SANG-WOOK CHEONG
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INTEREST: Experimental exploration of novel science and technological exploitation of functional complex/nano-structured materials.

APPOINTMENTS:

2006-08 **Donald H. Jacobs Chair** in Applied Physics, Rutgers
2007- Director, Laboratory of Pohang Emergent Materials, Postech, S. Korea
2005- **Director**, Rutgers Center for Emergent Materials
2002- Professor II, Physics, Rutgers University, NJ
2001-02 Consultant, Bell Laboratories, Lucent Technologies, NJ
1997-01 Professor (tenured), Physics, Rutgers University, NJ
1997-01 Member of Technical Staff, Bell Laboratories, Lucent Technologies, NJ
1991-96 Member of Technical Staff, AT&T Bell Laboratories, NJ
1989-91 Postdoctoral Member, AT&T Bell Laboratories, NJ
1988 Consultant, University of Florida, FL

PROFESSIONAL PREPARATION:

1989 Ph.D. Physics, University of California, Los Angeles, CA
1985 M.S. Physics, University of California, Los Angeles, CA
1982 B.S. Mathematics, Seoul National University
(served in the S. Korean Army from 1978 to 1980)

HONORS/AWARDS:

2010 2010 James C. McGroddy Prize for New Materials
2009 KBS Korean Global Award
2008- Editorial Board of Physical Review Letters – Divisional Associated Editor
2008- Distinguished Visiting Scholar, National Synchrotron Radiation Research Center, Taiwan.
2007 Ho-Am Prize in Science
2006- Distinguished Professor, Pohang Science and Technology University, Korea
2004-2006 Distinguished Visiting Professor, Sung Kyun Kwan University, Korea
2004 Foreign Research Fellow (Visiting Professor),
Graduate School of Frontier Sciences, U. of Tokyo, Japan
2003 13th Most Cited Physicist in the world for the last decade
(http://www.in-cites.com/nobel/2003-phy-top100.html)
2003 Board of Trustees Award for Excellence in Research at Rutgers University
2001 Visiting University Professor, Yonsei University, S. Korea
2000- Fellow, American Physical Society

PUBLICATIONS (Selected out of > 500):

(The total citation is >25,000 and h-index is 82, as of 2/1/2010.)

Most significant papers:

1. Insulating Interlocked Ferroelectric and Structural Antiphase Domain Walls in Multiferroic $YMnO_3$, T. Choi, Y. Horibe, H. T. Yi, Y. J. Choi, Weida. Wu, and S-W. Cheong, **Nature Materials**, in print.
2. Switchable ferroelectric diode and photovoltaic effect in BiFeO3, T. Choi, S lee, Y. J. Choi, V. Kityukhin and S-W. Cheong, **Science** 327, 63 (2009).
3. Multiferroics: a magnetic twist for ferroelectricity, S-W. Cheong and M. Mostovoy, ***Nature Materials*** 6, 14 (2007). [Times Cited: 416]
4. Electric polarization reversal and memory in a multiferroics materials induced by magnetic fields, N. Hur, S. Park, P. A. Sharma, J. S. Ahn, S. Guha and S-W. Cheong, ***Nature*** **429**, 292 (2004). [Times Cited: 539]
5. Atomic-scale images of charge ordering in a mixed-valent manganite, C. Renner, G. Aeppli, B. G. Kim, S-W. Cheong, Y. A. Soh, ***Nature*** 416, 518-521 (2002). [Times Cited: 124]
6. Emergent Excitations in a Geometrically Frustrated Magnet, S. H. Lee, C. Broholm, W. Ratcliff, G. Gasparovic, Q. Hwang, T. H. Kim and S-W. Cheong, **Nature** 418, 856 (2002). [Times Cited: 158]
7. Percolative Phase Separation Underlies Colossal Magnetoresistance in Mixed-Valent Manganites, M. Uehara, S. Mori, C. H. Chen, and S-W. Cheong, **Nature 399**, 560 (1999). [Times Cited: 908]
8. Pairing of Charge-Ordered Stripes in (La,Ca)MnO_3, S. Mori, C. H. Chen and S-W. Cheong, **Nature** 392, 473 (1998). [Times Cited: 473]
9. Spin-Polarized Intergrain Tunneling in $La_{2/3}Sr_{1/3}MnO_3$, H. Y. Hwang, S-W. Cheong, N. P. Ong and B. Batlogg, **Phys. Rev. Lett.** 77, 2041 (1996). [Times Cited: 1122]
10. Lattice Effects on the Magnetoresistance in Doped $LaMnO_3$, H. Y. Hwang, S-W. Cheong, P. G. Radaelli *et al*., **Phys. Rev. Lett**. **75**, 914 (1995). [Times Cited: 1444]
11. Low-Temperature Magnetoresistance and the Magnetic Phase-Diagram of $La_{1-x}Ca_xMnO_3$, P. Schiffer, A. P. Ramirez, W. Bao and S-W. Cheong, **Phys. Rev. Lett**. **75**, 3336 (1995). [Times Cited: 1374]
12. Charge Modulations in $La_{2-x}Sr_xNiO_4$: Ordering of Polarons, C. H. Chen, S-W. Cheong and A. S. Cooper, **Phys. Rev. Lett.** 71, 2461 (1993). [Times Cited: 339]
13. Incommensurate Magnetic Fluctuations in $La_{2-x}Sr_xCu\mathbf{O_4}$, S-W. Cheong, G. Aeppli, T. E. Mason, H. Mook, S. M. Hayden, P. C. Canfield, Z. Fisk, K. N. Clausen and J. L. Martinez, **Phys. Rev. Lett.** 67, 1791 (1991). [Times Cited: 477]

SYNERGISTIC ACTIVITIES:

A) Materials synthesized in the Cheong's lab have been widely utilized for the domestic as well as international collaborative research, resulting in more than 500 publications. This collaborative network has been one of the vital components for the new materials research in the world, and Cheong has played the leading role in these concerted efforts.

B) For the period of 1997-2001, Cheong has been appointed at Bell Laboratories, Lucent technologies as well as Rutgers University. Significant industrial/academic liaison such as student's industrial experience and collaborative research was established through this joint appointment.

C) For the 2001-2005 Maryland/Rutgers MRSEC as well as the renewed 2005-2011 MRSEC, Cheong has been one of two co-leaders of an IRG, and has established synergetic research/education activities between Rutgers and U. of Maryland.

D) Cheong's lab has been designated as the Foreign Research Laboratory of the Center for Strongly Correlated Materials Research, Seoul National University, Korea for the period of 1999-2008. This

arrangement had enabled international student/postdoc exchanges as well as close scientific collaborations.

E) In 2005, Cheong became the founding director of the Rutgers Center for Emergent Materials; the primary role is leading collaborative research on complex/nano-structured materials at Rutgers and NJIT.