University of Zurich ${ }^{\text {UZH }}$

Helmholtz Zentrum Berlin

(I)University of Stavanger

# Single crystal growth and study of the magnetic properties of the mixed system $\mathrm{Ba}_{(3-\mathrm{x})} \mathrm{Sr}_{\mathrm{x}} \mathrm{Cr}_{2} \mathrm{O}_{8}$ 

Alsu GAZIZULINA ${ }^{1}$, Diana Lucía QUINTERO CASTRO ${ }^{2,3}$, Andreas SCHILLING ${ }^{1}$<br>alsu@physik.uzh.ch<br>${ }^{1}$ University of Zurich, Physik-Institut, Zurich, Switzerland<br>${ }^{2}$ Helmholtz Zentrum Berlin für Materialien und Energie, Berlin, Germany<br>${ }^{3}$ University of Stavanger, Department of Mathematics and Natural Sciences, Stavanger, Norway

$\frac{\text { Powder preparation }}{\text { (Published in our Ref. [5]) }} \quad(3-x) \mathrm{Ba}\left(\mathrm{NO}_{3}\right)_{2}+x \mathrm{Sr}\left(\mathrm{NO}_{3}\right)_{2}+\mathrm{Cr}\left(\mathrm{NO}_{3}\right)_{2} 9 \mathrm{H}_{2} \mathrm{O} \longrightarrow \mathrm{Ba}_{3-\mathrm{x}} \mathrm{Sr}_{\mathrm{x}} \mathbf{C r}_{2} \mathrm{O}_{8}+6 \mathrm{NO}_{2}+17 \mathrm{O}_{2}+9 \mathrm{H}_{2} \mathrm{O}$


Inelastic neutron scattering (Published in our Ref. [7])

Magnetization measurements (Published in our Ref. [7])

[1] V. Zapf et al., Reviews of modern physics, 86, 563 (2014)
[3] M. Kofu et al., PRL, 102, 177204 (2009)
[5] H. Grundmann et al., Mat. Res. Bull., 48, 3108 (2013)
[7] A. Gazizulina et al., Phys. Rev. B 96, 184201 (2017)
[7] A. Gazizulina et al., Phys. Rev. B 96, 184201 (2017)
This work was supported by the

[2] D.L. Quintero-Castro et al., PRB, 81, 014415 (2010) [4] H. Grundmann et al., PRB, 90, 075101 (2014) [6] H. Grundmann et al., New J. Phys., 18, 033001 (2016)

Jahn-Teller transition temperature
(To be published)



Ultrasound velocity in pulsed magnetic field (61T)
(To be published)


Experiments were done at: Physik-Institut, UZH Zurich

