

## **PUBLICATIONS**

1. An acoustic non-linearity study. Beam formation and beam patterns in liquid medium  
**C. Pantea**, D. Sinha  
*in preparation*, 2008
2. Collimated acoustic non-linear beam propagation in pipes. Defects and objects imaging  
**C. Pantea**, D. Sinha  
*in preparation*, 2008
3. Full tensor of elastic moduli for Osmium from 300 K to 5 K  
**C. Pantea**, I. Mihut, H. Ledbetter, J.B. Betts, Y. Zhao, L.L. Daemen, H. Cynn, A. Migliori  
*in preparation*, 2008.
4. Bulk modulus of osmium, 4-300 K  
**C. Pantea**, I. Mihut, H. Ledbetter, J.B. Betts, Y. Zhao, L.L. Daemen, H. Cynn, A. Migliori  
**Acta Mater.**, *accepted 2008*.
5. Diamond's elastic stiffnesses from 322 K to 10 K  
A. Migliori, H. Ledbetter, R.G. Leisure, **C. Pantea**, J.B. Betts  
**J. Appl. Phys.**, vol. 104, no. 5, (2008), pp. 053512-1-4
6. Structure of diamond-silicon carbide nanocomposites as a function of sintering temperature at 8 GPa  
L. Balogh, S. Nauyoks, T. W. Zerda, **C. Pantea**, S. Stelmakh, B. Palosz, T. Ungar,  
**Mat. Sci. Eng. A**, vol. 487, no. 1-2, (2008), pp. 180-8.
7. Direct measurement of spin correlation using magnetostriction  
V.S. Zapf, V.F. Correa, P. Sengupta, C.D. Batista, M. Tsukamoto, N. Kawashima, P. Egan, **C. Pantea**, A. Migliori, J.B. Betts, M. Jaime, A. Paduan-Filho  
**Phys. Rev. B**, vol. 77, no. 2, (2008), pp. 020404(R)-1-4
8. Osmium's Debye temperature  
**C. Pantea**, I. Stroe, H. Ledbetter, J.B. Betts, Y. Zhao, L.L. Daemen, H. Cynn, A. Migliori  
**J. Phys. Chem. Solids**, vol. 69, no. 1, (2008), pp. 211-213.
9. High-Temperature Phase Transitions in CsH<sub>2</sub>PO<sub>4</sub> under Ambient and High-Pressure Conditions: A Synchrotron X-ray Diffraction Study  
C.E. Botez, J.D. Hermosillo, J. Zhang, J. Qian, Y. Zhao, J. Majzlan, R.R. Chianelli, **C. Pantea**  
**J. Chem. Phys.**, vol. 127, (2007), pp. 194701-1-6
10. Alpha-plutonium's polycrystalline elastic constants over its full temperature range  
A. Migliori, **C. Pantea**, H. Ledbetter, J. B. Betts , J. E. Mitchell, M. Ramos, F. Freibert, D. Dooley, S. Harrington, C. Mielke  
**J. Acoust. Soc. Am.**, vol. 122, no. 4, (2007), pp. 1994-2001.
11. Temperature and time-dependence of the elastic moduli of Pu and Pu-Ga alloys  
A. Migliori, I. Mihut, J.B. Betts, M. Ramos, C. Mielke, **C. Pantea**, D. Miller  
**J. Alloy. Compd.**, vol. 444-445, (2007), pp. 133-137.
12. Investigation of relaxation of nanodiamond surface in real and reciprocal spaces  
B. Palosz, **C. Pantea**, E. Grzanka, S. Stelmakh, Th. Proffen, T.W. Zerda, W. Palosz  
**Diam. Relat. Mater.**, vol. 15, no. 11-12, (2006), pp. 1813.
13. Microstructure of diamond-SiC nanocomposites determined by X-ray line profile analysis

- J. Gubicza, T. Ungar, Y. Wang, G.A. Voronin, **C. Pantea**, T.W. Zerda  
**Diam. Relat. Mater.**, vol. 15, no. 9, (2006), pp. 1452.
14. Pressure-induced elastic softening of monocrystalline zirconium tungstate at 300 K  
**C. Pantea**, A. Migliori, P. B. Littlewood, Y. Zhao, H. Ledbetter, J. C. Lashley, T. Kimura, J. Van Duijn, and G. R. Kowach  
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A. Migliori, A.J. Hurd, Y. Zhao and **C. Pantea**  
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16. Nano-Diamond compressibility at pressures up to 85 GPa  
**C. Pantea**, J. Zhang, J. Qian, Y. Zhao, A. Migliori, E. Grzanka, B. Palosz, Y. Wang, T.W. Zerda, H. Liu, Y. Ding, P.W. Stephens and C.E. Botez  
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17. Evidence for a Structural Transition to a Superprototypic  $\text{CsH}_2\text{PO}_4$  Phase Under High Pressure  
C. E. Botez, R. R. Chianelli, J. Zhang, J. Qian, Y. Zhao, J. Majzlan, **C. Pantea**  
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18. Digital ultrasonic pulse-echo overlap system and algorithm for unambiguous determination of pulse transit time  
**C. Pantea**, D.G. Rickel, A. Migliori, J. Zhang, Y. Zhao, S. El-Khatib, R.G. Leisure, B. Li  
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19. Kinetics of the reaction between diamond and silicon at high pressure and temperature  
**C. Pantea**, G.A. Voronin, T.W. Zerda  
**J. Appl. Phys.**, vol. 98, no. 7, (2005), art. no. 073512.
20. Development of high P-T neutron diffraction at LANSCE  
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21. Kinetics of SiC formation during the high P-T reaction between diamond and silicon  
**C. Pantea**, G.A. Voronin, T.W. Zerda, J. Zhang, L. Wang, Y. Wang, T. Uchida, Y. Zhao  
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22. Experimental Constraints on the Phase Diagram of Zirconium Metal  
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23. Thermal equations of state of  $\alpha$ ,  $\beta$ , and  $\omega$  phases of zirconium  
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25. Microstructure of nanocrystalline diamond powders studied by powder diffractometry  
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27. Size and shape of crystallites and internal stresses in carbon blacks  
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28. Structural influence of erbium centers on silicon nanocrystal phase transitions  
 R.A. Senter, **C. Pantea**, Y. Wang, H. Liu, T.W. Zerda, J.L. Coffer  
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**C. Pantea**, J. Gubicza, T. Ungar, G.A. Voronin, N.H. Nam, T.W. Zerda  
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31. Powder Neutron Diffraction of Wustite (Fe0.93O) to 12 GPa using large moissanite anvils  
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34. In situ x-ray diffraction study of germanium at pressures up to 11GPa and temperatures up to 950K  
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**C. Pantea**, J. Qian, G.A. Voronin,T.W. Zerda  
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- J. Qian, **C. Pantea**, G. Voronin, T.W. Zerda  
**J. Appl. Phys.**, vol. 90, no. 3, (2001), pp. 1632.
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(Determinarea enzimatica a ureei din sange integral si ser sanguin de provenienta animala)  
I. Tarsiche, F. Kormos, **C. Pantea**  
**Rev Chim-Bucharest**, vol. 51, no. 1, (2000), pp. 8.
44. Redox sensors based on semiconductor film  
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F. Kormos, **C. Pantea**  
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45. Raman spectroscopic investigations of the  $x\text{CuO} \cdot (1-x)[3\text{B}_2\text{O}_3 \cdot \text{K}_2\text{O}]$  glasses  
D. Maniu, I. Ardelean, T. Iliescu, **C. Pantea**  
**J. Mater. Sci. Lett.**, vol. 16, (1997), pp. 19.

### PATENTS

- Device and Method for Generating a Beam of Acoustic Energy from a Borehole and Applications Thereof  
*in collaboration with Chevron*  
*submitted 2008*

### PRESENTATIONS

- Negative-thermal-expansion  $\text{ZrW}_2\text{O}_8$ . Elasticity and pressure.  
**C. Pantea**, A. Migliori, P. B. Littlewood, Y. Zhao, H. Ledbetter, J. C. Lashley, T. Kimura, J. Van Duijn, and G. R. Kowach  
APS March Meeting 2007, March 5-9, Denver, CO.
- Osmium's full elastic tensor between 5K and 300K  
**C. Pantea**  
152nd Meeting (4<sup>th</sup> joint meeting of the Acoustical Society of America and the Acoustical Society of Japan), Honolulu, Hawaii, 28 November-2 December 2006
- Nano-Diamond compressibility at pressures up to 85 GPa  
**C. Pantea**, J. Zhang, J. Qian, Y. Zhao, A. Migliori, E. Grzanka, B. Palosz, Y. Wang, T.W. Zerda, H. Liu, Y. Ding, P.W. Stephens and C.E. Botez  
NSTI Nanotech 2006, May 7-11, Boston, MA.
- Digital ultrasonic pulse-echo overlap system and algorithm for unambiguous determination of pulse transit time  
**C. Pantea**, D.G. Rickel, A. Migliori, J. Zhang, Y. Zhao, S. El-Khatib, R.G. Leisure, B. Li

APS March Meeting 2006, March 13-17, Baltimore, MD.

- Unusual compressibility in the negative-thermal-expansion material ZrW<sub>2</sub>O<sub>8</sub>

**C. Pantea**, A. Migliori, P. B. Littlewood, Y. Zhao, H. Ledbetter, T. Kimura, J. Van Duijn, G. R. Kowach

ICAM/I2CAM Annual Conference on Frontiers in Complex Adaptive Matter & Satellite Events

November 8-12, 2005, Bishop's Lodge, Santa Fe, NM

- Nano-Diamond compressibility at pressures up to 85 GPa

**C. Pantea**, J. Zhang, J. Qian, Y. Zhao, B. Palosz, T.W. Zerda

Stewardship Science Academic Alliances (SSAA) Program Symposium

March 29-31, 2004, Albuquerque, NM.

- Phase-coherent pulse-echo ultrasound in a SiC anvil pressure cell

**C. Pantea**, D.G. Rickel, R.G. Leisure, A. Migliori, Y. Zhao

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March 29-31, 2004, Albuquerque, NM.

- Diamond Composites and control of graphitization

**C. Pantea**, J. Qian, G.A. Voronin, T.W. Zerda, Y. Zhao

Industrial Materials For The Future (IMF), Annual Review Meeting

June 23-25, 2003, Golden, CO.

- Structure Study of Diamond-SiC Composites Obtained Under High Pressure-High Temperature Conditions

**C. Pantea**, G.A. Voronin, T.W. Zerda, J. Qian, Y. Zhao

APS March Meeting 2003, March 3-7, Austin, TX.

- Diamond-silicon reaction under high pressure - high temperature conditions

**C. Pantea**, G.A. Voronin, T. W. Zerda

MRCEDM Research Festival 2002, April 5, UTA, Arlington, TX.

- β-SiC formation on diamond crystals under high pressure-high temperature conditions

**C. Pantea**, G.A. Voronin, T. W. Zerda

TSAPS Fall Meeting 2001, October 4-6, TCU, Fort Worth, TX.

- X-ray diffraction study of diamond-graphite phase transition at high pressures and temperatures

**C. Pantea**, J. Qian, T. W. Zerda

TSAPS Fall Meeting 2000, October 27-29, Rice University, Houston, TX.