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**SELECTED INVITED TALKS AT CONFERENCES**

(of 113):

- Equilibrium Vortex Phases (I); Dynamic Vortex Phases (II)  
United States Summer School on Condensed Matter Physics, Boulder Colorado,  
July 10-15, 2000
- Superconducting Vortices: Lattice, Liquid, and Plastic Motion  
Plenary Session of the National Conference on Solid State Physics  
Madrid, Spain, February 5-8, 2001
- Vortices in Dense Self-Assembled Hole Arrays  
Third International Workshop on Magnetism and Superconductivity of Advanced  
Materials, Ladek Zdroj, Poland, July 14-19, 2002
- Vortices in Self-Assembled Dense Hole Arrays  
Kamerling Onnes Prize Plenary Lecture  
7<sup>th</sup> International Conference on the Materials and Mechanisms of Superconductivity-  
High Temperature Superconductors, Rio de Janeiro, Brazil, May 26, 2003
- Pinning the Vortex Liquid  
17<sup>th</sup> International Symposium on Superconductivity, Niigata, Japan, Nov 23-25, 2004
- Mesoscopic Superconductivity  
Conference on Single Molecule Magnets and Hybrid Magnetic Nanostructures  
International Center for Theoretical Physics, Trieste, Italy, June 27- July 1, 2005
- The Two Hydrogen Economies  
Keynote Lecture, Australian Academy of Sciences Annual Symposium, Canberra,  
Australia, May 5, 2006
- Vortex Confinement in Nanostructured Superconductors  
8<sup>th</sup> International Conference on the Materials and Mechanisms of Superconductivity-  
High Temperature Superconductors, Dresden, Germany, July 10-14, 2006
- Basic Research Needs for Superconductivity  
Plenary Lecture, Superconductivity Peer Review, Washington DC, July 24-27,  
2006
- Basic Research Needs for Materials under Extreme Environments, Basic Energy Sciences  
Advisory Committee, July 31-August 1 2007
- Transforming the Electricity Grid with Superconductivity  
Plenary Keynote Lecture, European Conference on Applied Superconductivity, Brussels,  
Belgium, September 16-20, 2007

Basic Research Needs for Energy Security, Briefing to Office of Science and Technology Policy, September 28, 2007

The Sustainable Energy Challenge  
American Physical Society Energy Workshop, Denver CO, March 4, 2008

The Sustainable Energy Challenge  
Plenary Lecture, National Synchrotron Light Source and Center for Functional Nanomaterials Users Meeting, Brookhaven National Laboratory, May 19-21, 2008

Strategic Development of Superconductivity for Electrical Energy in the US  
International Conference on Materials Science for Highly Efficient Use of Energy and Resources, National Institute for Materials Science, Tsukuba, Japan, July 14-18, 2008

Superconductivity as an Energy Carrier  
29<sup>th</sup> Riso International Symposium on Materials Science, Roskilde, Denmark, September 5-9, 2008

Our Sustainable Energy Future  
Red River Valley Research Corridor Milestones and Horizons, Fargo, SD, October 13, 2008

The Sustainable Energy Challenge  
Keynote Lecture, Loyola University Science Days, Loyola University, Chicago IL, October 14, 2008

Facing Our Energy Challenges  
Plenary Lecture, DOE Workshop on Solving Science and Energy Grand Challenges with Next Generation Photon Sources, Rockville, MD, October 27-29, 2008

Addressing the Global Energy Challenge: Energy Conversion Using Nanoscale Materials  
G.W. Crabtree  
American Association for the Advancement of Science Annual Meeting  
Chicago, IL, February 13, 2009

Basic Research for Solar Energy: Challenges and Opportunity  
G.W. Crabtree  
International Symposium on Innovative Solar Cells  
Research Center for Advanced Science and Technology, Tokyo Japan  
March 1-3 2009

The Sustainable Energy Challenge  
G.W. Crabtree  
Overview Lecture, American Physical Society Energy Research Workshop  
Pittsburgh, PA, March 15, 2009

Materials for Sustainable Energy  
G.W. Crabtree  
Plenary Evening Session on Energy and the Environment  
March Meeting of the American Physical Society, Pittsburgh PA March 16, 2009

**SELECTED PUBLICATIONS** of ~440 in print. Over 14,700 career citations, 40 papers with over 100 citations, 77 papers with over 50 citations, 36 citations/paper (average), h-index = 63.

An unusual phase transition to a second liquid vortex phase in the superconductor YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7</sub>

F. Bouquet, C. Marcenat, E. Steep, R. Calemczuk, W. K. Kwok, U. Welp, G. W. Crabtree, R. A. Fisher, N. E. Phillips, and A. Schilling  
Nature **411**, 448 (2001)

Two-Band Superconductivity in MgB<sub>2</sub>

M. Iavarone, G. Karapetrov, A. E. Koshelev, W. K. Kwok, G. W. Crabtree, D. G. Hinks, W. N. Kang, Eun-Mi Choi, Hyun Jung Kim, Hyeong-Jin Kim, and S. I. Lee  
Phys. Rev. Lett. **89**, 187002 (2002)

Magnesium Diboride: Better Late than Never

Paul C. Canfield and George W. Crabtree  
Phys. Today **56**(3), 34-40 (2003)

Superconducting transition and phase diagram of single-crystal MgB<sub>2</sub>

U. Welp, A. Rydh, G. Karapetrov, W. K. Kwok, G. W. Crabtree, Ch. Marcenat L. Paulius, T. Klein, J. Marcus, K. H. P. Kim, C. U. Jung, H.-S. Lee, B. Kang, and S.-I. Lee  
Phys. Rev. B **67**, 012505 (2003)

Experimental test of the self-organized criticality of vortices in superconductors

V. K. Vlasko-Vlasov, U. Welp, V. Metlushko, and G. W. Crabtree  
Phys. Rev. B **69**, 140504 (2004)

The Hydrogen Economy

G. W. Crabtree, M. S. Dresselhaus, M. V. Buchanan  
Physics Today **57**(12), 39 (2004)

Self-assembled monolayer-enhanced hydrogen sensing with ultrathin palladium films

Xu T, Zach MP, Xiao ZL, Rosenmann D, Welp U, Kwok WK, Crabtree GW  
Applied Physics Letters **86**, 203104 (2005)

Superconducting NbSe<sub>2</sub> nanowires and nanoribbons converted from NbSe<sub>3</sub> nanostructures

Hor YS, Welp U, Ito Y, Xiao ZL, Patel U, Mitchell JF, Kwok WK, Crabtree GW  
Applied Physics Letters **87**, 142506 (2005)

The loss of vortex line tension sets an upper limit to the irreversibility line in YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7</sub>

Figueras J, Puig T, Obradors X, Kwok WK, Paulius L, Crabtree GW, Deutscher G  
Nature Physics **2**, 402-407 (2006).

Origin of the matching effect in a superconducting film with a hole array

Patel U, Xiao ZL, Hua J, Xu T., Rosenmann D, Novosad V, Pearson J, Welp U, Kwok WK, Crabtree GW  
Physical Review B **76**, 020508 (2007).

Solar energy conversion

George W. Crabtree and Nathan S. Lewis  
Physics Today **60**(3), 37 (2007)

Multidirectional in-plane linear correlated disorder pinning of vortices in YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7</sub>

Figueras J, Puig T, Obradors X, Olsson RJ, Kwok WK, Crabtree GW  
Superconductor Science and Technology **21**, 025002 (2008)

The hydrogen fuel alternative

G.W. Crabtree and M.S. Dresselhaus

MRS Bulletin **33**(4) 421-428 (2008)

How America can look within to achieve energy security and reduce global warming

B. Richter, D. Goldston, G. Crabtree, L. Glicksman, D. Goldstein, D. Greene D, D.

Kammen, M. Levine M, M. Lubell M, M. Savitz, D. Sperling, F. Schlachter, J. Scofield, J.  
Dawson

Reviews of Modern Physics **80**, S1-S107 (2008)