

GUINTHER KELLERMANN, PH.D.
CURRICULUM VITAE

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ADDRESS

Laboratório Nacional de Luz Síncrotron
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EDUCATION

State University of Campinas, Campinas, SP, Brazil

Ph.D. Physics (2003)

Thesis: *Semiconductor and metallic nanoclusters in glasses*

University of São Paulo, São Paulo, SP, Brazil

Master in Sciences (1996)

Solid State Physics

Dissertation: *Development, characterization and application of instrumentation for determination of SAXS intensity in absolute units.*

Federal University of Santa Catarina, Florianópolis, SC, Brazil

Undergraduate in Physics (1992).

EMPLOYMENT

Brazilian Synchrotron Light Laboratory (LNLS)

Division of Synchrotron Light

Beamline Physicist (Since 1997)

RESEARCH INTEREST AND SKILLS

- Nanostructured materials
- Studies by small-angle X-ray scattering and X-ray diffraction techniques
- Preparation of glass-nanoclusters composite materials
- Characterization of the processes of nucleation and growth of nanoclusters embedded in glasses
- X-ray instrumentation for synchrotron radiation

ARTICLES PUBLISHED

1- H. S. ROCHA, G. R. PEREIRA, M. J. ANJOS, P. FARIA, G. KELLERMANN, C. A. PÉREZ, G. TIRAO, I. MAZZARO, C. GILES AND R. T. LOPES. Diffraction enhanced imaging and x-ray fluorescence microtomography for analyzing biological samples. *X-ray Spectrom.* (in press). Published online in Wiley InterScience (www.interscience.wiley.com).

2- JAIR C.C. FREITAS, EVARISTO NUNES, EDSON C. PASSAMANI, CARLOS LARICA, GUINTHER KELLERMANN, ALDO F. CRAIEVICH. Structure and melting of Pb nanocrystals produced by mechanical alloying of Fe/Pb powder mixtures. *Acta Materialia* 54 (2006) 5095–5102.

3. HÖNNICKE, M. G., KELLERMANN, G., ROCHA, H. S., GILES, C., TIRAO, G., MAZZARO, I., LOPES, R. T. and CUSATIS, C. (2005). Enhanced contrast radiography with channel-cut crystals at the LNLS. *Review of scientific Instruments* 76, 093703.
4. CAVALCANTI, LP., TORRIANI, IL., PLIVELIC, TS., OLIVEIRA, CLP., KELLERMANN, G. and NEUENSCHWANDER, R. (2004). Two new sealed sample cells for small angle x-ray scattering from macromolecules in solution and complex fluids using synchrotron radiation. *Review of Scientific Instruments*, (75) 11, 4541.
5. KELLERMANN, G. and CRAIEVICH, A. F. (2004). Isothermal aggregation of Ag atoms in sodium borate glass. *Physical Review B - Condensed Matter.*, 70, 054106.
6. KELLERMANN, G. and CRAIEVICH, A. F. (2003). Combined SAXS, WAXS and TEM studies of bismuth aggregation in a bismuth-doped soda-borate glass. *Acta Microscópica*, 12, 319.
7. KELLERMANN, G. and CRAIEVICH, A. F. (2003). Isothermal aggregation of Bi atoms embedded in a soda borate glass: Coarsening of liquid nanodroplets and atomic diffusion. *Physical Review B - Condensed Matter.*, 67, 85405.
8. CRAIEVICH, A. F., KELLERMANN, G., Barbosa LC and Alves O.L. (2003). Structure characterization and mechanism of growth of PbTe nanocrystals embedded in a silicate glass. *Physical Review Letters*, 89, 235503.
9. KELLERMANN, G. , CRAIEVICH, A. F., NEUENSCHWANDER R. and PLIVELIC, T. S. (2002). Setup for in situ SAXS and WAXS studies of the formation and growth of Bi nanodroplets and the melting of Bi nanocrystals using synchrotron radiation. *Nuclear Instruments And Methods In Physics Research B - Beam Interactions With Materials And Atoms*,199, 112–116.
10. KELLERMANN, G. and CRAIEVICH, A. F. (2002). Structure and melting of Bi nanocrystals embedded in a B₂O₃-Na₂O glass. *Physical Review B - Condensed Matter.*, 65, 134204.
11. KELLERMANN, G., NEUENSCHWANDER ,R., FEUGEAS, J. N. and CRAIEVICH, A. F. (2001). Chamber for in situ WAXS, SAXS and GISAXS studies: application to plasma induced transformations in steels. *Nuclear Instruments And Methods In Physics Research A*, 467, 1097–1100.
12. KELLERMANN, G., CRAIEVICH, A. F., ALVES O. L. and BARBOSA L. C. (2001). Nucleation and growth of CdTe_{1-x}S_x nanocrystals embedded in a borosilicate glass. Effects of sulfur content and two-step thermal annealing. *Journal of Non-Crystalline Solids*, 293, 517-526.
13. SHINOHARA, A., SEKIYA, E., TORIKAI, D., OGATA, D., SUZUKI, C., KELLERMANN, G., and TORRIANI, I. L. (1999). Effect of heat treatment on the high-purity silica glass prepared from amorphous and crystalline powders by small angle X-ray scattering. *Japanese Journal of Applied Physics*, 38, 136-139.
14. FEUGEAS, J. N., HERMIDA, J. D., GOMES, B., KELLERMANN, G. and CRAIEVICH, A. F. (1999). In Situ Synchrotron Radiation Diffraction Study of Low Carbon Steel During Ion Nitriding. *Journal of Physics - D*, 32, 2228-2235.
15. KELLERMANN, G. , VICENTIM, F., TAMURA, E., ROCHA, M., TOLENTINO, H., BARBOSA, A., CRAIEVICH, A. F. and TORRIANI, I. L. (1997). The Small-Angle X-ray

Scattering Beamline of the Brazilian Synchrotron Light Laboratory. *Journal of Applied Crystallography*, 30, 880-883.

SCHOOLS

2nd Summer School of Brazilian Synchrotron Light Laboratory, Campinas, Brazil.
January-February 1993.

3rd School on use of Synchrotron Radiation in Science and Technology: "John Funggle Memorial".
International Center of Theoretical Physics, Trieste, Italy.
30 October – 1 December 1995.

Introduction to the small-angle scattering technique.
Brookhaven National Laboratory BNL, Upton, New York, United States.
14 May 1999.

PRESENTATIONS AT INTERNATIONAL CONFERENCES

Characterization of the LNLS SAXS workstation. Kellermann, G., Vicentin, F., Tamura, E., Tolentino, H., Cesar, J., Carneiro, A., Torriani, I. and Craievich, A. F., presented in Xth International Conference on Small-Angle Scattering, National Synchrotron Light Laboratory, Campinas, Brazil, 21-25 July 1996.

Study of formation and growth of PbTe nanocrystals embedded in a silicate glass matrix. Kellermann, G. and Craievich, A. F., presented in XIth International Conference on Small-Angle Scattering, Brookhaven National Laboratory, Upton, United States, 17-20 May 1999.

WAXS-SAXS camera for in-situ transmission experiments. Torriani, I. L., Oliveira, C. L. P., dos Santos, D. R., Neuenschwander, R., Kellermann, G. and Plivelic, T. S., presented in XIth International Conference on Small-Angle Scattering. Brookhaven National Laboratory, Upton, United States, 17-20 May 1999.

Melting and freezing of Bi nanoclusters embedded in sodium borate glass. Kellermann G. and A. F. Craievich. XIII International Conference on Small-angle Scattering, Kyoto, Japan, 9-13 July 2006.