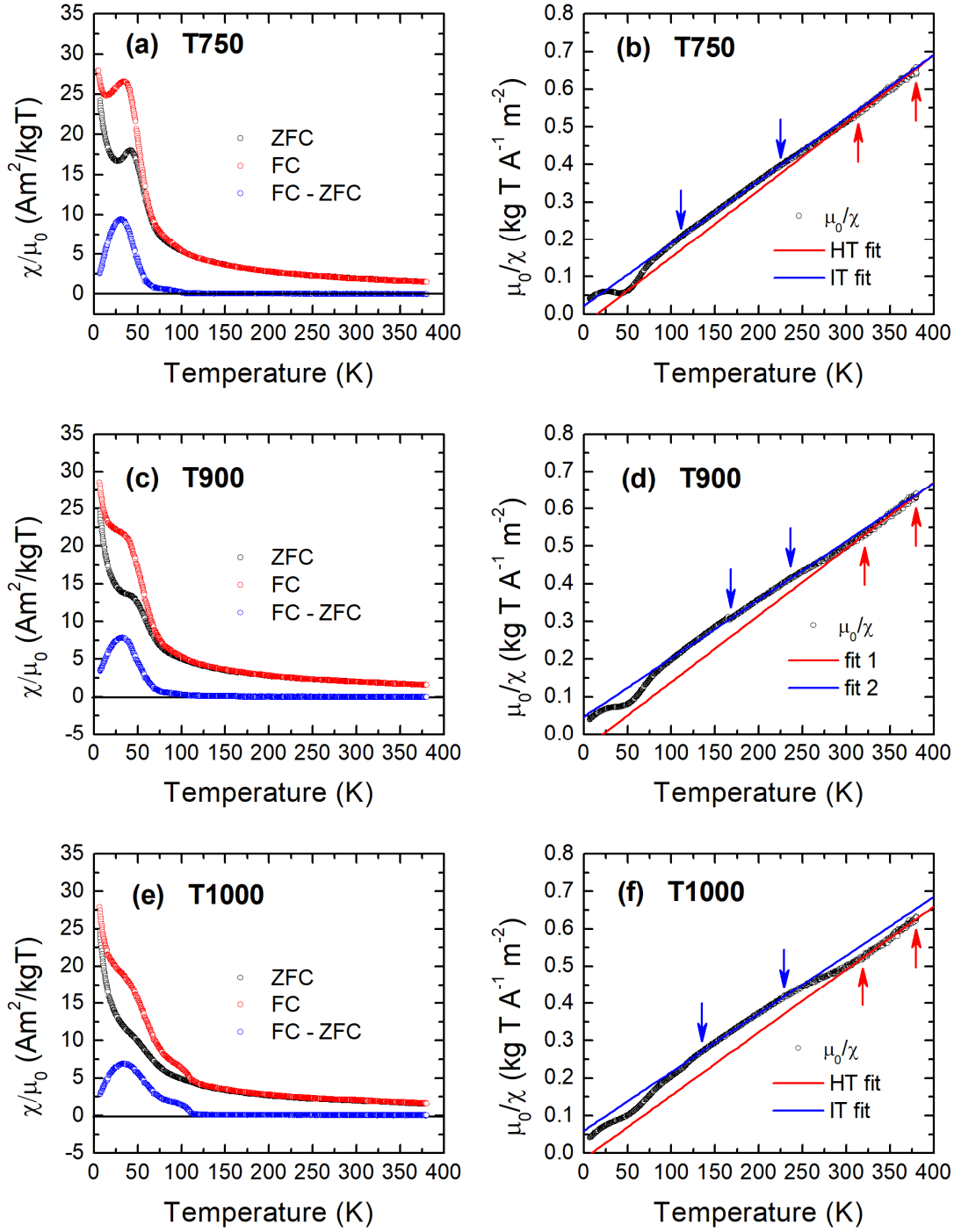


Figure S2: Sample 750: (a) ZFC susceptibility (black curve), FC susceptibility (red) and difference between them (blue) of the sample T750. (b) Reciprocal ZFC susceptibility; the experimental data (black curve) and the linear fit curves (red) are shown. (c) and (d): the same for the sample T900. (e) and (f); the same for the sample T1000. In panels (b), (d) and (f) the arrows delimit the two linear temperature ranges used in the fitting procedure.

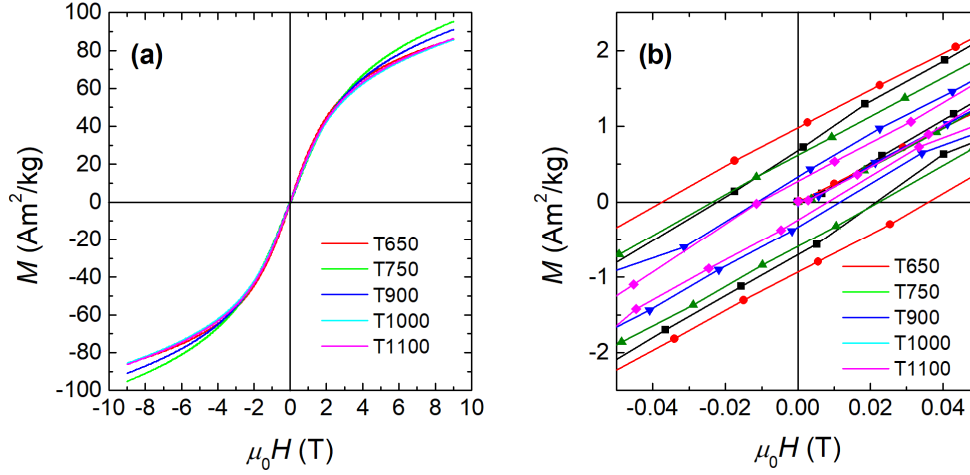


Figure S3: (a) ZFC magnetization vs field curves at 5 K of the samples T650 (red curve), T750 (green curve), T900 (blue curve), T1000 (cyan curve), and T1100 (magenta curve). (b) Same as (a) in the field range from -50 to 50 mT.

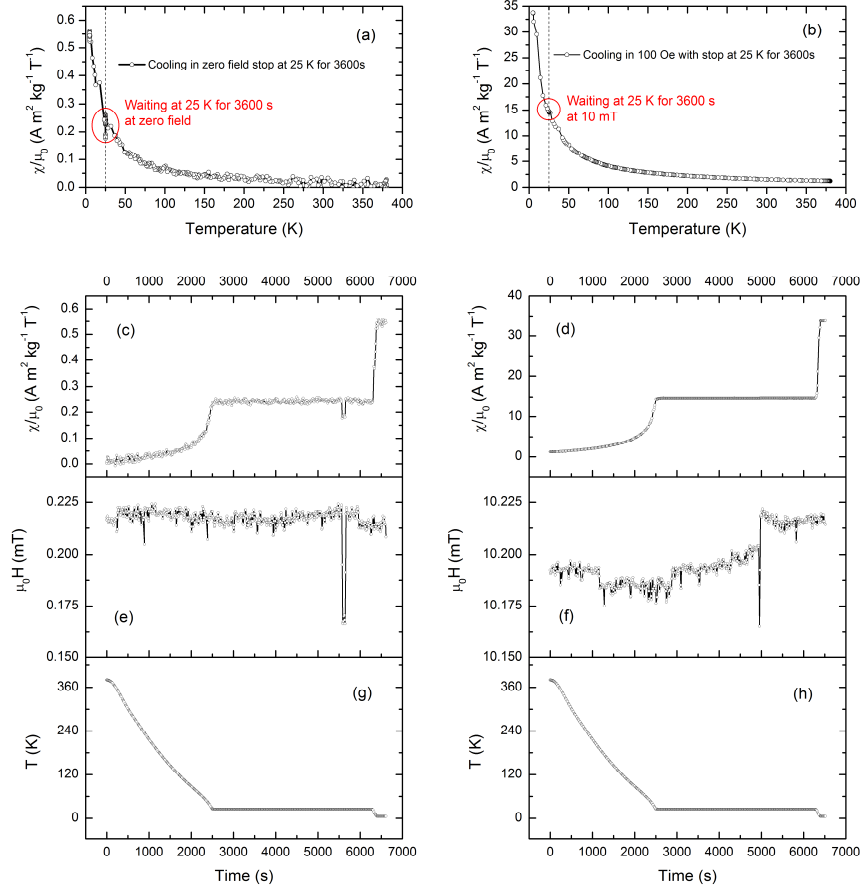


Figure S4: Aging measurements at 25 K for sample T650 in zero field (a) and in 10 mT field cooling protocol (b). Time evolution of susceptibility (c), residual magnetic field (e), and temperature (g) in zero-field cooling protocol. Time evolution of susceptibility (d), applied magnetic field (f), and temperature (h) in 10 mT field cooling protocol.

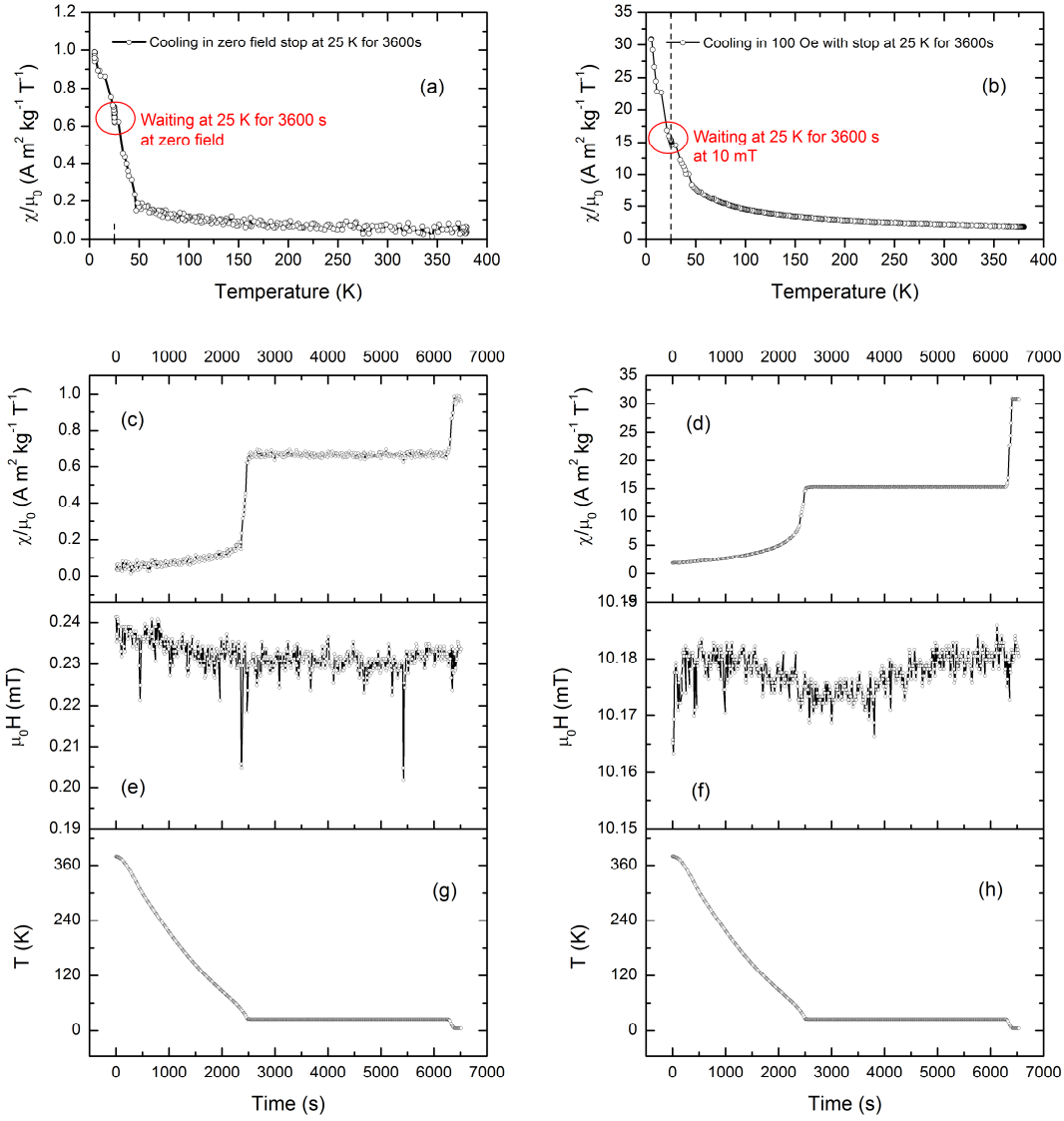


Figure S5: Aging measurements at 25 K for sample T1100 in zero field (a) and 10 mT field cooling protocol (b). Time evolution of susceptibility (c), residual magnetic field (e), and temperature (g) in zero-field cooling protocol. Time evolution of susceptibility (d), applied magnetic field (f), and temperature (h) in 10 mT field cooling protocol.