

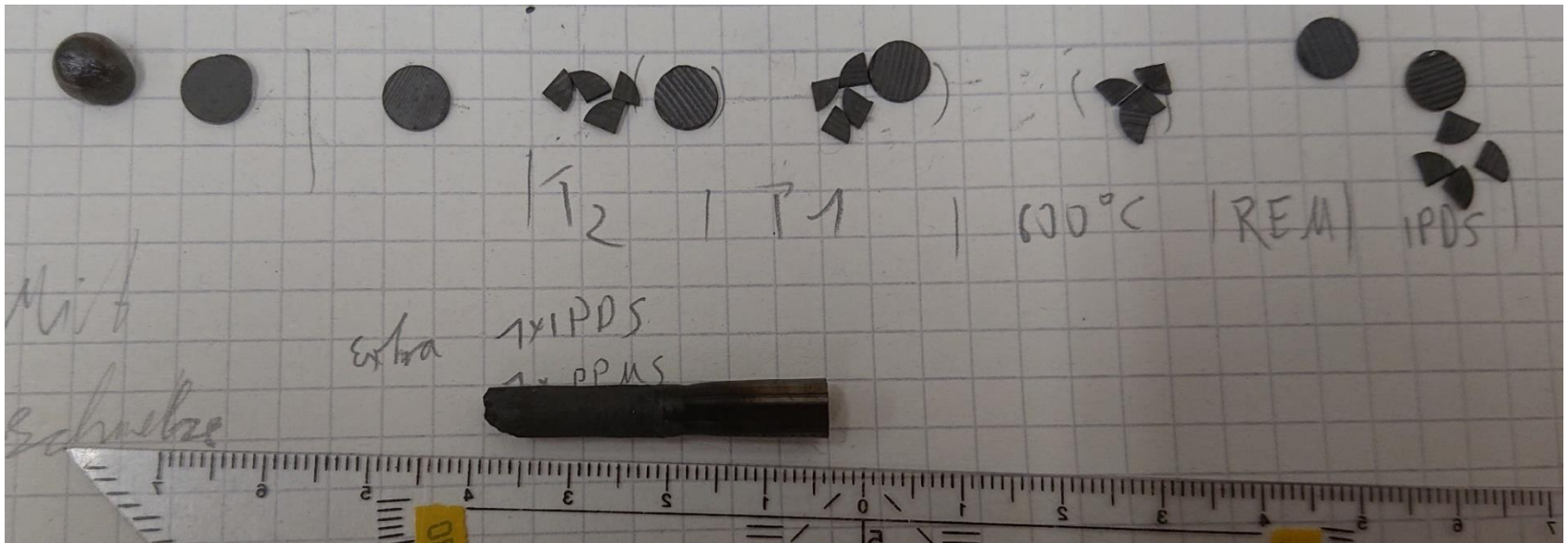
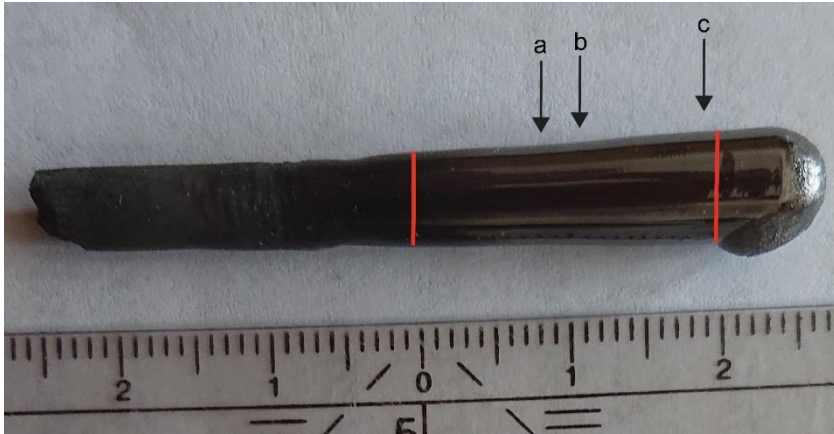
Curie temperature variations in synthetic titanomagnetite single crystals

Sophie-Charlotte Lappe¹ (sophie.lappe@googlemail.com), Georg Winkens¹, Joerg Persson², Shibabrata Nandi², and Oleg Petravic²

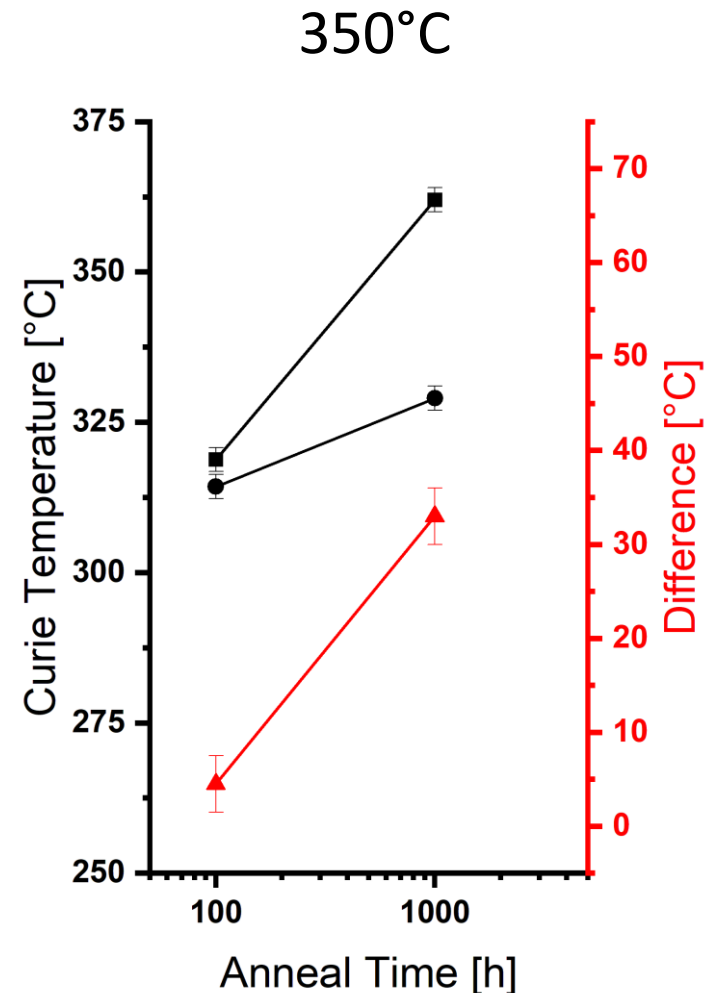
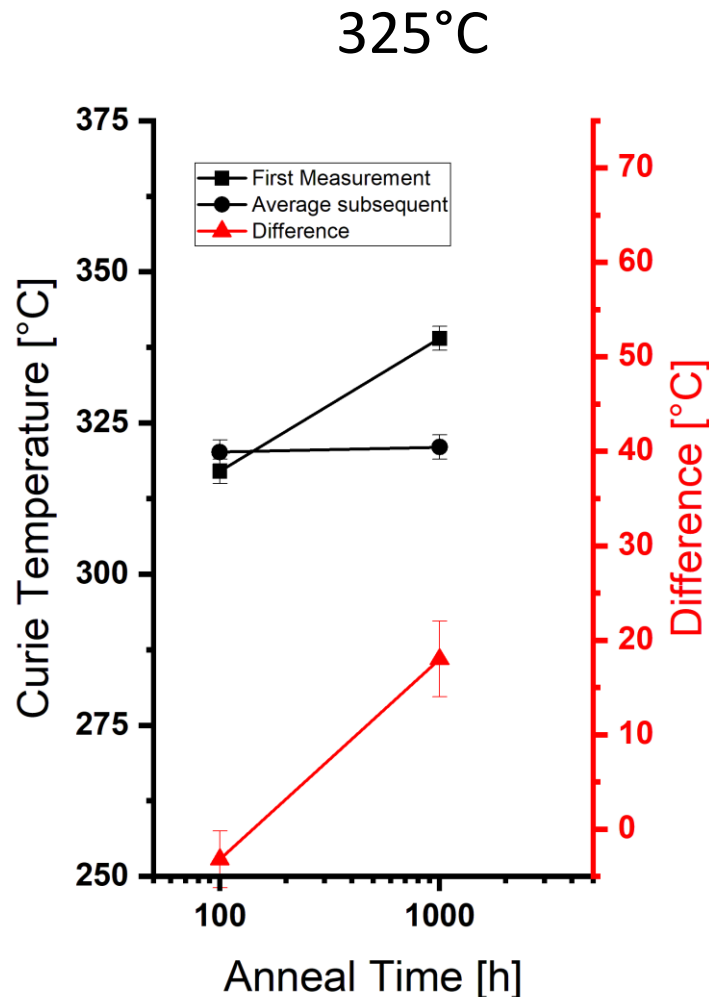
¹RWTH Aachen University, Institute of Crystallography, Germany

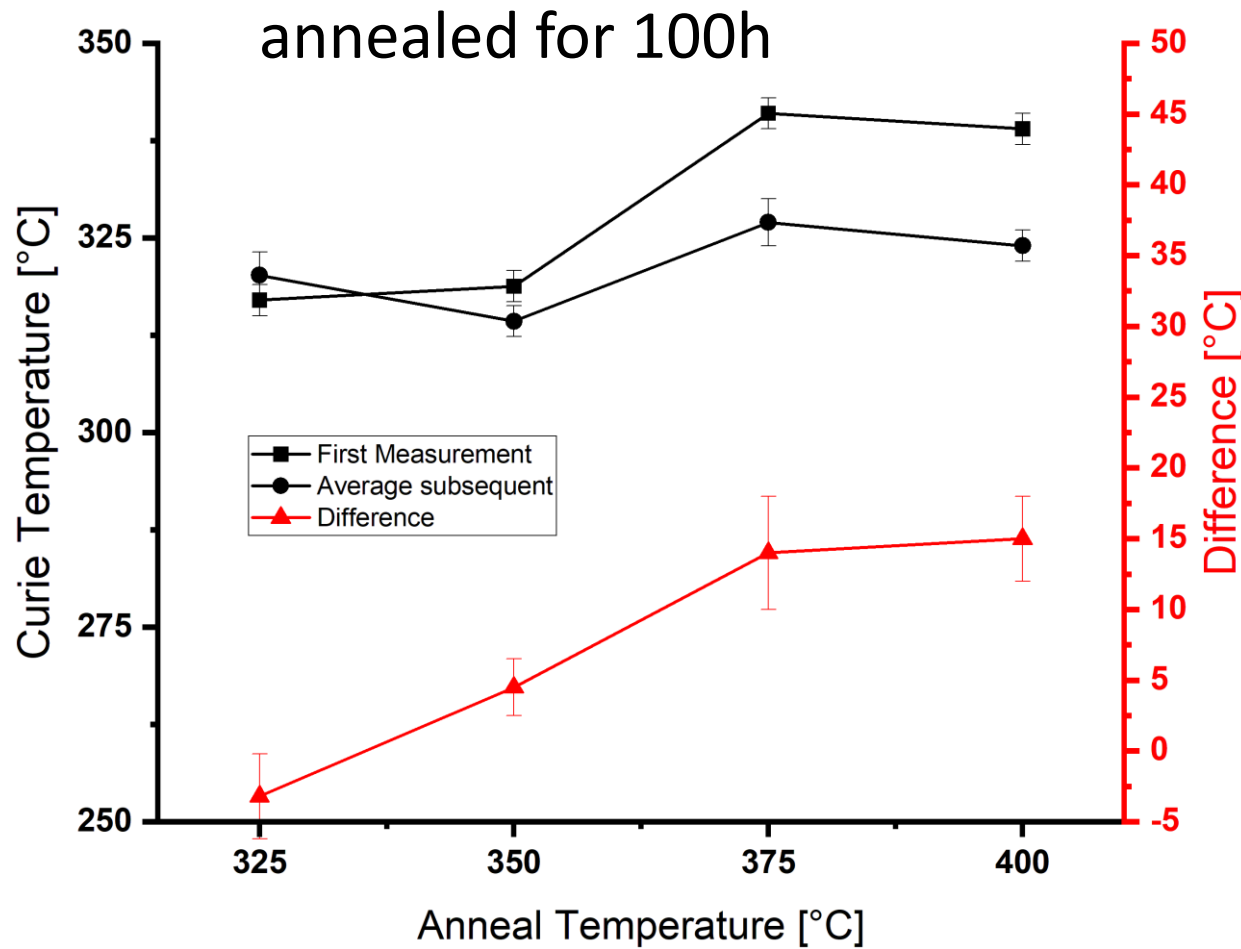
²Jülich Centre for Neutron Science, Forschungszentrum Jülich, Germany

Synthetic $\text{Fe}_{2.63}\text{Ti}_{0.37}\text{O}_4$ single crystal grown via OFZM technique



Pieces of the crystal were annealed in evacuated glass tubes. Measurements of the Curie temperature show systematic changes with annealing time and temperature.





Possible saturation around 375°C – 400°C anneal temperature.

The Curie temperature increases with longer annealing times and higher annealing temperatures. The saturation magnetization does not change. This is consistent with the theory of nanoscale Ti clustering.