Curriculum Vitae

PERSONAL INFORMATION

Name:	Michał Stękiel
Birth:	19.01.1991 Warsaw, Poland
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CURRENT POSITION

Jan. 2020 - Jan. 2022 *Postdoctoral researcher*
[a]Technische Universität Muenchen, Munich, Germany
[b]Meier-Leibnitz Institüt, Garching, Germany
investigators: prof. C. Pfleiderer[a], dr A. Schneidewind[b]
Magneto-elastic coupling in the Ce-113 compounds

EDUCATION

Aug. 2015 - May 2019 *Doctor of Natural Sciences, Dr. rer. nat.*
[a]Goethe University, Frankfurt, Germany
[b]European Synchrotron Research Facility, Grenoble, France
supervisor: prof. B. Winkler[a], dr A. Bosak[b]
Understanding phase transitions in carbonates by investigation of their lattice dynamics

Aug. 2013 - July 2015 *Master of Science*
Faculty of Physics, University of Warsaw
supervisor: prof. R. Przeniosło
Analysis of crystal and magnetic structure of α-Fe_2O_3 and α-Cr_2O_3

Oct. 2010 - July 2013	*Bachelor of Science* Faculty of Physics, University of Warsaw supervisor: prof. R. Przeniosło *Neutron diffraction of crystals with trigonal symmetry in external magnetic field*
Sep. 2007 - June 2010	*High school* XIV Liceum Ogólnokształcące, Warsaw, Poland Mathematics-physics specialization

PUBLICATIONS

[1] A. Girard, M. Stekiel, W. Morgenroth, B. Winkler, V. Ilakovac, A. Bosak, H. Berger, T. Yoshikazu, and T. Hasegawa. "Soft-phonon driven hexagonal-orthorhombic phase transition in $BaVS_3$". Phys. Rev. B **99**, 144104.
doi: 10.1103/PhysRevB.99.144104

[2] A. Girard, M. Stekiel, W. Morgenroth, H. Taniguchi, V. Milman, A. Bosak, and B. Winkler. "High-pressure compressibility and electronic properties of bismuth silicate Bi_2SiO_5 from synchrotron experiments and first-principles calculations", Phys. Rev. B **99**, 064116, 2019.
doi: 10.1103/PhysRevB.99.064116

[3] M. Stekiel, A. Girard, T. Nguyen-Thanh, A. Bosak, V. Milman, and B. Winkler. "Phonon-driven phase transitions in calcite, dolomite, and magnesite". *Physical Review B*, **99**, 054101, 2019.
doi: 10.1103/PhysRevB.99.054101

[4] A. Girard, T. Nguyen-Thanh, S.M. Souliou, M. Stekiel, W. Morgenroth, L. Paolasini, A.Minelli, D. Gambetti, B. Winkler, A. Bosak. "A new diffractometer for diffuse scattering studies on the ID28 beamline at the ESRF", J. Synchrotron Rad. **26**, 272-279, 2019.
doi: 10.1107/S1600577518016132

[5] A. Girard, M. Stekiel, D. Spahr, W. Morgenroth, B. Wehinger, V. Milman, A. Mirone, A. Minelli, L. Paolasini, A. Bosak, and B. Winkler. "Structural, elastic and vibrational properties of celestite, $SrSO_4$, from synchrotron x-ray diffraction, thermal diffuse scattering and Raman scattering", J. Phys.: Condens. Matter **31**, 055703, 2018.
doi: 10.1088/1361-648X/aaf0ef

[6] A. Girard, H. Taniguchi, S.M. Souliou, M. Stekiel, W. Morgenroth, A. Minelli, A. Kuwabara, A. Bosak, and B. Winkler. "Competing structural instabilities in Bi_2SiO_5", Phys. Rev. B **98**, 134102, 2018.
doi: 10.1103/PhysRevB.98.134102

[7] B. Petermüller, C. Neun, M. Stekiel, D. Zimmer, M. Tribus, K. Wurst, B. Winkler, and H. Huppertz. "Synthesis, Crystal Structure, and Compressibilities of $Mn_{3-x}Ir_5B_{2+x}$ ($0 \leq x \leq 0.5$) and Mn_2IrB_2", Chem. Eur. J. **24**, 14679–14685, 2018.
doi: 10.1002/chem.201803235

[8] J. Poonoosamy, F. Brandt, M. Stekiel, P. Kegler, M. Klinkenberg, B. Winkler, V. Vinograd, D. Bosbach, and G. Deissmann. "Zr-containing layered double hydroxides: Synthesis, characterization, and evaluation of thermodynamic properties", Appl. Clay Sci. **151**, 54–65, 2018.
doi: 10.1016/j.clay.2017.10.013

[9] M. Stekiel, T. Nguyen-Thanh, S. Chariton, C. McCammon, A. Bosak, W. Morgenroth, V. Milman, K. Refson and B. Winkler. "High pressure elasticity of $FeCO_3$–$MgCO_3$ carbonates". *Phys. Earth Planet. In.*, **271 (C)**, 57–63, 2017.
doi: 10.1016/j.pepi.2017.08.004

[10] P. Fabrykiewicz, M. Stekiel, I. Sosnowska, and R. Przeniosło. "Deformations of the α-Fe_2O_3 rhombohedral lattice across the Néel temperature". Acta Cryst. B **73**, pp.27-32, 2017.
doi: 10.1107/S2052520616017935

[11] M. Stekiel, R. Przeniosło, I. Sosnowska, A. Fitch, J.B. Jasiński, J.A. Lussier, and M. Bieringer. "Lack of a threefold rotation axis in α-Fe_2O_3 and α-Cr_2O_3 crystals". Acta Cryst. B **71** pp. 203-208, 2015.
doi: 10.1107/S205252061500342X

[12] M. Stekiel, R. Przenioslo, M. Duczmal, D. Wardecki, and T. Buslaps. "Synchrotron radiation diffraction study of texture in α-Fe_2O_3 powder induced by the magnetic field". Crystal Res. and Tech. **50**, pp. 773-780, 2015.
doi: 10.1002/crat.201500065

[13] R. Przenioslo, I. Sosnowska, M. Stekiel, D. Wardecki, A. Fitch, and J.B. Jasinski. "Monoclinic deformation of the crystal lattice of hematite α-Fe_2O_3". Physica B: Condensed Matter **449**, pp. 72-76, 2014.
doi: 10.1016/j.physb.2014.04.074

PUBLICATIONS IN PROCESSING

[14] M. Stekiel, A. Girard, T. Nguyen-Thanh, M. Butiuto, A. Useinov, A. Bosak, and B. Winkler. "Phonon coupling to the rotational disorder in calcite at high temperatures". *In preparation*

[15] M. Stekiel, A. Girard, D. Zimmer, K. Glazyrin, J. Ruiz-Fuertes, Y. Li, X. Du, and B. Winkler "High-pressure suppression of correlated effects $CaMn_7O_{12}$". *In preparation*

[16] J. Binck, S. Chariton, M. Stekiel, L. Bayarjargal, W. Morgenroth, V. Milman,

L. Dubrovinsky, and B. Winkler. "High-pressure, high-temperature phase stability of iron-poor dolomite and the structures of dolomite-IIIc and dolomite-V". Submitted to *Phys. Earth Planet. In.*, 2019.

[17] S. Chariton, C. McCammon, D.M. Vasiukov, M. Stekiel, A. Kantor, V. Cerantola, I. Kupenko, T. Fedotenko, E. Koemets, M. Hanfland, A.I. Chumakov and L. Dubrovinsky. "Seismic detectability of carbonates in the deep Earth: a Nuclear Inelastic Scattering study". Accepted in *American Mineralogist*, 2019.

CONFERENCES

- 26^{th} Deutsche Gesellschaft für Kristallographie Congress (DGK), Lepizig, Germany, 2019.
  "High-pressure suppression of correlated effects $CaMn_7O_{12}$". Oral presentation.
- Deep Carbon, Gordon Research Conference, Smithfield R.I., USA, 2019.
  "Elasticity and seismic signature of $FeCO_3$–$MgCO_3$ carbonates in the lower mantle". Poster.
- 25^{th} DGK, Essen, Germany, 2018.
  "Lattice dynamics of $CaCO_3$ and $MgCO_3$". Oral presentation.
- 55^{th} EHPRG, Poznan, Poland, 2017.
  "High pressure elasticity of $FeCO_3$–$MgCO_3$ carbonates". Oral presentation.
- 10^{th} International conference on IXS, Hamburg, Germany, 2017.
  "Lattice dynamics of WO_3 as a function of temperature". Poster.
- 24^{th} DGK, Stuttgart, Germany, 2016.
  "Millisecond time resolved diffraction study of $SrCO_3$ at high pressures and temperatures". Talk during Lightening Talks by young crystallographers session, poster.
- 23rd Congress and General Assembly of the IUCr, Montreal, Canada, 2014.
  "Reorientation of α-Fe_2O_3 crystallites in an external magnetic field". Poster.
- International Conference of Neutron Scattering, Edinburgh, Scotland, 2013.
  "Magnetically induced texture in $CaMn_7O_{12}$ studied with neutron powder diffraction". Poster.

EXPERIMENTS AT LARGE SCALE FACILITIES

- ESRF: ID28, ID27, ID22, old ID15B
- PETRA-III: P02.2, P08, P64.
- SINQ: DMC.

LANGUAGES

- Polish: mother-tongue.
- English: fluent.
- Spanish: conversational.
- German: basic.
- python, C++: advanced.