

CURRICULUM VITAE

DR. THOMAS PROFFEN

Science Initiative Lead High Performance Computing and Data Analytics
Team Leader Powder Diffraction
Neutron Sciences Directorate
Oak Ridge National Laboratory
Oak Ridge, TN 37831-6475, USA

Phone: +1 865 576 8633

Email: tproffen@ornl.gov

Publons: publons.com/researcher/1382580

ORCID: orcid.org/0000-0002-1408-6031



Employment

- since 2019 **Distinguished R&D Staff** at Oak Ridge National Laboratory, USA.
- since 2017 **Science Initiative Lead High Performance Computing and Data Analytics** at Oak Ridge National Laboratory, USA.
- 2012 - 2017 **Director Neutron Data Analysis and Visualization Division** at Oak Ridge National Laboratory, USA.
- 2011 - 2012 **Distinguished R&D Staff and Diffraction Group Leader** at Oak Ridge National Laboratory, USA.
- 2001 - 2011 **Technical Staff Member** at Lujan Neutron Scattering Center, Los Alamos National Laboratory, USA.
- 1998 - 2001 **Research Associate** with Prof. S.J.L Billinge at the Department of Physics and Astronomy, Michigan State University, USA.
- 1995 - 1998 **Postdoctoral Fellow** with Dr. T.R. Welberry at the Research School of Chemistry, The Australian National University, Australia.
- 1992 - 1995 **Doctoral Fellow** with Prof. F. Frey at the Neutron Scattering Group, Department of Mineralogy and Crystallography, Ludwig Maximilians Universität (LMU), Munich, Germany.

Education

- 28 Jun 1995 **PhD (Dr. rer. nat.)** "Disorder and diffuse neutron and X-ray scattering from zirconia at temperatures up to 1500 K using newly designed experimental X-ray techniques" at Ludwig Maximilians Universität, Munich, Germany
- 04 Feb 1992 **Diploma (Physics)** "Disorder in CaO stabilized zirconia studied using diffuse neutron scattering from RT to 1750 K", at Ludwig Maximilians Universität, Munich, Germany
- 25 May 1983 **Abitur (High School Graduation)** at Helene-Lange Gymnasium, Rendsburg, Germany

Awards

2018	Tennessee Governor's Volunteer Star Award for work with Oak Ridge Computer Science Girls.
2014	UT-Battelle Awards Night - Community Outreach.
2009	Selected for the Leadership Development Initiative program of the Los Alamos National Laboratory's Experimental Science's Directorate.
2006	Los Alamos National Laboratory Women's Career Development Outstanding Mentoring Award.
2006	Los Alamos LAAP Award (for achievements as local chair of the American Conference on Neutron Scattering).
2005	Los Alamos LAAP Award (for achievements related to preparation for Lujan Center review by the Department of Energy).
2002	Los Alamos National Laboratory Individual Distinguished Performance Award.

Official functions

since 2021	American Association for the Advancement of Science
since 2020	Fellow of the Neutron Scattering Society of America
since 2020	IUCr Journals Commissioning Editor for Methods, Instrumentation and Materials
2019-2020	Member of the International Program Committee for the 25th Congress and General Assembly of the International Union of Crystallography
since 2018	Member of the ORNL Artificial Intelligence Steering Committee
since 2018	Fellow of the American Crystallographic Association
2018	Member of the TMS Data Infrastructure Task Force
since 2017	Member of the IUCr Commission on Crystallographic Computing
2016	Member of the ORNL-UT Task Force to establish a joined Data Science and Engineering PhD Program
since 2016	Co-Chair of the Research Data Alliance Interest Group on Research data needs of the Photon and Neutron Science community
since 2015	Member of the IUCr Commission on Neutron Scattering
since 2016	Chair of the Experimental Facilities Computing Group
2014-2020	Co-Editor of <i>Journal of Applied Crystallography</i>
since 2004	Editor Board member of <i>Zeitschrift für Kristallographie</i> .
2012-2018	Member of the <i>Mantid</i> project management board.
2011-2017	Member of executive cabinet of the Neutron Sciences Directorate at Oak Ridge National Laboratory.
2012-2015	Co-chair of the scientific and technical advisory panel for powder diffraction at the European Spallation Source.

2009-2012	Communications Officer on the Executive Committee of the Neutron Scattering Society of America.
2009-2010	Member of the Communications Standing Committee of the American Crystallographic Association.
2008-2010	Member of the Los Alamos National Laboratory's Experimental Science's Directorate Promotion Committee.
2009	Organizer of the symposium "Quantitative Characterization of Nanostructured Materials" at the MRS spring meeting.
2007	Organizer of the transaction symposium at the Annual Meeting of the American Crystallographic Association.
2007	Local chair and member of the Program Committee of the American Conference on Neutron Scattering in Santa Fe.
2006-2010	Member of the Los Alamos National Laboratory Postdoc Committee (Chair of committee in 2009).
2005	Member of the Program Committee for the European Powder Diffraction Conference.
2004	Guest Editor of Zeitschrift für Kristallographie Special Issue: <i>Structure of Complex Materials</i> .
2003-2008	Member of the Instrument Advisory Team (IAT) for the disordered materials diffractometer (NOMAD) for the Spallation Neutron Source (SNS) at Oak Ridge National Laboratory.
2003-2010	Member of the NeXus International Advisory Committee.
2002-2003	President of the Neutron Scattering Special Interest Group of the American Crystallographic Association.
2002-2006	Member of the executive committee for the single crystal diffractometer (SCD) for the Spallation Neutron Source (SNS) at Oak Ridge National Laboratory.
2001-2006	Member of the Instrument Advisory Team (IAT) for the high-resolution powder diffractometer (POWGEN) for the Spallation Neutron Source (SNS) at Oak Ridge National Laboratory.
2001-2003	Member of the LANSCE Materials Program Advisory Committee (PAC).
1998-2005	Responsible for development of difCIF, an extension of the Crystallographic Information File format to include diffuse scattering.

Other Activities

- Frequent reviewer of papers for major scientific journals including Science, Physical Review Letters and Journal of the American Chemical Society.
- Reviewer of funding proposals of major funding agencies including the Office of Science of the Department of Energy and the European Commission's CORDIS program.
- Member of experimental proposal review committees of national user facilities including ISIS, NIST, LANSCE and SNS.
- Organizer of ~ 30 workshops on total scattering analysis.
- Participant in the 2012 Anderson County Leadership Program and 2015 Oak Ridge Leadership Program.

Outreach

- Founder and Director of non-profit Oak Ridge Computer Science Girls - www.orcsgirls.org.
- Frequent judge at local science fair and First Lego League robotics competition.
- Collaboration with Katharine Page and Daniel Olds on development of outreach materials funded by ACA grant.
- Lead for the the Neutron Science trailer as part of the ORNL Traveling Science Fair.

Mentorship

- Mentor in the Oak Ridge National Laboratory mentoring program.
- Member of the thesis committee of Katharine Page (University of California Santa Barbara).
- Mentor of four postdocs and 20 graduate and undergraduate students.
- Supervision of ~ 80 students and postdocs visiting as users of the NPDF instrument.
- Served on the Rosen Thesis Award Committee.

Memberships

American Association for the Advancement of Science

American Crystallographic Association

Neutron Scattering Society of America

Association for Computing Machinery

Minerals, Metals & Materials Society

Publications (H index: 48)

Books and book chapters

- [1] **TH. PROFFEN** AND G. GRANROTH. Cross-Cutting Software Solutions in Support of Experimental Analysis Challenges at National Scattering Facilities. In KERSTIN KLEESE, STUART CAMPBELL, KEVIN YAGER, RICHARD FARNSWORTH, AND MAARTJE VAN DAM, editors, *Handbook on Big Data and Machine Learning in the Physical Sciences, Vol 2: Advanced Analysis Solutions for Leading Experimental Techniques*. World Scientific, 2020.
- [2] K. PAGE, **TH. PROFFEN**, AND R.B. NEDER. Structure of Nanoparticles from Total Scattering. In E.J. MITTERMEIJER, editor, *Modern Diffraction Methods*. Wiley Verlag GmbH, Weinheim, 2013. doi:[10.1002/9783527649884.ch3](https://doi.org/10.1002/9783527649884.ch3).
- [3] B. PALOSZ, E. GRZANKA, S. GIERLOTKA, M. WOJDYR, W. PALOSZ, **TH. PROFFEN**, R. RICH, AND S. STELMAKH. Looking beyond Limitations of Diffraction Methods of Structural Analysis of Nanocrystalline Materials. In R. PYRZ AND J.C. RAUHE, editors, *IUTAM Symposium on Modelling Nanomaterials and Nanosystems. IUTAM Bookseries, 13*, pages 75–88. Springer, Dordrecht, 2009. doi:[10.1007/978-1-4020-9557-3_9](https://doi.org/10.1007/978-1-4020-9557-3_9).
- [4] R. UBIC, G. SUBODH, M. SEBASTIAN, D. GOUT, AND **TH. PROFFEN**. Effective Size of Vacancies In The $\text{Sr}_{1-3x}/2\text{Ce}_x\text{TiO}_3$ Superstructure. In K.M. NAIR, R.W. SUVOROV, AND R. GUO, editors, *Advances in Electroceramic Materials: Ceramic Transactions, 204*, pages 177–185. The American Ceramic Society, 2009. doi:[10.1002/9780470528990.ch20](https://doi.org/10.1002/9780470528990.ch20).
- [5] R.B. NEDER AND **TH. PROFFEN**. *Diffuse Scattering and Defect Structure Simulations: A cook book using the program DISCUS*. IUCr Texts on Crystallography. Oxford University Press, Oxford, 2008. doi:[10.1093/acprof:oso/9780199233694.001.0001](https://doi.org/10.1093/acprof:oso/9780199233694.001.0001).
- [6] **TH. PROFFEN**. Analysis of Disordered Materials using Total Scattering and the Atomic Pair Distribution Function. In H.-R. WENK, editor, *Reviews in Mineralogy and Geochemistry: Neutron Scattering in Earth Sciences, 63*, pages 255–274. Mineralogical Society of America, 2006. doi:[10.2138/rmg.2006.63.11](https://doi.org/10.2138/rmg.2006.63.11).

Peer reviewed papers

- [1] FREDERICK P. MARLTON, ZHAOMING ZHANG, YUANPENG ZHANG, **TH. PROFFEN**, CHRIS D. LING, AND BRENDAN J. KENNEDY. Lattice disorder and oxygen migration pathways in pyrochlore and defect-fluorite oxides. *Chemistry of Materials*, **33**(4), 1407–1415, 2021. doi:[10.1021/acs.chemmater.0c04515](https://doi.org/10.1021/acs.chemmater.0c04515).
- [2] MATHIEU DOUCET, ANJANA M SAMARAKOON, CHANGWOO DO, WILLIAM T. HELLER, RICHARD ARCHIBALD, D. ALAN TENNANT, THOMAS PROFFEN, AND GARRETT E. GRANROTH. Machine learning for neutron scattering at ORNL. *Mach. Learn.: Sci. Technol.*, **2**(2), 023001, Dec 2020. doi:[10.1088/2632-2153/abcf88](https://doi.org/10.1088/2632-2153/abcf88).
- [3] K. KUPWADE-PATIL, P.J. BOUL, D.K. RASNER, S.M. EVERETT, **TH. PROFFEN**, K.L. PAGE, D. MA, D. OLDS, THAEMLITZ C.J., AND O. BÜYÜKÖZTÜRK. Retarder Effect on Hydrating Oil Well Cements Investigated using in situ Neutron/X-ray Pair Distribution Function Analysis. *Cement and Concrete Research*, **126**, 105920, 2019. doi:[10.1016/j.cemconres.2019.105920](https://doi.org/10.1016/j.cemconres.2019.105920).
- [4] D. OLDS, C.N. SAUNDERS, M. PETERS, **TH. PROFFEN**, J. NEUEFEIND, AND K. PAGE. Precise Implications for Real-Space Pair Distribution Function Modeling of Effects Intrinsic to Modern Time-of-Flight Neutron Diffractometers. *Acta Cryst. A*, **74**, 293–307, 2018. doi:[10.1107/S2053273318003224](https://doi.org/10.1107/S2053273318003224).
- [5] E. DEELMAN, C. CAROTHERS, A. MANDAL, B. TIERNEY, J.S. VETTER, I. BALDIN, C. CASTILLO, G. JUVE, D. KROL, V. LYNCH, B. MAYER, J. MEREDITH, **TH. PROFFEN**, P. RUTH, AND R.F. DA SILVA. PANORAMA: An approach to performance modeling and diagnosis of extreme-scale workflows. *International Journal of High Performance Computing Applications*, **31**(1), 4–18, 2017. doi:[10.1177/1094342015594515](https://doi.org/10.1177/1094342015594515).
- [6] V.E. LYNCH, J.M. BORREGUERO, D. BHOWMIK, P. GANESH, B.G. SUMPTER, **TH. PROFFEN**, AND M. GOSWAMI. An Automated Analysis Workflow for Optimization of Force-Field Parameters using Neutron Scattering Data. *J. Comput. Phys.*, **340**, 128–137, 2017. doi:[10.1016/j.jcp.2017.03.045](https://doi.org/10.1016/j.jcp.2017.03.045).
- [7] P.M.M. THYGESEN, C.A. YOUNG, E.O.R. BEAKE, F.D. ROMERO, L.D. CONNOR, **TH. PROFFEN**, A.E. PHILLIPS, M.G. TUCKER, M.A. HAYWARD, D.A. KEEN, AND A.L. GOODWIN. Local Structure Study of the Orbital Order/Disorder Transition in LaMnO_3 . *Phys. Rev. B*, **95**(17), 2017. doi:[10.1103/PhysRevB.95.174107](https://doi.org/10.1103/PhysRevB.95.174107).
- [8] M.P. ATTFIELD, M. FEYGENSON, J.C. NEUEFEIND, **TH. PROFFEN**, T.C.A. LUCAS, AND J.A. HRILJAC. Reprobing the Mechanism of Negative Thermal Expansion in Siliceous Faujasite. *RSC Advances*, **6**(24), 19903–19909, 2016. doi:[10.1039/c5ra23827g](https://doi.org/10.1039/c5ra23827g).
- [9] D. LEE, D.J. WILLIAMS, S.C. VOGEL, **TH. PROFFEN**, J.D. THOMPSON, L.L. DAEMEN, AND S. PARK. Tailoring Structure and Magnetic Properties of $\text{Ni}_x\text{Co}_{1-x}(\text{N}(\text{CN})_2)_2$ Molecular Magnets. *Current Applied Physics*, **16**(9), 1100–1104, 2016. doi:[10.1016/j.cap.2016.06.015](https://doi.org/10.1016/j.cap.2016.06.015).
- [10] A. BOEHNLEIN, B. MATTHEWS, **TH. PROFFEN**, AND F. SCHLUENZEN. The Research Data Alliance Photon and Neutron Science Interest Group. *Synchrotron Radiation News*, **28**(2), 43–47, 2015. doi:[10.1080/08940886.2015.1013421](https://doi.org/10.1080/08940886.2015.1013421).
- [11] N.W. MCNUTT, O. RIOS, M. FEYGENSON, **TH. PROFFEN**, AND D.J. KEFFER. Structural Analysis of Lignin-Derived Carbon Composite Anodes. *J. Appl. Cryst.*, **47**, 1577–1584, 2014. doi:[10.1107/S1600576714014666](https://doi.org/10.1107/S1600576714014666).

- [12] S.D. CONRADSON, T. DURAKIEWICZ, F.J. ESPINOSA-FALLER, Y.Q. AN, D.A. ANDERSSON, A.R. BISHOP, K.S. BOLAND, J.A. BRADLEY, D.D. BYLER, D.L. CLARK, D.R. CONRADSON, L.L. CONRADSON, A.L. COSTELLO, N.J. HESS, G.H. LANDER, A. LLOBET, M.B. MARTUCCI, J. MUSTRE DE LEON, D. NORDLUND, J.S. LEZAMA-PACHECO, **TH. PROFFEN**, G. RODRIGUEZ, D.E. SCHWARZ, G.T. SEIDLER, A.J. TAYLOR, S.A. TRUGMAN, T.A. TYSON, AND J.A. VALDEZ. Possible Bose-Condensate Behavior in a Quantum Phase Originating in a Collective Excitation in the Chemically and Optically Doped Mott-Hubbard System UO_{2+x} . *Phys. Rev. B*, **88**(11), 2013. doi:[10.1103/PhysRevB.88.115135](https://doi.org/10.1103/PhysRevB.88.115135).
- [13] K.M.O. JENSEN, M. CHRISTENSEN, H.P. GUNNLAUGSSON, N. LOCK, E.D. BOJESEN, **TH. PROFFEN**, AND B.B. IVERSEN. Defects in Hydrothermally Synthesized LiFePO_4 and $\text{LiFe}_{1-x}\text{Mn}_x\text{PO}_4$ Cathode Materials. *Chem. Mater.*, **25**(11), 2282–2290, 2013. doi:[10.1021/cm4008393](https://doi.org/10.1021/cm4008393).
- [14] H. KIM, K. SAKAKI, H. OGAWA, Y. NAKAMURA, J. NAKAMURA, E. AKIBA, A. MACHIDA, T. WATANUKI, AND **TH. PROFFEN**. Origin of Degradation in the Reversible Hydrogen Storage Capacity of $\text{V}_{1-x}\text{Ti}_x$ Alloys from the Atomic Pair Distribution Function Analysis. *J. Phys. Chem. C*, **117**(50), 26543–26550, 2013. doi:[10.1021/jp408766r](https://doi.org/10.1021/jp408766r).
- [15] J. PETERSON, J. TENCATE, **TH. PROFFEN**, T. DARLING, H. NAKOTTE, AND K. PAGE. Quantifying Amorphous and Crystalline Phase Content with The Atomic Pair Distribution Function. *J. Appl. Cryst.*, **46**, 332–336, 2013. doi:[10.1107/S0021889812050595](https://doi.org/10.1107/S0021889812050595).
- [16] J.L. PROVIS, A. HAJIMOHAMMADI, C.E. WHITE, S.A. BERNAL, R.J. MYERS, R.P. WINARSKI, V. ROSE, **TH. PROFFEN**, A. LLOBET, AND J.S.J. VAN DEVENTER. Nanostructural Characterization of Geopolymers by Advanced Beamline Techniques. *Cement Concrete Comp.*, **36**, 56–64, 2013. doi:[10.1016/j.cemconcomp.2012.07.003](https://doi.org/10.1016/j.cemconcomp.2012.07.003).
- [17] K. SAKAKI, N. TERASHITA, H. KIM, **TH. PROFFEN**, E.H. MAJZOUB, S. TSUNOKAKE, Y. NAKAMURA, AND E. AKIBA. Crystal Structure and Local Structure of $\text{Mg}_{2-x}\text{Pr}_x\text{Ni}_4$ ($x=0.6$ and 1.0) Deuteride Using in Situ Neutron Total Scattering. *Inorganic Chem.*, **52**(12), 7010–7019, 2013. doi:[10.1021/ic400528u](https://doi.org/10.1021/ic400528u).
- [18] H.-W. WANG, D.J. WESOLOWSKI, **TH. PROFFEN**, L. VLCEK, W. WANG, L.F. ALLARD, A.I. KOLESNIKOV, M. FEYGENSON, L.M. ANOVITZ, AND R.L. PAUL. Structure and Stability of SnO_2 Nanocrystals and Surface-Bound Water Species. *J. Am. Chem. Soc.*, **135**(18), 6885–6895, 2013. doi:[10.1021/ja312030e](https://doi.org/10.1021/ja312030e).
- [19] H. KIM, J. NAKAMURA, H. SHAO, Y. NAKAMURA, E. AKIBA, K.W. CHAPMAN, P.J. CHUPAS, AND **TH. PROFFEN**. Variation in the Ratio of Mg_2Co and MgCo_2 in Amorphous-Like Mechanically Alloyed $\text{Mg}_x\text{Co}_{100-x}$ using Atomic Pair Distribution Function Analysis. *Z. Krist.*, **227**(5), 299–303, 2012. doi:[10.1524/zkri.2012.1496](https://doi.org/10.1524/zkri.2012.1496).
- [20] **TH. PROFFEN**. Neutron Total Scattering Analysis of Nanoparticles. *Jom*, **64**(1), 112–116, 2012. doi:[10.1007/s11837-011-0216-x](https://doi.org/10.1007/s11837-011-0216-x).
- [21] N. RADEMACHER, L.L. DAEMEN, E.L. CHRONISTER, AND **TH. PROFFEN**. Pair Distribution Function Analysis of Molecular Compounds: Significance and Modeling Approach Discussed Using the Example of p-Terphenyl. *J. Appl. Cryst.*, **45**, 482–488, 2012. doi:[10.1107/S0021889812016159](https://doi.org/10.1107/S0021889812016159).
- [22] K.A. ROSS, **TH. PROFFEN**, H.A. DABKOWSKA, J.A. QUILLIAM, L.R. YARASKAVITCH, J.B. KYCIA, AND B.D. GAULIN. Lightly Stuffed Pyrochlore Structure of Single-Crystalline $\text{Yb}_2\text{Ti}_2\text{O}_7$ Grown by the Optical Floating Zone Technique. *Phys. Rev. B*, **86**(17), 2012. doi:[10.1103/PhysRevB.86.174424](https://doi.org/10.1103/PhysRevB.86.174424).
- [23] C.E. WHITE, J.L. PROVIS, **TH. PROFFEN**, AND J.S.J. VAN DEVENTER. Molecular Mechanisms Responsible for the Structural Changes Occurring During Geopolymerization: Multiscale Simulation. *Aiche Journal*, **58**(7), 2241–2253, 2012. doi:[10.1002/aic.12743](https://doi.org/10.1002/aic.12743).
- [24] J. GREEDAN, S. DERAKHSHAN, F. RAMEZANIPOUR, J. SIEWENIE, AND **TH. PROFFEN**. A Search for Disorder in the Spin Glass Double Perovskites $\text{Sr}_2\text{CaReO}_6$ and $\text{Sr}_2\text{MgReO}_6$ Using Neutron Diffraction and Neutron Pair Distribution Function Analysis. *J. Condens. Matter Phys.*, **23**(16), 2011. doi:[10.1088/0953-8984/23/16/164213](https://doi.org/10.1088/0953-8984/23/16/164213).
- [25] H. KIM, J. NAKAMURA, H. SHAO, Y. NAKAMURA, E. AKIBA, K. CHAPMAN, P. CHUPAS, AND **TH. PROFFEN**. Local Structural Evolution of Mechanically Alloyed $\text{Mg}_{50}\text{Co}_{50}$ Using Atomic Pair Distribution Function Analysis. *J. Phys. Chem. C*, **115**(15), 7723–7728, 2011. doi:[10.1021/jp111711c](https://doi.org/10.1021/jp111711c).
- [26] H. KIM, J. NAKAMURA, H. SHAO, Y. NAKAMURA, E. AKIBA, K.W. CHAPMAN, P.J. CHUPAS, AND **TH. PROFFEN**. Insight into the Hydrogenation Properties of Mechanically Alloyed $\text{Mg}(50)\text{Co}(50)$ from the Local Structure. *J. Phys. Chem. C*, **115**(41), 20335–20341, 2011. doi:[10.1021/jp207197k](https://doi.org/10.1021/jp207197k).
- [27] L. MALAVASI, G. ARTIOLI, H. KIM, B. MARONI, B. JOSEPH, Y. REN, **TH. PROFFEN**, AND S. BILLINGE. Local structural investigation of $\text{SmFeAsO}_{1-x}\text{F}_x$ High Temperature Superconductors. *J. Condens. Matter Phys.*, **23**(27), 2011. doi:[10.1088/0953-8984/23/27/272201](https://doi.org/10.1088/0953-8984/23/27/272201).
- [28] K. PAGE, T. HOOD, **TH. PROFFEN**, AND R. NEDER. Building and Refining Complete Nanoparticle Structures with Total Scattering Data. *J. Appl. Cryst.*, **44**, 327–336, 2011. doi:[10.1107/S0021889811001968](https://doi.org/10.1107/S0021889811001968).
- [29] K. PAGE, C. WHITE, E. ESTELL, R. NEDER, A. LLOBET, AND **TH. PROFFEN**. Treatment of Hydrogen Background in Bulk and Nanocrystalline Neutron Total Scattering Experiments. *J. Appl. Cryst.*, **44**, 532–539, 2011. doi:[10.1107/S0021889811001609](https://doi.org/10.1107/S0021889811001609).
- [30] N. RADEMACHER, L. BAYARJARGAL, A. FRIEDRICH, W. MORGENROTH, M. AVALOS-BORJA, S.C. VOGEL, **TH. PROFFEN**, AND B. WINKLER. Decomposition of $\text{W}(\text{CO})_6$ at High Pressures and Temperatures. *J. Appl. Cryst.*, **44**, 820–830, 2011. doi:[10.1107/S0021889811021285](https://doi.org/10.1107/S0021889811021285).
- [31] F. RAMEZANIPOUR, J.E. GREEDAN, J. SIEWENIE, **TH. PROFFEN**, D.H. RYAN, A.P. GROSVENOR, AND R.L. DONABERGER. Local and Average Structures and Magnetic Properties of $\text{Sr}_2\text{FeMnO}_{5+y}$, $y=0.0, 0.5$. Comparisons With $\text{Ca}_2\text{FeMnO}_5$ And The Effect of the A-Site Cation. *Inorganic Chem.*, **50**(16), 7779–7791, 2011. doi:[10.1021/ic200919m](https://doi.org/10.1021/ic200919m).
- [32] Y. REN, J.-Q. YAN, J.-S. ZHOU, J.B. GOODENOUGH, J.D. JORGENSEN, S. SHORT, H. KIM, **TH. PROFFEN**, S. CHANG, AND R.J. MCQUEENEY. Spin-state Transitions in PrCoO_3 Studied with Neutron Powder Diffraction. *Phys. Rev. B*, **84**(21), 2011. doi:[10.1103/PhysRevB.84.214409](https://doi.org/10.1103/PhysRevB.84.214409).

- [33] K.A. ROSS, L.R. YARASKAVITCH, M. LAVER, J.S. GARDNER, J.A. QUILLIAM, S. MENG, J.B. KYCIA, D.K. SINGH, **TH. PROFFEN**, H.A. DABKOWSKA, AND B.D. GAULIN. Dimensional Evolution of Spin Correlations in the Magnetic Pyrochlore $\text{Yb}_2\text{Ti}_2\text{O}_7$. *Phys. Rev. B*, **84**(17), 2011. doi:[10.1103/PhysRevB.84.174442](https://doi.org/10.1103/PhysRevB.84.174442).
- [34] P. TONG, D. LOUCA, X. GU, S. POON, G. SHIFLET, AND **TH. PROFFEN**. Fluctuations of the Local Atomic Environment with Chemical Alloying in Fe Bulk Metallic Glasses. *Metall. Mater. Trans. A*, **42A**(6), 1481–1485, 2011. doi:[10.1007/s11661-011-0695-y](https://doi.org/10.1007/s11661-011-0695-y).
- [35] C. WHITE, J. PROVIS, L. GORDON, D. RILEY, **TH. PROFFEN**, AND J. VAN DEVENTER. Effect of Temperature on the Local Structure of Kaolinite Intercalated with Potassium Acetate. *Chem. Mater.*, **23**(2), 188–199, 2011. doi:[10.1021/cm102648n](https://doi.org/10.1021/cm102648n).
- [36] C. WHITE, J. PROVIS, **TH. PROFFEN**, AND J. VAN DEVENTER. Quantitative Mechanistic Modeling of Silica Solubility and Precipitation during the Initial Period of Zeolite Synthesis. *J. Phys. Chem. C*, **115**(20), 9879–9888, 2011. doi:[10.1021/jp2006217](https://doi.org/10.1021/jp2006217).
- [37] C.E. WHITE, J.L. PROVIS, A. LLOBET, **TH. PROFFEN**, AND J.S.J. VAN DEVENTER. Evolution of Local Structure in Geopolymer Gels: An In Situ Neutron Pair Distribution Function Analysis. *J. Am. Ceram. Soc.*, **94**(10), 3532–3539, 2011. doi:[10.1111/j.1551-2916.2011.04515.x](https://doi.org/10.1111/j.1551-2916.2011.04515.x).
- [38] M. BOWDEN, D. HELDEBRANT, A. KARKAMKAR, **TH. PROFFEN**, G. SCHENTER, AND T. AUTREY. The Diammoniate of Diborane: Crystal Structure and Hydrogen Release. *Chem. Comm.*, **46**(45), 8564–8566, 2010. doi:[10.1039/c0cc03249b](https://doi.org/10.1039/c0cc03249b).
- [39] E. BOZIN, C. MALLIAKAS, P. SOUVATZIS, **TH. PROFFEN**, N. SPALDIN, M. KANATZIDIS, AND S. BILLINGE. Entropically Stabilized Local Dipole Formation in Lead Chalcogenides. *Science*, **330**(6011), 1660–1663, 2010. doi:[10.1126/science.1192759](https://doi.org/10.1126/science.1192759).
- [40] M. BRAGA, J. FERREIRA, J. SIEWENIE, **TH. PROFFEN**, S. VOGEL, AND L. DAEMEN. Neutron Powder Diffraction and First-Principles Computational Studies of $\text{CuLi}_x\text{Mg}_{2-x}$ (x congruent to 0.08), CuMg_2 , and Cu_2Mg . *J. Solid State Chem.*, **183**(1), 10–19, 2010. doi:[10.1016/j.jssc.2009.09.010](https://doi.org/10.1016/j.jssc.2009.09.010).
- [41] M. FABIAN, **TH. PROFFEN**, U. RUETT, E. VERESS, AND E. SVAB. Uranium Surroundings in Borosilicate Glass from Neutron and X-Ray Diffraction and RMC modelling. *J. Condens. Matter Phys.*, **22**(40), 2010. doi:[10.1088/0953-8984/22/40/404206](https://doi.org/10.1088/0953-8984/22/40/404206).
- [42] M. FABIAN, E. SVAB, **TH. PROFFEN**, AND E. VERESS. Neutron Diffraction and Reverse Monte Carlo Modelling of $\text{nu-B}_2\text{O}_3$ and $75\text{B}_2\text{O}_3\text{-}25\text{Na}_2\text{O}$ Glasses. *J. Non-Cryst. Solids*, **356**(9-10), 441–446, 2010. doi:[10.1016/j.jnoncrysol.2009.12.013](https://doi.org/10.1016/j.jnoncrysol.2009.12.013).
- [43] T. HE, J. WANG, G. WU, H. KIM, **TH. PROFFEN**, A. WU, W. LI, T. LIU, Z. XIONG, C. WU, H. CHU, J. GUO, T. AUTREY, T. ZHANG, AND P. CHEN. Growth of Crystalline Polyaminoborane through Catalytic Dehydrogenation of Ammonia Borane on FeB Nanoalloy. *Chem.: Eur. J.*, **16**(43), 12814–12817, 2010. doi:[10.1002/chem.201001844](https://doi.org/10.1002/chem.201001844).
- [44] D. MA, A. STOICA, X. WANG, Z. LU, AND **TH. PROFFEN**. In-situ Neutron Scattering Study of Crystallization in a Zr-based Bulk Metallic Glass. *Appl. Phys. A*, **99**(3), 537–542, 2010. doi:[10.1007/s00339-010-5608-1](https://doi.org/10.1007/s00339-010-5608-1).
- [45] K. MORI, K. IWASE, M. YONEMURA, J. SIEWENIE, **TH. PROFFEN**, Y. ONODERA, K. ITOH, M. SUGIYAMA, T. KAMIYAMA, AND T. FUKUNAGA. Ionic Conductivity and Structural Properties of Lithium Lanthanum Titanate Quenched into Liquid Nitrogen Studied by Neutron Powder Diffraction. *J. Phys. Soc. Jpn.*, **79**, 3, 2010. doi:[10.1143/jpsjs.79sa.84](https://doi.org/10.1143/jpsjs.79sa.84).
- [46] K. PAGE, **TH. PROFFEN**, M. NIEDERBERGER, AND R. SESHADRI. Probing Local Dipoles and Ligand Structure in BaTiO_3 Nanoparticles. *Chem. Mater.*, **22**(15), 4386–4391, 2010. doi:[10.1021/cm100440p](https://doi.org/10.1021/cm100440p).
- [47] D. SHOEMAKER, R. SESHADRI, A. HECTOR, A. LLOBET, **TH. PROFFEN**, AND C. FENNIE. Atomic Displacements in the Charge Ice Pyrochlore $\text{Bi}_2\text{Ti}_2\text{O}_6\text{O}'$ Studied By Neutron Total Scattering. *Phys. Rev. B*, **81**(14), 2010. doi:[10.1103/PhysRevB.81.144113](https://doi.org/10.1103/PhysRevB.81.144113).
- [48] C. WHITE, J. PROVIS, **TH. PROFFEN**, D. RILEY, AND J. VAN DEVENTER. Combining Density Functional Theory (DFT) and Pair Distribution Function (PDF) Analysis to Solve the Structure of Metastable Materials: The Case of Metakaolin. *Phys. Chem. Chem. Phys.*, **12**(13), 3239–3245, 2010. doi:[10.1039/b922993k](https://doi.org/10.1039/b922993k).
- [49] C. WHITE, J. PROVIS, **TH. PROFFEN**, D. RILEY, AND J. VAN DEVENTER. Density Functional Modeling of the Local Structure of Kaolinite Subjected to Thermal Dehydroxylation. *J. Phys. Chem. A*, **114**(14), 4988–4996, 2010. doi:[10.1021/jp911108d](https://doi.org/10.1021/jp911108d).
- [50] C. WHITE, J. PROVIS, **TH. PROFFEN**, AND J. VAN DEVENTER. The Effects of Temperature on the Local Structure of Metakaolin-Based Geopolymer Binder: A Neutron Pair Distribution Function Investigation. *J. Am. Ceram. Soc.*, **93**(10), 3486–3492, 2010. doi:[10.1111/j.1551-2916.2010.03906.x](https://doi.org/10.1111/j.1551-2916.2010.03906.x).
- [51] C. WURDEN, K. PAGE, A. LLOBET, C. WHITE, AND **TH. PROFFEN**. Extracting Differential Pair Distribution Functions Using MIXSCAT. *J. Appl. Cryst.*, **43**, 635–638, 2010. doi:[10.1107/S0021889810009155](https://doi.org/10.1107/S0021889810009155).
- [52] M. EVANS, V. KRANAK, F. GARCIA-GARCIA, G. HOLLAND, L. DAEMEN, **TH. PROFFEN**, M. LEE, O. SANKEY, AND U. HAUSSERMANN. Structural and Dynamic Properties of BaInGeH : A Rare Solid-State Indium Hydride. *Inorganic Chem.*, **48**(13), 5602–5604, 2009. doi:[10.1021/ic9005423](https://doi.org/10.1021/ic9005423).
- [53] J. GREEDAN, D. GOUT, A. LOZANO-GORRIN, S. DERAHKSHAN, **TH. PROFFEN**, H. KIM, E. BOZIN, AND S. BILLINGE. Local and Average Structures of the Spin-Glass Pyrochlore $\text{Y}_2\text{Mo}_2\text{O}_7$ from Neutron Diffraction and Neutron Pair Distribution Function Analysis. *Phys. Rev. B*, **79**(1), 2009. doi:[10.1103/PhysRevB.79.014427](https://doi.org/10.1103/PhysRevB.79.014427).
- [54] N. HESS, G. SCHENTER, M. HARTMAN, L. DAEMEN, **TH. PROFFEN**, S. KATHMANN, C. MUNDY, M. HARTL, D. HELDEBRANT, A. STOWE, AND T. AUTREY. Neutron Powder Diffraction and Molecular Simulation Study of the Structural Evolution of Ammonia Borane from 15 to 340 K. *J. Phys. Chem. A*, **113**(19), 5723–5735, 2009. doi:[10.1021/jp900839c](https://doi.org/10.1021/jp900839c).
- [55] H. KIM, A. KARKAMKAR, T. AUTREY, P. CHUPAS, AND **TH. PROFFEN**. Determination of Structure and Phase Transition of Light Element Nanocomposites in Mesoporous Silica: Case study of NH_3BH_3 MCM-41. *J. Am. Chem. Soc.*, **131**(38), 13749–13755, 2009. doi:[10.1021/ja904901d](https://doi.org/10.1021/ja904901d).

- [56] V. KRANAK, M. EVANS, L. DAEMEN, **TH. PROFFEN**, M. LEE, O. SANKEY, AND U. HAUSSERMANN. Structural and Dynamic Properties of the Polyanionic Hydrides SrAlGeH and BaAlGeH. *Solid State Sci.*, **11**(11), 1847–1853, 2009. doi:10.1016/j.solidstatesciences.2009.08.007.
- [57] V. KRAYZMAN, I. LEVIN, J. WOICK, **TH. PROFFEN**, T. VANDERAH, AND M. TUCKER. A Combined Fit of Total Scattering and Extended X-ray Absorption Fine Structure Data for Local-Structure Determination in Crystalline Materials. *J. Appl. Cryst.*, **42**, 867–877, 2009. doi:10.1107/S0021889809023541.
- [58] I. LEVIN, V. KRAYZMAN, J. WOICK, J. KARAPETROVA, **TH. PROFFEN**, M. TUCKER, AND I. REANEY. Structural Changes Underlying the Diffuse Dielectric Response in AgNbO₃. *Phys. Rev. B*, **79**(10), 2009. doi:10.1103/PhysRevB.79.104113.
- [59] D. LOUCA, K. KAMAZAWA, AND **TH. PROFFEN**. Formation of Local Electric Dipoles with no Unique Polar Axis in Tb₃Fe₅O₁₂. *Phys. Rev. B*, **80**(21), 2009. doi:10.1103/PhysRevB.80.214406.
- [60] L. MALAVASI, H. KIM, AND **TH. PROFFEN**. Local and Average Structures of the Proton Conducting Y-doped BaCeO₃ from Neutron Diffraction and Neutron Pair Distribution Function Analysis. *J. Appl. Phys.*, **105**(12), 2009. doi:10.1063/1.3148864.
- [61] B. MELOT, K. PAGE, R. SESHADRI, E. STOUENDMIRE, L. BALENTS, D. BERGMAN, AND **TH. PROFFEN**. Magnetic Frustration on the Diamond Lattice of the A-Site Magnetic Spinels CoAl_{2-x}Ga_xO₄: The Role of Lattice Expansion and Site Disorder. *Phys. Rev. B*, **80**(10), 2009. doi:10.1103/PhysRevB.80.104420.
- [62] **TH. PROFFEN** AND H. KIM. Advances in Total Scattering Analysis. *J. Mater. Chem.*, **19**(29), 5078–5088, 2009. doi:10.1039/b821178g.
- [63] E. RODRIGUEZ, A. LLOBET, **TH. PROFFEN**, B. MELOT, R. SESHADRI, P. LITTLEWOOD, AND A. CHEETHAM. The Role of Static Disorder in Negative Thermal Expansion in ReO₃. *J. Appl. Phys.*, **105**(11), 2009. doi:10.1063/1.3120783.
- [64] J. ROPKA, R. CERNY, V. PAUL-BONCOUR, AND **TH. PROFFEN**. Deuterium Ordering in Laves-Phase Deuteride YFe₂D_{4.2}. *J. Solid State Chem.*, **182**(7), 1907–1912, 2009. doi:10.1016/j.jssc.2009.04.033.
- [65] D. SHOEMAKER, E. RODRIGUEZ, R. SESHADRI, I. ABUMOHOR, AND **TH. PROFFEN**. Intrinsic Exchange Bias in Zn_xMn_{3-x}O₄ (x = 1) Solid Solutions. *Phys. Rev. B*, **80**(14), 2009. doi:10.1103/PhysRevB.80.144422.
- [66] N. SUNDARAM, Y. JIANG, I. ANDERSON, D. BELANGER, C. BOOTH, F. BRIDGES, J. MITCHELL, **TH. PROFFEN**, AND H. ZHENG. Local Structure of La_{1-x}Sr_xCoO₃ Determined from EXAFS and Neutron Pair Distribution Function Studies. *Phys. Rev. Lett.*, **102**(2), 2009. doi:10.1103/PhysRevLett.102.026401.
- [67] R. UBIC, G. SUBODH, D. GOUT, M. SEBASTIAN, AND **TH. PROFFEN**. Crystal Structure of Sr_{0.4}Ce_{0.4}TiO₃ Ceramics. *Chem. Mater.*, **21**(19), 4706–4710, 2009. doi:10.1021/cm9018698.
- [68] M. FABIAN, E. SVAB, **TH. PROFFEN**, AND E. VERESS. Structure Study Of Multi-Component Borosilicate Glasses from High-Q Neutron Diffraction Measurement and RMC Modeling. *J. Non-Cryst. Solids*, **354**(28), 3299–3307, 2008. doi:10.1016/j.jnoncrsol.2008.01.024.
- [69] D. GOUT, O. GOURDON, E. BAUER, F. RONNING, J. THOMPON, AND **TH. PROFFEN**. An Experimental and Theoretical Study of 4f Hybridization across the La_{1-x}Ce_xIn₃ series. *Inorganic Chem.*, **47**(7), 2569–2575, 2008. doi:10.1021/ic701930j.
- [70] Y. KIM, S. CADARS, R. SHAYIB, **TH. PROFFEN**, C. FEIGERLE, B. CHMELKA, AND R. SESHADRI. Local Structures of Polar Wurtzites Zn_{1-x}Mg_xO Studied by Raman and Zn-67/Mg-25 NMR Spectroscopies and by Total Neutron Scattering. *Phys. Rev. B*, **78**(19), 2008. doi:10.1103/PhysRevB.78.195205.
- [71] L. MALAVASI, H. KIM, AND **TH. PROFFEN**. New Insight into the Properties of Proton-Conducting Oxides from Neutron Total Scattering. *ChemPhysChem*, **9**(16), 2309–2312, 2008. doi:10.1002/cphc.200800514.
- [72] K. PAGE, T. KOLODIAZHNYI, **TH. PROFFEN**, A. CHEETHAM, AND R. SESHADRI. Local Structural Origins of the Distinct Electronic Properties of Nb-Substituted SrTiO₃ and BaTiO₃. *Phys. Rev. Lett.*, **101**(20), 2008. doi:10.1103/PhysRevLett.101.205502.
- [73] K. PAGE, J. LI, R. SAVINELLI, H. SZUMILA, J. ZHANG, J. STALICK, **TH. PROFFEN**, S. SCOTT, AND R. SESHADRI. Reciprocal-Space and Real-Space Neutron Investigation of Nanostructured Mo₂C and WC. *Solid State Sci.*, **10**(11), 1499–1510, 2008. doi:10.1016/j.solidstatesciences.2008.03.018.
- [74] **TH. PROFFEN**. Total Neutron Scattering: The Key to the Local And Medium Range Structure of Complex Materials. *Pramana - J. Phys.*, **71**(4), 713–719, 2008. doi:10.1007/s12043-008-0260-4.
- [75] R. UBIC, G. SUBODH, M. SEBASTIAN, D. GOUT, AND **TH. PROFFEN**. Structure of Compounds in the Sr_{1-3x/2}Ce_xTiO₃ Homologous Series. *Chem. Mater.*, **20**(9), 3127–3133, 2008. doi:10.1021/cm703659f.
- [76] E. BOZIN, X. QIU, R. WORHATCH, G. PAGLIA, M. SCHMIDT, P. RADAELLI, J. MITCHELL, T. CHATTERJI, **TH. PROFFEN**, AND S. BILLINGE. Utilizing total scattering to study the Jahn-Teller transition in La_{1-x}Ca_xMnO₃. *Z. Krist.*, pages 429–434, 2007.
- [77] E. BOZIN, M. SCHMIDT, A. DECONINCK, G. PAGLIA, J. MITCHELL, T. CHATTERJI, P. RADAELLI, **TH. PROFFEN**, AND S. BILLINGE. Understanding the Insulating Phase in Colossal Magnetoresistance Manganites: Shortening of the Jahn-Teller Long-Bond across the Phase Diagram of La_{1-x}Ca_xMnO₃. *Phys. Rev. Lett.*, **98**(13), 2007. doi:10.1103/PhysRevLett.98.137203.
- [78] C.L. FARROW, P. JUHAS, J.W. LIU, D. BRYNDIN, E.S. BOZIN, J. BLOCH, **TH. PROFFEN**, AND S.J.L. BILLINGE. PDFfit2 and PDFgui: Computer Programs for Studying Nanostructure in Crystals. *J. Condens. Matter Phys.*, **19**(33), 2007. doi:10.1088/0953-8984/19/33/335219.
- [79] M. FEUERBACHER, C. THOMAS, J. MAKONGO, S. HOFFMANN, W. CARRILLO-CABRERA, R. CARDOSO, Y. GRIN, G. KREINER, J. JOUBERT, T. SCHENK, J. GASTALDI, H. NGUYEN-THI, N. MANGELINCK-NOEL, B. BILLIA, P. DONNADIEU, A. CZYRSKA-FILEMONOWICZ, A. ZIELINSKA-LIPIEC, B. DUBIEL, T. WEBER, P. SCHAUB, G. KRAUSS, V. GRAMLICH, J. CHRISTENSEN, S. LIDIN, D. FREDRICKSON, M. MIHALKOVIC, W. SIKORA, J. MALINOWSKI, S. BRUHNE, **TH. PROFFEN**, W. ASSMUS, M. DE BOISSIEU, F. BLEY, J. CHEMIN, J. SCHREUER, AND W. STEURER. The Samson Phase, beta-Mg₂Al₃, Revisited. *Z. Krist.*, **222**(6), 259–288, 2007. doi:10.1524/zkri.2007.222.6.259.

- [80] O. GOURDON, D. GOUT, D. WILLIAMS, **TH. PROFFEN**, S. HOBBS, AND G. MILLER. Atomic Distributions in the Gamma-Brass Structure of the Cu-Zn system: A structural and Theoretical Study. *Inorganic Chem.*, **46**(1), 251–260, 2007. doi:[10.1021/ic0616380](https://doi.org/10.1021/ic0616380).
- [81] I. JEONG, N. HUR, AND **TH. PROFFEN**. High-Temperature Structural Evolution of Hexagonal Multiferroic YMnO₃ and YbMnO₃. *J. Appl. Cryst.*, **40**, 730–734, 2007. doi:[10.1107/S0021889807025101](https://doi.org/10.1107/S0021889807025101).
- [82] J. LI, U. SINGH, J. BENNETT, K. PAGE, J. WEAVER, J. ZHANG, **TH. PROFFEN**, A. RAPPE, S. SCOTT, AND R. SESHADRI. BaCe_{1-x}Pd_xO_{3-delta} (0 ≤ x ≤ 0.1): Redox Controlled Ingress and Egress of Palladium in a Perovskite. *Chem. Mater.*, **19**(6), 1418–1426, 2007. doi:[10.1021/cm062500i](https://doi.org/10.1021/cm062500i).
- [83] D. MA, A. STOICA, L. YANG, X. WANG, Z. LU, J. NEUEFEIND, M. KRAMER, J. RICHARDSON, AND **TH. PROFFEN**. Nearest-Neighbor Coordination and Chemical Ordering in Multicomponent Bulk Metallic Glasses. *Appl. Phys. Lett.*, **90**(21), 2007. doi:[10.1063/1.2742315](https://doi.org/10.1063/1.2742315).
- [84] L. MALAVASI, H. KIM, S. BILLINGE, **TH. PROFFEN**, C. TEALDI, AND G. FLOR. Nature of the Monoclinic to Cubic Phase Transition in the Fast Oxygen Ion Conductor La₂Mo₂O₉ (LAMOX). *J. Am. Chem. Soc.*, **129**(21), 6903–6907, 2007. doi:[10.1021/ja071281e](https://doi.org/10.1021/ja071281e).
- [85] P. OJEDA-MAY, M. TERRONES, H. TERRONES, D. HOFFMAN, **TH. PROFFEN**, AND A. CHEETHAM. Determination of Chiralities of Single-Walled Carbon Nanotubes by Neutron Powder Diffraction Technique. *Diam. Relat. Mater.*, **16**(3), 473–476, 2007. doi:[10.1016/j.diamond.2006.09.019](https://doi.org/10.1016/j.diamond.2006.09.019).
- [86] K. PAGE, C. SCHADE, J. ZHANG, P. CHUPAS, K. CHAPMAN, **TH. PROFFEN**, A. CHEETHAM, AND R. SESHADRI. Preparation and Characterization of Pd₂Sn Nanoparticles. *Mater. Res. Bull.*, **42**(12), 1969–1975, 2007. doi:[10.1016/j.materresbull.2007.05.010](https://doi.org/10.1016/j.materresbull.2007.05.010).
- [87] K. PAGE, M. STOLTZFUS, Y. KIM, **TH. PROFFEN**, P. WOODWARD, A. CHEETHAM, AND R. SESHADRI. Local Atomic Ordering in BaTaO₂N Studied by Neutron Pair Distribution Function Analysis and Density Functional Theory. *Chem. Mater.*, **19**(16), 4037–4042, 2007. doi:[10.1021/cm0709673](https://doi.org/10.1021/cm0709673).
- [88] K. RAMESHA, A. LLOBET, **TH. PROFFEN**, C. SERRAO, AND C. RAO. Observation of Local Non-Centrosymmetry in Weakly Biferroic YCrO₃. *J. Condens. Matter Phys.*, **19**(10), 2007. doi:[10.1088/0953-8984/19/10/102202](https://doi.org/10.1088/0953-8984/19/10/102202).
- [89] S. STELMAKH, E. GRZANKA, M. WOJDYR, **TH. PROFFEN**, S. VOGEL, T. ZERDA, W. PALOSZ, AND B. PALOSZ. Neutron Diffraction Studies of the Atomic Thermal Vibrations in Complex Materials: Application of the Wilson Method to Examination of Micro- And Nano-Crystalline SiC. *Z. Krist.*, **222**(3–4), 174–185, 2007. doi:[10.1524/zkri.2007.222.3-4.174](https://doi.org/10.1524/zkri.2007.222.3-4.174).
- [90] D. WILLIAMS, L. DAEMEN, S. VOGEL, AND **TH. PROFFEN**. Temperature Dependence of the Crystal Structure of alpha-AgSCN by Powder Neutron Diffraction. *J. Appl. Cryst.*, **40**, 1039–1043, 2007. doi:[10.1107/S0021889807048236](https://doi.org/10.1107/S0021889807048236).
- [91] M. WOJDYR, Y. MO, E. GRZANKA, S. STELMAKH, S. GIERLOTKA, **TH. PROFFEN**, T. ZERDA, B. PALOSZ, AND I. SZLUFARSKA. Transition of nc-SiC Powder Surface into Grain Boundaries During Sintering by Molecular Dynamics Simulation and Neutron Powder Diffraction. *Z. Krist.*, pages 255–260, 2007. doi:[10.1524/zksu.2007.2007.suppl.26.255](https://doi.org/10.1524/zksu.2007.2007.suppl.26.255).
- [92] G. CAMPI, E. CAPPELLUTI, **TH. PROFFEN**, X. QIU, E. BOZIN, S. BILLINGE, S. AGRESTINI, N. SAINI, AND A. BIANCONI. Study of Temperature Dependent Atomic Correlations in MgB₂. *Eur. Phys. J. B*, **52**(1), 15–21, 2006. doi:[10.1140/epjb/e2006-00269-7](https://doi.org/10.1140/epjb/e2006-00269-7).
- [93] C. FAN, P. LIAW, T. WILSON, H. CHOO, Y. GAO, C. LIU, **TH. PROFFEN**, AND J. RICHARDSON. Pair Distribution Function Study and Mechanical Behavior of as-Cast and Structurally Relaxed Zr-Based Bulk Metallic Glasses. *Appl. Phys. Lett.*, **89**(23), 2006. doi:[10.1063/1.2402884](https://doi.org/10.1063/1.2402884).
- [94] C. FAN, P. LIAW, T. WILSON, W. DMOWSKI, H. CHOO, C. LIU, J. RICHARDSON, AND **TH. PROFFEN**. Structural Model for Bulk Amorphous Alloys. *Appl. Phys. Lett.*, **89**(11), 2006. doi:[10.1063/1.2345276](https://doi.org/10.1063/1.2345276).
- [95] R. HOWELL, **TH. PROFFEN**, AND S. CONRADSON. Pair Distribution Function and Structure Factor of Spherical Particles. *Phys. Rev. B*, **73**(9), 2006. doi:[10.1103/PhysRevB.73.094107](https://doi.org/10.1103/PhysRevB.73.094107).
- [96] G. LAWES, B. MELOT, K. PAGE, C. EDERER, M. HAYWARD, **TH. PROFFEN**, AND R. SESHADRI. Dielectric Anomalies and Spiral Magnetic Order in CoCr₂O₄. *Phys. Rev. B*, **74**(2), 2006. doi:[10.1103/PhysRevB.74.024413](https://doi.org/10.1103/PhysRevB.74.024413).
- [97] O. MASALA, D. HOFFMAN, N. SUNDARAM, K. PAGE, **TH. PROFFEN**, G. LAWES, AND R. SESHADRI. Preparation of Magnetic Spinel Ferrite Core/Shell Nanoparticles: Soft Ferrites on Hard Ferrites and Vice Versa. *Solid State Sci.*, **8**(9), 1015–1022, 2006. doi:[10.1016/j.solidstatesciences.2006.04.014](https://doi.org/10.1016/j.solidstatesciences.2006.04.014).
- [98] S. MCLAIN, M. DOLGOS, D. TENNANT, J. TURNER, T. BARNES, **TH. PROFFEN**, B. SALES, AND R. BEWLEY. Magnetic Behaviour of Layered Ag(II) Fluorides. *Nature Mat.*, **5**(7), 561–566, 2006. doi:[10.1038/nmat1670](https://doi.org/10.1038/nmat1670).
- [99] B. MELOT, E. RODRIGUEZ, **TH. PROFFEN**, M. HAYWARD, AND R. SESHADRI. Displacive Disorder in Three High-K Bismuth Oxide Pyrochlores. *Mater. Res. Bull.*, **41**(5), 961–966, 2006. doi:[10.1016/j.materresbull.2006.02.004](https://doi.org/10.1016/j.materresbull.2006.02.004).
- [100] S. SHAMOTO, K. KODAMA, S. IKUBO, T. TAGUCHI, N. YAMADA, AND **TH. PROFFEN**. Local Crystal Structures Of Ge₂Sb₂Te₅ Revealed by The Atomic Pair Distribution Function Analysis. *Jpn. J. Appl. Phys.*, **45**(11), 8789–8794, 2006. doi:[10.1143/JJAP.45.8789](https://doi.org/10.1143/JJAP.45.8789).
- [101] Z. ZHANG, D. LOUCA, A. VISINOIU, S. LEE, J. THOMPSON, **TH. PROFFEN**, A. LLOBET, Y. QIU, S. PARK, AND Y. UEDA. Local Order and Frustration in the Geometrically Frustrated Spinels Cd_{1-x}Zn_xV₂O₄. *Phys. Rev. B*, **74**(1), 2006. doi:[10.1103/PhysRevB.74.014108](https://doi.org/10.1103/PhysRevB.74.014108).
- [102] J. BREGER, N. DUPRE, P. CHUPAS, P. LEE, **TH. PROFFEN**, J. PARISE, AND C. GREY. Short- and Long-Range Order in the Positive Electrode Material, Li(NiMn)(0.5)O-2: A Joint X-Ray and Neutron Diffraction, Pair Distribution Function Analysis and NMR Study. *J. Am. Chem. Soc.*, **127**(20), 7529–7537, 2005. doi:[10.1021/ja050697u](https://doi.org/10.1021/ja050697u).
- [103] J. CHUNG, **TH. PROFFEN**, S. SHAMOTO, A. GHORAYEB, L. CROGUENNEC, W. TIAN, B. SALES, R. JIN, D. MANDRUS, AND T. EGAMI. Local Structure of LiNiO₂ Studied by Neutron Diffraction. *Phys. Rev. B*, **71**(6), 2005. doi:[10.1103/PhysRevB.71.064410](https://doi.org/10.1103/PhysRevB.71.064410).

- [104] I. JEONG, T. DARLING, J. LEE, **TH. PROFFEN**, R. HEFFNER, J. PARK, K. HONG, W. DMOWSKI, AND T. EGAMI. Direct Observation of the Formation of Polar Nanoregions in Pb(Mg_{1/3}Nb_{2/3})O₃ using Neutron Pair Distribution Function Analysis. *Phys. Rev. Lett.*, **94**(14), 2005. doi:10.1103/PhysRevLett.94.147602.
- [105] V. KAZIMIROV, D. LOUCA, V. PONNAMBALAM, S. POON, AND **TH. PROFFEN**. Modeling the atomic structure of amorphous steels using crystalline approximants. *Phys. Rev. B*, **72**(5), 2005. doi:10.1103/PhysRevB.72.054207.
- [106] M. MARTINEZ-INESTA, I. PERAL, **TH. PROFFEN**, AND R. LOBO. A pair Distribution Function Analysis of Zeolite Beta. *Micropor. Mesopor. Mat.*, **77**(1), 55–66, 2005. doi:10.1016/j.micromeso.2004.07.040.
- [107] **TH. PROFFEN**, K. PAGE, S. MCLAIN, B. CLAUSEN, T. DARLING, J. TENCATE, S. LEE, AND E. USTUNDAG. Atomic Pair Distribution Function Analysis of Materials Containing Crystalline and Amorphous Phases. *Z. Krist.*, **220**(12), 1002–1008, 2005.
- [108] X. QIU, **TH. PROFFEN**, J. MITCHELL, AND S. BILLINGE. Orbital Correlations in the Pseudocubic O and Rhombohedral R Phases of LaMnO₃. *Phys. Rev. Lett.*, **94**(17), 2005. doi:10.1103/PhysRevLett.94.177203.
- [109] E. RODRIGUEZ, **TH. PROFFEN**, A. LLOBET, J. RHYNE, AND J. MITCHELL. Neutron Diffraction Study of Average and Local Structure in La_{0.5}Ca_{0.5}MnO₃. *Phys. Rev. B*, **71**(10), 2005. doi:10.1103/PhysRevB.71.104430.
- [110] S. SHAMOTO, N. YAMADA, T. MATSUNAGA, **TH. PROFFEN**, J. RICHARDSON, J. CHUNG, AND T. EGAMI. Large Displacement of Germanium Atoms in Crystalline Ge₂Sb₂Te₅. *Appl. Phys. Lett.*, **86**(8), 2005. doi:10.1063/1.1861976.
- [111] I. JEONG, T. DARLING, M. GRAF, **TH. PROFFEN**, R. HEFFNER, Y. LEE, T. VOGT, AND J. JORGENSEN. Role of the Lattice in the gamma ->alpha Phase Transition of Ce: A High-Pressure Neutron and X-ray Diffraction Study. *Phys. Rev. Lett.*, **92**(10), 2004. doi:10.1103/PhysRevLett.92.105702.
- [112] M. MARTINEZ-INESTA, I. PERAL, **TH. PROFFEN**, AND R. LOBO. A Pair Distribution Function Analysis for Zeolite Beta. *Stud. Surf. Sci. Catal.*, **154**, 1393–1399, 2004. doi:10.1016/S0167-2991(04)80655-4.
- [113] K. PAGE, **TH. PROFFEN**, S. MCLAIN, T. DARLING, AND J. TENCATE. Local Atomic Structure of Fontainebleau Sandstone: Evidence for an Amorphous Phase? *Geophys. Res. Lett.*, **31**(24), 2004. doi:10.1029/2004GL021717.
- [114] K. PAGE, **TH. PROFFEN**, H. TERRONES, M. TERRONES, L. LEE, Y. YANG, S. STEMMER, R. SESHADRI, AND A. CHEETHAM. Direct Observation of The Structure Of Gold Nanoparticles by Total Scattering Powder Neutron Diffraction. *Chem. Phys. Lett.*, **393**(4-6), 385–388, 2004. doi:10.1016/j.cplett.2004.05.107.
- [115] **TH. PROFFEN** AND K. PAGE. Obtaining Structural Information from the Atomic Pair Distribution Function. *Z. Krist.*, **219**(3), 130–135, 2004. doi:10.1524/zkri.219.3.130.29100.
- [116] X. QIU, E. BOZIN, P. JUHAS, **TH. PROFFEN**, AND S. BILLINGE. Reciprocal-Space Instrumental Effects on the Real-Space Neutron Atomic Pair Distribution Function. *J. Appl. Cryst.*, **37**, 110–116, 2004. doi:10.1107/S0021889803026670.
- [117] B. PALOSZ, E. GRZANKA, S. STEL'MAKH, S. GIERLOTKA, R. PIELASZEK, U. BISMAYER, H. WEBER, **TH. PROFFEN**, AND W. PALOSZ. Application of Powder Diffraction Methods to the Analysis of Short- and Long-Range Atomic Order in Nanocrystalline Diamond and SiC: The Concept of the Apparent Lattice Parameter (alp). *Sol. St. Phen.*, **94**, 203–216, 2003. doi:10.4028/www.scientific.net/SSP94.203.
- [118] P. PETERSON, E. BOZIN, **TH. PROFFEN**, AND S. BILLINGE. Improved Measures of Quality for the Atomic Pair Distribution Function. *J. Appl. Cryst.*, **36**, 53–64, 2003. doi:10.1107/S0021889802018708.
- [119] **TH. PROFFEN**, S. BILLINGE, T. EGAMI, AND D. LOUCA. Structural Analysis of Complex Materials Using the Atomic Pair Distribution Function - A Practical Guide. *Z. Krist.*, **218**(2), 132–143, 2003. doi:10.1524/zkri.218.2.132.20664.
- [120] B. PALOSZ, E. GRZANKA, S. GIERLOTKA, S. STEL'MAKH, R. PIELASZEK, U. BISMAYER, J. NEUEFEIND, H. WEBER, **TH. PROFFEN**, R. VON DREELE, AND W. PALOSZ. Analysis of Short and Long Range Atomic Order in Nanocrystalline Diamonds with Application of Powder Diffractometry. *Z. Krist.*, **217**(10), 497–509, 2002. doi:10.1524/zkri.217.10.497.20795.
- [121] **TH. PROFFEN**, V. PETKOV, S. BILLINGE, AND T. VOGT. Chemical Short Range Order Obtained from the Atomic Pair Distribution Function. *Z. Krist.*, **217**(2), 47–50, 2002. doi:10.1524/zkri.217.2.47.20626.
- [122] P. PETERSON, **TH. PROFFEN**, I. JEONG, S. BILLINGE, K. CHOI, M. KANATZIDIS, AND P. RADAELLI. Local Atomic Strain in ZnSe_{1-x}Te_x from High Real-Space Resolution Neutron Pair Distribution Function Measurements. *Phys. Rev. B*, **63**(16), 2001. doi:10.1103/PhysRevB.63.165211.
- [123] **TH. PROFFEN**, R. NEDER, AND S. BILLINGE. Teaching Diffraction Using Computer Simulations Over the Internet. *J. Appl. Cryst.*, **34**, 767–770, 2001. doi:10.1107/S0021889801013656.
- [124] S. BILLINGE, **TH. PROFFEN**, V. PETKOV, J. SARRAO, AND S. KYCIA. Evidence for charge localization in the ferromagnetic phase of La_{1-x}Ca_xMnO₃ from high real-space-resolution x-ray diffraction. *Phys. Rev. B*, **62**(2), 1203–1211, 2000. doi:10.1103/PhysRevB.62.1203.
- [125] P.F. PETERSON, M. GUTMANN, **TH. PROFFEN**, AND S.J.L. BILLINGE. PDFgetN: a User-Friendly Program to Extract the Total Scattering Structure Factor and the Pair Distribution Function from Neutron Powder Diffraction Data. *J. Appl. Cryst.*, **33**, 1192–1192, 2000. doi:10.1107/S0021889800007123.
- [126] V. PETKOV, I. JEONG, F. MOHIUDDIN-JACOBS, **TH. PROFFEN**, S. BILLINGE, AND W. DMOWSKI. Local Structure of In_{0.5}Ga_{0.5}As from Joint High-Resolution and Differential Pair Distribution Function Analysis. *J. Appl. Phys.*, **88**(2), 665–672, 2000. doi:10.1063/1.373718.
- [127] **TH. PROFFEN**. Analysis of Occupational and Displacive Disorder Using the Atomic Pair Distribution Function: a Systematic Investigation. *Z. Krist.*, **215**(11), 661–668, 2000. doi:10.1524/zkri.2000.215.11.661.

- [128] I. JEONG, **TH. PROFFEN**, F. MOHIUDDIN-JACOBS, AND S. BILLINGE. Measuring Correlated Atomic Motion using X-ray Diffraction. *J. Phys. Chem. A*, **103**(7), 921–924, 1999. doi:10.1021/jp9836978.
- [129] S. MAYO, **TH. PROFFEN**, H. BOWN, AND WELBERRY T.R. Diffuse Scattering and Monte Carlo Simulations of Cyclohexane-Perhydrotriphenylene (PHTP) Inclusion Compounds, $C_6H_{12}/C_{18}H_{30}$. *J. Appl. Cryst.*, **32**, 464–471, 1999. doi:10.1107/S0021889898018470.
- [130] **TH. PROFFEN** AND S. BILLINGE. PDFFIT, a Program for Full Profile Structural Refinement of the Atomic Pair Distribution Function. *J. Appl. Cryst.*, **32**, 572–575, 1999. doi:10.1107/S0021889899003532.
- [131] **TH. PROFFEN**, R. DIFRANCESCO, S. BILLINGE, E. BROSHA, AND G. KWEI. Measurement of the Local Jahn-Teller Distortion in $LaMnO_{3.006}$. *Phys. Rev. B*, **60**(14), 9973–9977, 1999. doi:10.1103/PhysRevB.60.9973.
- [132] R. WITHERS, **TH. PROFFEN**, AND WELBERRY T.R. Inter-Sublattice Ordering Correlations and the Geometrical Locus Approach to Localized Diffuse Scattering. *Philos. Mag. A*, **79**(3), 753–762, 1999. doi:10.1080/01418619908210329.
- [133] **TH. PROFFEN** AND WELBERRY T.R. Analysis of Diffuse Scattering from Single Crystals via the Reverse Monte Carlo Technique. II. The Defect Structure of Calcium-Stabilized Zirconia. *J. Appl. Cryst.*, **31**, 318–326, 1998. doi:10.1107/S002188989701087X.
- [134] TH. WELBERRY T.R. AND PROFFEN. Analysis of Diffuse Scattering from Single Crystals via the Reverse Monte Carlo Technique. I. Comparison with Direct Monte Carlo. *J. Appl. Cryst.*, **31**, 309–317, 1998. doi:10.1107/S0021889897010789.
- [135] TH. WELBERRY T.R. AND PROFFEN AND M. BOWN. Analysis of sIngle-Crystal Diffuse X-Ray Scattering via Automatic Refinement of a Monte Carlo Model. *Acta Cryst. A*, **54**, 661–674, 1998. doi:10.1107/S010876739800419X.
- [136] **TH. PROFFEN** AND R.B. NEDER. Discus: A program for diffuse scattering and defect-structure simulation. *J. Appl. Cryst.*, **30**, 171–175, 1997. doi:10.1107/S002188989600934X.
- [137] **TH. PROFFEN** AND WELBERRY T.R. An Improved Method for Analysing Single Crystal Diffuse Scattering using the Reverse Monte Carlo Technique. *Z. Krist.*, **212**(11), 764–767, 1997. doi:10.1524/zkri.1997.212.11.764.
- [138] **TH. PROFFEN** AND WELBERRY T.R. Analysis of Diffuse Scattering via the Reverse Monte Carlo Technique: A Systematic Investigation. *Acta Cryst. A*, **53**, 202–216, 1997. doi:10.1107/S0108767396013517.
- [139] H. KAHLERT, F. FREY, H. BOYSEN, **TH. PROFFEN**, S. MASON, AND W. WEPPNER. Structural Investigations of the Ionic Conductivity in Zirconia Crystals by Neutron Diffraction at High Temperatures and Simultaneously Applied Electric Field. *Ionics*, **2**(2), 88–96, 1996. doi:10.1007/BF02375800.
- [140] R. NEDER AND **TH. PROFFEN**. Teaching Diffraction with the Aid of Computer Simulations. *J. Appl. Cryst.*, **29**, 727–735, 1996. doi:10.1107/S002188989600619X.
- [141] **TH. PROFFEN**, M. KEILHOLZ, R. NEDER, F. FREY, AND D. KEEN. Neutron and X-ray Diffuse Scattering of Calcium-Stabilized Zirconia at Temperatures up to 1500 K. *Acta Cryst. B*, **52**, 66–71, 1996. doi:10.1107/S0108768195010044.
- [142] **TH. PROFFEN**, R. NEDER, AND F. FREY. 3D Data Set of Diffuse X-ray Scattering of Calcium-Stabilized Zirconia. *J. Solid State Chem.*, **126**(1), 33–37, 1996. doi:10.1006/jssc.1996.0306.
- [143] **TH. PROFFEN**, R. NEDER, AND F. FREY. Neutron and X-ray Diffuse Scattering of Calcium-Stabilized Zirconia. *Acta Cryst. B*, **52**, 59–65, 1996. doi:10.1107/S0108768195007920.
- [144] K. HRADIL, **TH. PROFFEN**, F. FREY, K. EICHHORN, AND S. KEK. Diffuse Scattering of Decagonal $Al_{70}Ni_{15}Co_{15}$ Measured with Synchrotron Radiation. *Phil. Mag. Lett.*, **71**(3), 199–205, 1995. doi:10.1080/09500839508241282.
- [145] K. HRADIL, **TH. PROFFEN**, F. FREY, S. KEK, H. KRANE, AND T. WROBLEWSKI. X-Ray Diffuse-Scattering in the Decagonal Phases $Al_{70}Ni_{15}Co_{15}$, $Al_{72.5}Ni_{11}Co_{16}$ and $Al_{62}Cu_{20}Co_{15}Si_3$ Up To 1150 K. *Phil. Mag. B*, **71**(5), 955–966, 1995. doi:10.1080/01418639508243599.
- [146] **TH. PROFFEN**, F. FREY, H. PLOCKL, AND H. KRANE. A Mirror Furnace for Synchrotron Diffraction Experiments up to 1600 K. *J. Synchrotron Radiat.*, **2**, 229–232, 1995. doi:10.1107/S0909049595003980.
- [147] **TH. PROFFEN**, R. NEDER, F. FREY, AND W. ASSMUS. Defect Structure and Diffuse-Scattering of Zirconia Single-Crystals Doped with 7-Mol-Percent CaO. *Acta Cryst. B*, **49**, 599–604, 1993. doi:10.1107/S0108768193000126.
- [148] **TH. PROFFEN**, R. NEDER, F. FREY, D. KEEN, AND C. ZEYEN. Defect Structure and Diffuse-Scattering of Zirconia Single-Crystals with 10-Mol-Percent and 15-Mol-Percent CaO at Temperatures Up To 1750-K. *Acta Cryst. B*, **49**, 605–610, 1993. doi:10.1107/S0108768193000138.

Conference Proceedings

- [1] C. GARCIA-CARDONA, R. KANNAN, T. JOHNSTON, **TH. PROFFEN**, AND S. K. SEAL. Structure prediction from neutron scattering profiles: A data sciences approach. In *2020 IEEE International Conference on Big Data (Big Data)*, pages 1147–1155, Dec 2020. doi:10.1109/BigData50022.2020.9377853.
- [2] C. GARCIA-CARDONA, R. KANNAN, T. JOHNSTON, **TH. PROFFEN**, K. PAGE, AND S. K. SEAL. Learning to predict material structure from neutron scattering data. In *2019 IEEE International Conference on Big Data (Big Data)*, pages 4490–4497, Dec 2019. doi:10.1109/BigData47090.2019.9005968.
- [3] C.A. STEED, J. DANIEL, M. DROUHARD, S. HAHN, AND **TH. PROFFEN**. Immersive Visual Analytics for Transformative Neutron Scattering Science. In *2016 Workshop on Immersive Analytics (Ia)*, pages 38–43, 2016. doi:10.1109/IMMERSIVE.2016.7932381.

- [4] J.M. BORREGUERO, S.I. CAMPBELL, O.A. DELAIRE, M. DOUCET, M. GOSWAMI, M.E. HAGEN, V.E. LYNCH, **TH. PROFFEN**, S. REN, A.T. SAVICI, B.G. SUMPTER, AND TMS. Integrating Advanced Materials Simulation Techniques into an Automated Data Analysis Workflow at the Spallation Neutron Source. pages 297–308, 2014. doi:[10.1007/978-3-319-48237-8_39](https://doi.org/10.1007/978-3-319-48237-8_39).
- [5] M. BRAGA, A. ACATRINEL, M. HARTL, S. VOGEL, **TH. PROFFEN**, AND L. DAEMEN. New Promising Hydride Based on the Cu-Li-Mg System. *J. Phys.: Conf. Ser.*, **251**, 012040, 2010. doi:[10.1088/1742-6596/251/1/012040](https://doi.org/10.1088/1742-6596/251/1/012040).
- [6] S.D. MILLER, K.W. HERWIG, S. REN, S.S. VAZHKUDAI, P.R. JEMIAN, S. LUITZ, A.A. SALNIKOV, I. GAPONENKO, **TH. PROFFEN**, P. LEWIS, AND M.L. GREEN. Data Management and its Role in Delivering Science at DOE BES User Facilities: Past, Present, and Future. *J. Phys.: Conf. Ser.*, page 012049, 2009. doi:[10.1088/1742-6596/180/1/012049](https://doi.org/10.1088/1742-6596/180/1/012049).
- [7] E. BOZIN, A. SARTBAEVA, H. ZHENG, S. WELLS, J. MITCHELL, **TH. PROFFEN**, M. THORPE, AND S. BILLINGE. Structure of CaMnO₃ in the Range 10 K ≤ T ≤ 550 K from Neutron Time-Of-Flight Total Scattering. *J. Phys. Chem. Solids*, **69**, 2146–2150, 2008. doi:[10.1016/j.jpcs.2008.03.029](https://doi.org/10.1016/j.jpcs.2008.03.029).
- [8] T. WILSON, B. CLAUSEN, **TH. PROFFEN**, J. ELLE, AND D. BROWN. In-situ Neutron Scattering Measurement of Stress-Strain Behavior of a Bulk Metallic Glass. *Metall. and Mat. Trans. A*, **39**, 1942–1946, 2008. doi:[10.1007/s11661-007-9268-5](https://doi.org/10.1007/s11661-007-9268-5).
- [9] G. CAMPI, **TH. PROFFEN**, X. QIU, E. BOZIN, S. BILLINGE, S. AGRESTINI, N. SAINI, AND A. BIANCONI. Local Lattice Dynamics in the Mg_{0.5}Al_{0.5}B₂ Superconductor. *J. Supercond. Nov. Magn.*, **20**, 505–510, 2007. doi:[10.1007/s10948-007-0277-9](https://doi.org/10.1007/s10948-007-0277-9).
- [10] M. FABIAN, P. JOVARI, E. SVAB, G. MESZAROS, **TH. PROFFEN**, AND E. VERESS. Network Structure Of 0.7SiO₂-0.3Na₂O Glass from Neutron and X-Ray Diffraction and RMC Modelling. *J. Phys.: Condens. Matter*, **19**, 335209, 2007. doi:[10.1088/0953-8984/19/33/335209](https://doi.org/10.1088/0953-8984/19/33/335209).
- [11] M. FABIAN, E. SVAB, G. MESZAROS, Z. REVAY, **TH. PROFFEN**, AND E. VERESS. Network Structure of Multi-Component Sodium Borosilicate Glasses by Neutron Diffraction. *J. Non-Cryst. Solids*, **353**, 2084–2089, 2007. doi:[j.jnoncrysol.2007.02.030](https://doi.org/10.1016/j.jnoncrysol.2007.02.030).
- [12] E. BOZIN, X. QIU, M. SCHMIDT, G. PAGLIA, J. MITCHELL, P. RADAELLI, **TH. PROFFEN**, AND S. BILLINGE. Local Structural Aspects of the Orthorhombic to Pseudo-Cubic Phase Transformation in La_{1-x}CaxMnO₃. *Physica B*, **385**, 110–112, 2006. doi:[10.1016/j.physb.2006.05.137](https://doi.org/10.1016/j.physb.2006.05.137).
- [13] T. DARLING, J. TENCATE, S. VOGEL, **TH. PROFFEN**, K. PAGE, C. HERRERA, A. COVINGTON, AND E. EMMONS. Localizing Nonclassical Nonlinearity in Geological Materials with Neutron Scattering Experiments. *AIP Conference Proceedings*, **838**, 19–26, 2006. doi:[10.1063/1.2210311](https://doi.org/10.1063/1.2210311).
- [14] B. PALOSZ, C. PANTEA, E. GRZANKA, S. STELMAKH, **TH. PROFFEN**, T. ZERDA, AND W. PALOSZ. Investigation of Relaxation of Nanodiamond Surface in Real and Reciprocal Spaces. *Diam. Relat. Mater.*, **15**, 1813–1817, 2006. doi:[j.diamond.2006.09.001](https://doi.org/10.1016/j.diamond.2006.09.001).
- [15] S. SHAMOTO, N. YAMADA, T. MATSUNAGA, AND **TH. PROFFEN**. Structural Study on Optical Recording Materials Ge₂Sb_{2+x}Te₅ and GeBi₂Te₄. *Physica B*, **385**, 574–577, 2006. doi:[10.1016/j.physb.2006.05.363](https://doi.org/10.1016/j.physb.2006.05.363).
- [16] T. PROFFEN, T. EGAMI, S. BILLINGE, A. CHEETHAM, D. LOUCA, AND J. PARISE. Building a High Resolution Total Scattering Powder Diffractometer Upgrade of NPD at MLNSC. *Appl. Phys. A*, **74**, S163–S165, 2002. doi:[10.1007/s003390201](https://doi.org/10.1007/s003390201).
- [17] **TH. PROFFEN** AND S. BILLINGE. Probing the Local Structure of Doped Manganites using the Atomic Pair Distribution Function. *Appl. Phys. A*, **74**, S1770–S1772, 2002. doi:[10.1007/s003390201846](https://doi.org/10.1007/s003390201846).
- [18] S. BILLINGE, V. PETKOV, **TH. PROFFEN**, G. KWEI, J. SARRAO, S. SHASTRI, AND S. KYCIA. Charge inhomogeneities in the colossal magnetoresistant manganites from the local atomic structure. *MRS Proceedings*, **602**, 177–182, 1999. doi:[10.1557/PROC-602-177](https://doi.org/10.1557/PROC-602-177).
- [19] **TH. PROFFEN** AND T. WELBERRY. Analysis of Diffuse Scattering of Single Crystals using Monte Carlo Methods. *Phase Transitions*, **67**, 373–397, 1998. doi:[10.1080/01411599808219201](https://doi.org/10.1080/01411599808219201).
- [20] **TH. PROFFEN**. Analysis of the Diffuse Neutron and X-ray Scattering of Stabilised Zirconia using the Reverse-Monte-Carlo Method. *Physica B*, **241**, 281–288, 1997. doi:[10.1016/S0921-4526\(97\)00568-1](https://doi.org/10.1016/S0921-4526(97)00568-1).