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CURRICULUM VITAE

Bianca Haberl

ACADEMIC QUALIFICATIONS:

Jul 2011	Ph.D. (physics) at the Australian National University (ANU), Canberra Australia; Thesis title: *"Structural Characterization of Amorphous Silicon"*
Sep 2006	Diplom/M.Sc. (physics) at the University of Augsburg, Germany
Feb 2002 - Feb 2003	Internship at the Australian National University, Canberra, Australia

PROFESSIONAL EXPERIENCE:

Jul 2011 – Apr 2014	Postdoctoral Researcher, Research School of Physics and Engineering, ANU, Canberra, Australia (including promotion to ANU Level B in 2013). This was a research position with some teaching responsibilities at undergraduate and graduate level.
Aug 2014 – present	Alvin M. Weinberg Fellow at Oak Ridge National Laboratory. This is a fully funded research appointment as an ORNL staff associate. The role includes activities as an independent researcher as well as significant support of ORNL's Neutron Science user program through coordination and outreach of the high pressure science program.

AFFILIATIONS:

May 2015 – present	Affiliate of the Department of Energy's EFree centered at the Carnegie Institution of Science, Washington DC.

AWARDS:

- ***Best Senior Poster Award*** at Joint AIRAPT/EHPRG 2015.
- ***Best Student Presentation*** at AMAS XI in 2011.
- ***MRS Graduate Student Silver Award*** at the MRS Spring Meeting in 2010.
- ***Best Oral Paper Award*** at the IUMRS-ICEM in 2008.
- ***Graduate Student Award*** at the Australian Nanoindentation Workshop in 2005.

PUBLICATION RECORD:

As a scientific author I have an ***H-index of 11*** (as per google scholar). I have published 2 peer-reviewed book chapters, 33 peer-reviewed journal articles (1st author on 10 and 2nd author on another 13), and 4 peer-reviewed conference contributions. ***A full list is appended.***

RESEARCH GRANTS AND FELLOWSHIPS:

I have been Participating/Chief Investigator on 4 research projects funded by the Australian Research Council to ***~A$ 1.5M*** and on 2 ANU Major Equipment Grants to ***~A$ 430k***. I have also been Principal Investigator on an ORNL LDRD for ***U$ 116k*** and have received 3 Travel Fellowships to a total of ***A$ 18k*** amongst further competitive travel funding obtain. ***A full list is appended.***

CONFERENCE PRESENTATIONS:

I have personally presented:

- 5 invited oral presentations at the HPSTAR-SSRF Workshop 2013, the HPCAT-APS Workshop 2014, the International Conference on Exotic Forms of Silicon 2015, the American Conference on Neutron Scattering 2016 and the 66th Annual Meeting of the American Crystallographic Association 2016.
- International conferences: 6 oral presentations at ***dedicated high-pressure meetings*** (HPSP 2012 & 2014, AIRAPT 2013, EHPRG 2011, 2012 & 2016); 9 oral presentations at the ***highest impact materials science conferences*** (Spring MRS 2013, 2010 & 2008, Fall MRS 2012, Fall E-MRS 2011 & 2009, IUMRS 2008); 1 oral presentation at a ***dedicated indentation meeting*** (IIW5); 4 posters (Spring E-MRS 2003, MC2009, 2x AIRAPT/EHPRG 2015).
- Domestic conferences: 11 oral presentations at Australian conferences.
- 11 invited seminars at European and Australian universities and US research institutions including a presentation as “User Talk” for the NNSA Review of HPCAT (APS, ANL).

TEACHING EXPERIENCE:

- Significant experience in one-on-one tutoring and teaching of Honours, MPhil and PhD students. In fact, I am currently advisor for 3 PhD students at the ANU.
- Lecturing in ANU Advanced Physics 2 in 2011 and 2012 with innovative and experimental teaching methods to improve understanding and retention (real-time gathering platforms, e.g. piazza, interactive class experiments and discussion etc.).

OUTREACH ACTIVITIES:

- Chair of the High Pressure Sample Environment Steering Committee at NScD since 2016.
- Key organizer of an EFree meeting at ORNL in Dec 2015.
- Initiator and co-organizer of ORNL High Pressure Interest Group Seminar Series since 2015.
- Key organizing Committee member of the joint ARNAM/ARCNN 2010 workshop.
- Responsible organizer of the poster sessions at the ARNAM Workshop 2009.
- Conference proceedings and session assistant at IUMRS-ICEM 2008.
- Conference assistant for the Australian Nanoindentation Workshop 2007 and 2009.

RESEARCH INTERESTS:

High pressure synthesis of functional exotic materials from Group 14 elements (C, Si, Ge)

- My key interest here lies in the ***nature and formation of functional metastable phases***. These phases are poorly characterized and their synthesis pathways are not well understood. Thus, revolutionary new structures with higher mechanical strength, unique electronic and photovoltaic properties for energy-related applications are still being identified or made for the first time.
- I investigate this experimentally using ***three methods for pressure application,*** namely nanoindentation, diamond anvil cells and laser-induced “microexplosions”.
- The ***resulting material is characterized ex situ and in situ***. The *ex situ* characterization is performed by neutron scattering as well as focused ion-beam processing, transmission electron microscopy and Raman spectroscopy, while the *in situ* characterization by neutron scattering but also optical techniques and X-ray synchrotron diffraction.

- I ***collaborate extensively with theoreticians*** on the simulations of the electronic properties for future applications and on novel simulations of transition pathways.

Correlation of high pressure phase behavior with properties of amorphous semiconductors

- The aim of this work is to unravel the ***correlation of structure and high pressure phase behavior of amorphous covalent materials***. Different structural order, hydrogen content and microstructural properties govern the highly varied phase behaviour, but this is poorly understood and hence the potential of amorphous precursors is not exploited yet at all.
- The properties of such amorphous films are determined through detailed ***characterization of impurity content, nanostructure and structural order*** using Raman spectroscopy, specialist electron microscopy techniques and secondary ion mass spectrometry.
- I also collaborate on ***ab initio modelling*** of the amorphous structure.
- The correlated high pressure behavior is characterized through ***in situ X-ray and neutron diffraction***. The latter is particular important for hydrogen-rich films.

AREAS OF EXPERTISE:

- Comprehensive expert knowledge in the development of and use of ***large volume anvil cells for neutron scattering techniques***. This includes unique new diamond anvil cells used for *in situ* characterization under pressure, as well as new developments on Paris-Edinburgh designs, used for high pressure synthesis.
- Excellent hands-on and analytical understanding on the use of neutron diffraction and spectroscopy for the structural characterization of amorphous materials.
- Expert in ***in situ high pressure experiments*** using diamond anvil cells employing synchrotron X-ray radiation, particularly in understanding the effect the exact pressure conditions (shear, temperature, unloading rate) may have on phase formation.
- Comprehensive expert knowledge in ***point loading (nanoindentation)*** for the formation of new metastable phases and for sophisticated mechanical testing.
- Extensive experience with Raman spectroscopy for the determination of various crystalline phases and for the ***structure analysis*** of amorphous materials at ambient.
- Considerable hands-on and analytical know-how of ***transmission electron microscopy*** (fully independent use of conventional transmission electron microscope for dark-field imaging and ***crystallographic diffraction pattern analysis***; in-depth experience with fluctuation electron microscopy, diffraction for radial distribution functions and analysis for ***detailed structure determination***; experience with electron-energy loss spectroscopy).
- Substantial proficiency in sample preparation for transmission electron microscopy using ***focused ion-beam systems*** or dimpling/wet-etching for planview samples.
- Excellent understanding of ***laser-induced "microexplosions"*** and characterization of resulting phases.

KEY ONGOING SCIENTIFIC COLLABORATIONS:

High pressure synthesis of functional phases

- Experimental *in situ* synchrotron diamond anvil cell studies on metastable phase formation in Si and Ge in collaboration with Dr. Malcolm Guthrie from the ***European Spallation Source, Sweden***, Dr. Guoyin Shen, director of the ***High Pressure Collaborative Access Team***, ***Geophysical***

Laboratory, APS, Argonne National Laboratory, USA and Drs. Stas Sinogeikin and Jesse Smith from the same institution

- High pressure synthesis of novel functional carbon nanophases from disordered carbon precusros with Prof. Dougal McCulloch from the ***Royal Melbourne Institute of Technology, Australia,*** Prof. David McKenzie from the ***University of Sydney***, ***Australia*** as well as A./Prof. Jodie Bradby from my previous group at the ***Australian National University, Australia*** as well as Dr. Reinhard Boehler from ***EFree, Geophysical Laboratory, Carnegie Institution of Washington, USA.***
- The Raman aspect is often analysed in collaboration with Dr. Brett Johnson and A./Prof. Jeff McCallum from the ***University of Melbourne, Australia*****.**
- Experimental *in situ* neutron diffraction on hydrogen-rich amorphous Group 14 (C, Si, Ge) materials in collaboration with Jamie Molaison from ***SNAP, Spallation Neutron Source, Oak Ridge National Laboratory, USA***.
- Theoretical work on metastable phases A/Prof. Andres Mujica from the ***Universidad de La Laguna, Spain.*** Additional random structure search is conducted with Dr. Chris Pickard, **University College London, UK**, Prof. Richard Needs, ***University of Cambridge, UK.***

Structural characterization of amorphous semiconductors

- Characterization of novel amorphous materials synthesized through high pressure using neutron scattering at the ***Spallation Neutron Source, Oak Ridge National Laboratory, USA***. This is done in collaboration with Dr. Timmy Ramirez-Cuesta and Dr. Luke Daemen (VISION) as well as Dr. Matthew Tucker and Dr. Joerg Neuefeind (NOMAD).
- A variety of transmission electron microscopy techniques is employed all in collaboration with Dr. Amelia Liu from ***Monash University, Australia.*** Additional collaborations have been formed for specific characterization techniques: (i) Electron diffraction for quantitative radial distribution measurements with Dr. Tim Peterson from ***Monash University, Australia***; (ii) Fluctuation electron microscopy with Dr. Nestor Zaluzec, ***Argonne National Laboratory, USA***; (iii) Electron energy loss spectroscopy with Dr. Raul Arenal, ***University of Zaragoza, Spain***.
- *Ab initio* modelling is conducted with Dr. Eero Holmstroem, ***Aalto University, Finland*****,** and Prof. Kai Nordlund and his group, ***University of Helsinki, Finland***.

Development of neutron high pressure techniques

- Large volume anvil cells for in situ neutron diffraction as well as high pressure synthesis are developed in collaboration with Dr. Reinhard Boehler from ***EFree, Geophysical Laboratory, Carnegie Institution of Washington, USA*** and Jamie Molaison from ***SNAP, Spallation Neutron Source, Oak Ridge National Laboratory, USA.*** Diamond anvil cells for in situ neutron spectroscopy are being developed with additional collaboration with Dr. Luke Daemen from ***VISION, Spallation Neutron Source, Oak Ridge National Laboratory, USA.***

Laser induced subsurface modifications

- Prof. Andrei Rode and his group from the ***Laser Physics Centre, ANU, Australia*** on phase transitions in silicon and diamond through femtosecond laser-induced "microexplosions". The synchrotron X-ray aspect of the analysis is performed in collaboration with Dr. Wenge Yang, ***High Pressure Collaborative Access Team***, ***Geophysical Laboratory, APS, Argonne National Laboratory, USA.***

FULL LIST OF RESEARCH GRANTS, TRAVEL FELLOWSHIPS AND OTHER FUNDING:

- Participating Investigator on an Australian Research Council Discovery Project for *"Using extreme conditions to synthesise new materials"* for ***A$ 396,000*** commencing in 2017.
- Participating Investigator on an Australian Research Council Discovery Project for *"Non-equilibrium material phases"* for ***A$ 571,500*** commencing in 2017.
- Recipient of an RMIT Foundation International Research Exchange Fellowship for *"Light and tough: using extreme conditions to synthesise new materials based on boron, carbon and nitrogen"* for ***A$ 10,000*** in 2016.
- Principal Investigator on an ORNL LDRD (Named Fellow Scheme) for the *"Synthesis of Novel Semiconductors through High Pressure Indentation"* for ***U$ 116,343*** in 2015.
- Chief Investigator on an Australian Research Council Discovery Project for the *"Synthesis of novel phases from group IV elements under extreme pressure"* for ***A$ 290,000*** in 2013.
- Chief Investigator on an Australian Research Council Linkage Project for *"Exploiting deep sub-surface temperature-induced phase-transformations for an improved approach to semiconductor laser-dicing"* for ***A$ 180,000*** in 2012.
- Participating Investigator on two ANU Major Equipment Grant for *"A new facility for high-pressure materials research"* for ***A$ 79,000*** in 2012 and for *"A unique high-load nanoindentation facility"* for ***A$ 355,000*** in 2011.
- Participating Investigator on two successful applications for the International Synchrotron Access Program of the Australian Synchrotron for ***~A$ 13,000*** total in Mar 2013 and Jan 2012.
- Recipient of 2 ARC Student Fellowships for overseas research at the University of Illinois, USA for ***A$ 3,000*** in 2009 (ARCNN) and at the University of Oxford, UK for ***A$ 5,000*** in 2008 (ARNAM).
- Recipient of 4 further travel grants/bursaries for the attendance of Australian domestic conferences with ***A$ 500 each*** for ACMM-21 2010 and ACMM-20 & IUMAS-IV 2008 from the Australian Microscopy & Microanalysis Society as well as ***A$ 500*** toward NanoE3 2008 and ***A$ 700*** toward ARCNN Postgraduate/ECR Workshop 2008 from the Australian Research Council Nanotechnology Network.
- Recipient of an ANU PhD scholarship and Tuition Fee Exemption Sponsorship from Dec 2006 to Dec 2007 as well as an ANU Miscellaneous Scholarship from 2007-2010 to a total of ***~A$ 150,000.***

FULL LIST OF PUBLICATIONS

(Can be verified on Web of Science through my ResearcherID: F-9058-2011)

1. T.B. Shiell, D.G. McCulloch, J.E. Bradby, B. Haberl, R. Boehler, D.R. McKenzie, "Nanocrystalline hexagonal diamond formed from glassy carbon", **Scientific Reports 6,** 37232 (2016).
2. S. Wong, B. Haberl, J.S. Williams, J.E. Bradby, "Plastic Transformation Dependence on Initial Plastic Deformation Mode in Si via Nanoindentation", **Experimental Mechanics** (2016), doi:10.1007/s11340-016-0213-7.
3. B. Haberl, T.A. Strobel, J.E. Bradby, *"Pathways to exotic metastable silicon allotropes",* **Applied Physics Review 3**, 040808 (2016).
4. E. Holmström, B. Haberl, O. H. Pakarinen, K. Nordlund, F. Djurabekova, R. Arenal, J. S. Williams, J. E. Bradby, T. C. Petersen, A. C. Y. Liu, *"Dependence of short and intermediate-range order on preparation in experimental and modeled pure a-Si",* **Journal of Non-Crystalline Solids 438**, 26 (2016).

5. M. Kracica, C. Kocer, D. Lau, J.G. Partridge, B. Haberl, J.E. Bradby, D.R. McKenzie, D.G. McCulloch, *"The Mechanical Properties of Energetically Deposited Non-Crystalline Carbon Thin Films"*, **Carbon 98,** 391 (2016).
6. S. Wong, B. Haberl, J.S. Williams, J.E. Bradby, *"The influence of hold time on the onset of plastic deformation in silicon"*, **Journal of Applied Physics 118**, 245904 (2015).
7. Y.B Gerbig, C.A. Michaels, J.E. Bradby, B. Haberl, R.F. Cook, *"In situ spectroscopic study of the plastic deformation of amorphous silicon under non-hydrostatic conditions induced by indentation"*, **Physical Review B 92**, 214110 (2015).
8. S. Wong, B. Haberl, J.E. Bradby, J.S. Williams, *"Phase transformation as the single-mode mechanical deformation of silicon"*, **Applied Physics Letters 106**, 252103 (2015).
9. L. Rapp, B. Haberl, C. J. Pickard, J. E. Bradby, E. G. Gamaly, J. S. Williams, and A. V. Rode, *"Experimental evidence of new tetragonal polymorphs of silicon formed through ultrafast-laser-induced confined microexplosion"*, **Nature Communications 6**, 7555 (2015).
10. P.C. Verburg, L.A. Smillie, G.R.B.E. Römer, B. Haberl, J.E. Bradby, J.S. Williams, A.J. Huis in't Veld, *"Crystal structure of laser-induced subsurface modifications in Si"*, **Applied Physics A**, 9238, (2015).
11. M. S. R. N. Kiran, T. T. Tran, L. Smillie, B. Haberl, D. Subianto, J. S. Williams and J. E. Bradby, *Temperature-dependent mechanical deformation of silicon at the nanoscale: Phase transformation versus defect propagation"* **Journal of Applied Physics 117,** 205901 (2015).
12. M.S.R.N. Kiran, B. Haberl, J.E. Bradby, J.S. Williams, *"Nanoindentation of silicon and germanium"* in *"Defects in Semiconductors",* **Semiconductors and Semimetal Vol. 91**, 165-203 (Elsevier, 2015).
13. B. Haberl, M. Guthrie, S.V. Sinogeikin, G. Shen, J.S. Williams, and J.E. Bradby, *"Thermal evolution of the metastable r8 and bc8 polymorphs of silicon",* **High Pressure Research 35**, 99 (2015).
14. B. Haberl, M. Guthrie, B.D. Malone, J.S. Smith, S.V. Sinogeikin, M.L. Cohen, J.S. Williams, G. Shen, and J.E. Bradby, *"Controlled formation of metastable germanium"*, **Physical Review B 89**, 144111 (2014).
15. S. Deshmukh, B. Haberl, S. Ruffell, P. Munroe, J.S. Williams, and J.E. Bradby, *"Phase transformation pathways in amorphous germanium under indentation pressure"*, **Journal of Applied Physics 115,** 153502 (2014).
16. L. Rapp. B. Haberl, J.E. Bradby, E.G. Gamaly, J.S. Williams, and A.V. Rode, *"Ultrafast Laser Induced Confined Microexplosion: A New Route to Form Super-Dense Material Phases"* in *"Fundamentals of Laser-Assisted Micro- and Nanotechnologies"*, **Springer Series in Materials Science 195**, pp 3-26 (2014).
17. M.S.R.N. Kiran, B. Haberl, J.S. Williams, and J.E. Bradby, *"Temperature dependent deformation mechanisms in pure amorphous silicon",* **Journal of Applied Physics 115**, 113511 (2014).
18. L. Rapp, B. Haberl, J. E. Bradby, E. G. Gamaly, J. S. Williams, and A. V. Rode, *"Confined microexplosion induced by ultra-short laser pulse at SiO2/Si interface"*, **Invited Paper** in **Applied Physics A 114,** 33 (2014).
19. L. Rapp. B. Haberl, J.E. Bradby, E.G. Gamaly, J.S. Williams, S. Juodkasis, and A.V. Rode, *"Selective localised modifications of silicon crystal by ultrafast laser induced micro-explosion",* in "LAMOM XVIII", **Book Series: Proceedings of SPIE Vol. 8607** (The International Society for Optical Engineering, Bellingham, 2013) p. 86070H.

20. L. Rapp. B. Haberl, J.E. Bradby, E.G. Gamaly, J.S. Williams, S. Juodkasis, and A.V. Rode, *"Evidence of New High-Pressure Silicon Phases in Fs-Laser Induced Confined Microexplosion",* in "CLEO 2013", **OSA Technical Digest** (online) (Optical Society of America, 2013), paper CM2M.3.

21. B. Haberl, M. Guthrie, D.J. Sprouster, J.S. Williams and J.E. Bradby, "*New insight into pressure-induced phase transitions of amorphous silicon: The role of impurities"*, **Journal of Applied Crystallography 46**, 758 (2013).

22. J.S. Williams, B. Haberl, S. Deshmukh, B.C. Johnson, B.D. Malone, M.L. Cohen, and J.E. Bradby, *"Hexagonal germanium formed via a pressure-induced phase transformation of amorphous germanium under controlled nanoindentation",* **Physica Status Solid - Rapid Research Letters 7**, 758-768 (2013).

23. L.B. Bayu Aji, S. Ruffell, B. Haberl, J.E. Bradby, and J.S. Williams, "*Correlation of indentation-induced phase transformations with the degree of relaxation of ion-implanted amorphous silicon"*, **Journal of Materials Research 28,** 1056 (2013).

24. B.C. Johnson, B. Haberl, S. Deshmukh, B.D. Malone, M.L. Cohen, J.C. McCallum, J.S. Williams, and J.E. Bradby, "*Evidence for the R8 phase of germanium"*, **Physical Review Letters 110**, 085502 (2013).

25. B. Haberl, L.B. Bayu Aji, J.S. Williams and J.E. Bradby, "*The indentation hardness of silicon measured by instrumented indentation: What does it mean?",* **Journal of Materials Research 27**, 3066 (2012).

26. K.B. Borisenko, B. Haberl, A.C.Y. Liu, Y. Chen, G. Li, J.S. Williams, J.E. Bradby, D.J.H. Cockayne, M.M.J. Treacy, *"Medium-range order in amorphous silicon investigated by constrained structural relaxation of two-body and four-body electron diffraction data"*, **Acta Materialia 60,** 359 (2012).

27. B.C. Johnson, N. Stavrias, B. Haberl, L.B. Bayu Aji, J.E. Bradby, J.C. McCallum, J.S. Williams, *"Raman study on the phase transformations of the metastable phases of Si induced by indentation"*, in "2012 COMMAD", **Book Series: Conference on Optoelectronic and Microelectronic Materials and Devices**, (Institute of Electrical and Electronics Engineers, New York, 2012) p. 89.

28. S.K. Bhuyan, J.E. Bradby, S. Ruffell, B. Haberl, C. Saint, J S. Williams and P. Munroe, "*Phase stability of silicon during indentation at elevated temperature: evidence for a direct transformation from metallic Si-II to diamond cubic Si-I",* **MRS Communications 2**, 9 (2012).

29. B. Haberl, S.N. Bogle, T. Li, I. McKerracher, S. Ruffell, P. Munroe, J.S. Williams, J.R. Abelson, and J.E. Bradby, *"Unexpected short- and medium-range atomic structure of sputtered amorphous silicon upon thermal annealing"*, **Journal of Applied Physics 110**, 096104 (2011).

30. C. Sarra-Bournet, B. Haberl, C. Charles and R. Boswell, *"Characterization of nanocrystalline nitrogen-containing titanium oxide obtained by N2/O2/Ar low-field helicon plasma sputtering*", **Journal of Physics D: Applied Physics 44,** 455202 (2011).

---------- PhD graduation ----------

31. B.C. Johnson, B. Haberl, J.E. Bradby, J.C. McCallum, and J.S. Williams, *"Temperature dependence of Raman scattering from the high-pressure phases of Si induced by indentation"*, **Physical Review B 83,** 235205 (2011).

32. N. Fujisawa, S. Ruffell, J.E. Bradby, J. S. Williams, B. Haberl, and O.L. Warren, *"Understanding pressure-induced phase-transformation behaviour in silicon through in situ electrical probing under cyclic loading conditions"*, **Journal of Applied Physics 105**, 1010611 (2009).

33. B. Haberl, A.C.Y. Liu, J.E. Bradby, S. Ruffell, J.S. Williams, and P. Munroe, *"Structural characterization of pressure-induced amorphous silicon"*, **Physical Review B 79** (2009) 155209.

34. S. Ruffell, B. Haberl, S. Koenig, J.E. Bradby, and J.S. Williams, *"Annealing of nanoindentation-induced high pressure crystalline phases created in crystalline and amorphous silicon"*, **Journal of Applied Physics 105**, 093513 (2009).
35. S. Ruffell, J. Vedi, J.E. Bradby, J.S. Williams, and B. Haberl, *"Effect of oxygen concentration on nanoindentation-induced phase transformations in ion-implanted amorphous silicon"*, **Journal of Applied Physics 105**, 083520 (2009).
36. B. Haberl, J.E. Bradby, S. Ruffell, J.S. Williams, and P. Munroe, *"Phase transformations induced by spherical indentation in ion-implanted amorphous silicon"*, **Journal of Applied Physics 100,** 013520 (2006).
37. B. Haberl, J.E. Bradby, M.V. Swain, J.S. Williams, and P. Munroe, *"Response to 'Comment on 'Phase transformations induced in relaxed amorphous silicon by indentation at room temperature" "*, **Applied Physics Letters 87**, 016102 (2005).
38. J.S. Williams, B. Haberl, and J.E. Bradby, "*Nanoindentation of ion implanted and deposited amorphous silicon",* in "Fundamentals of Nanoindentation and Nanotribology III", **MRS Symposia Proceedings Vol. 841** (Materials Research Society, Pittsburgh, 2005), p. R10.3.1/T6.3.1
39. B. Haberl, J E. Bradby, M.V. Swain, J.S. Williams, and P. Munroe, *"Phase transformations induced in relaxed amorphous silicon by indentation at room temperature",* **Applied Physics Letters 85,** 5559 (2004).

Manuscripts currently under review:

40. R. Boehler, J.J. Molaison, B. Haberl, *"Novel Diamond Cells for Neutron Diffraction using multi-carat CVD Anvils",* submitted to **Review of Scientific Instruments** (2017).