# Faculty Curriculum Vitae

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**NAME: Shuheng H. Pan**

**POSITION/TITLE: Professor**

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## EDUCATIONAL BACKGROUND/TRAINING

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| Soochow University, China | Physics | B.A., 1982 |
| University of Texas, Austin | Physics | Ph.D., 1991 |
| Basel University, Switzerland | Postdoc | 1991—1992 |

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| 2001 – present: | Professor, Department of Physics & Texas Center for Superconductivity, University of Houston. |
| 1999 - 2001: | Associate Professor of Physics, Boston University. |
| 1995 - 1999: | Research Associate, Department of Physics & Center for Ultra Low Temperature Physics, University of California, Berkeley. |
| 1992 - 1995: | Senior Research Staff Member, Applied Physics Department & Microstructure Research Center, Hamburg University, Germany. |

## RELEVANT TEACHING EXPERIENCE

Have been teaching «Introduction of Physics» (calculus based, for science and engineer major) since 1999.

## ACADEMIC SCHOLARSHIP/RESEARCH/CREATIVE ENDEAVORS

Major publications:

1. S. Behler, S. H. Pan, P. Jess, A. Baratoff, and H.-J. Güntherodt. "Vortex pinning in ion-irradiated $NbSe_2$ studied by scanning tunneling microscopy", Phys. Rev. Lett. **72**, 1750 (1994).
2. Chr. Wittneven, R. Dombrowski, S. H. Pan, and R. Wiesendanger. "A low-temperature ultrahigh-vacuum STM/STS system with rotatable magnetic field", Rev. Sci. Instrum. **68** (10), 3806, Oct. 1997.
3. H. Bluhm, S. H. Pan, L. Xu, T. Inoue, D. F. Ogletree, and M. Salmeron. "Scanning force microscope and vacuum chamber for the study of ice films: design and results", Rev. Sci. Instrum. **69** (4), Apr. 1998.
4. S. H. Pan, E. W. Hudson, J. Ma, and J. C. Davis "Imaging and identification of atomic planes on cleaved $Bi_2Sr_2CaCu_2O_{8+\delta}$ by high resolution scanning tunneling

microscopy", Appl. Phys. Lett. Vol. **73** (1), 58 (1998).

5. S. H. Pan, E. W. Hudson, and J. C. Davis "Vacuum tunneling of superconducting quasiparticles from atomically sharp scanning tunneling microscope tips", Appl. Phys. Lett. Vol. **73** (20), 2992 (1998).
6. S. H. Pan, E. W. Hudson, and J. C. Davis "$^3$He refrigerator based very low temperature scanning tunneling microscope", Rev. Sci. Instrum. **70** (2), 1459 (1999).
7. E. W. Hudson, S. H. Pan, A. K. Gupta, K.-W. Ng, and J. C. Davis, "Atomic scale quasiparticle scattering resonances in $Bi_2Sr_2CaCu_2O_{8+\delta}$", Science **285**, 88-91 (1999).
8. S. H. Pan, E. W. Hudson, K. M. Lang, H. Eisaki, S. Uchida, and J. C. Davis, "Imaging the effects of individual zinc impurity atoms on superconductivity in $Bi_2Sr_2CaCu_2O_{8+\delta}$", Nature **403**, 746-750, (2000).
9. S. H. Pan, E. W. Hudson, A. K. Gupta, K-W Ng, H. Eisaki, S. Uchida, and J. C. Davis, "STM studies of the electronic structure of vortex cores in $Bi_2Sr_2CaCu_2O_{8+\delta}$ ", Phys. Rev. Lett. **85** (7), 1536 (2000).
10. E. W. Hudson, K. M. Lang, V. Madhavan, S. H. Pan, H. Eisaki, S. Uchida, and J. C. Davis, "Interplay of magnetism and high-$T_c$ superconductivity at individual Ni impurity atoms in $Bi_2Sr_2CaCu_2O_{8+\delta}$", Nature **411**, 920-924, (2001).
11. S. H. Pan, J. P. O'Neal, R. L. Badzey, C. Chamon, H. Ding, J. R. Engelbrecht, Z. Wang, H. Eisaki, S. Uchida, A. K. Gupta, K.-W. Ng, E. W. Hudson, K. M. Lang, and J. C. Davis, "Microscopic electronic inhomogeneity in the high-$T_c$ superconductor $Bi_2Sr_2CaCu_2O_{8+\delta}$", Nature **413**, 282-285, (2001).
12. D. J. Derro, E. W. Hudson, K. M. Lang, S. H. Pan, J. C. Davis, J. T. Markert, and A. L. de Lozanne, "Nanoscale one-dimensional scattering resonances in the CuO chains of $YBa_2Cu_3O_{6+x}$", Phys. Rev. Lett. **88**, 097002 (2002).
13. V. Nascimento, A. Li, D.R. Jayasundara, Y. Xuan, J. O'Neal, S.H. Pan, T.Y. Chien, B. Hu, X.B. He, G. Li, A.S. Sefat, M.A. McGurie, B.C. Sales, D. Mandrus, M.H. Pan, J. Zhang, R. Jin, and E.W. Plummer, "Surface geometric and electronic structure of $BaFe_2As_2$(001)", Phys. Rev. Lett. **103**, 076104 (2009).
14. Lei Shan, Yong-Lei Wang, Bing Shen, Bin Zeng, Yan Huang, Ang Li, Da Wang, Huan Yang, Cong Ren, Qiang-Hua Wang, Shuheng H. Pan and Hai-Hu Wen, "Observation of ordered vortices with Andreev bound states in $Ba_{0.6}K_{0.4}Fe_2As_2$", Nature Physics **7**, 325-331, (2011).
15. J.-X. Yin, Zheng Wu, J.-H. Wang, Z.-Y. Ye, Jing Gong, X.-Y. Hou, Lei Shan, Ang Li, X.-J. Liang, X.-X. Wu, Jian Li, C.-S. Ting, Z. Wang, J. -P. Hu, P.-H. Hor, H. Ding, S. H. Pan, "Observation of a Robust Zero-energy Bound State in Iron-based Superconductor Fe(Te/Se)", Nature Physics **11**, 543-546, (2015).