

Pei-Herng Hor

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Education:

1990 Ph.D. University of Houston
1978 B.S. Tamkang University

Employment History:

1993-present Associate Professor of Physics, University of Houston
1991-1993 Assistant Professor of Physics, University of Houston
1990-1992 Associate Director for Material Research, Texas Center for
Superconductivity
1988-1990 Associate Director for Science, Texas Center for Superconductivity
1987-1991 Visiting Assistant Professor of Physics, University of Houston

Honors and Awards: None

Lab Facilities/Expertise:

Experimental Probes:

1. Magnetic Studies: SQUID and ac susceptometer.
2. Transport Studies: resistivity, thermoconductivity, thermopower...etc, under high pressure, high magnetic field and cryogenic temperature.
3. Optical Studies: ac conductivity, dielectric constant as a function of temperature.
4. Material Characterization: X-Ray, SEM and EDAX.
5. Thermal Analysis/Characterization: DSC, DTA, TGA and Gas Effusion.

Materials Preparation:

1. Thin Films:
 - a. DC & RF sputtering system.
 - b. Evaporation system.
2. Crystallox CGS-5 single crystal growth system.
3. Edmund Buhler fast quenching furnace and various box, tube and induction furnaces.
4. EG&G Model 283,263 potentiostats and electrochemical cells.
5. Morris Research HPS-P7 high temperature, high oxygen pressure annealing furnace.

Five Most Recent Publications:

1. **Unified electronic phase diagram for hole doped high T_c cuprates.** T. Honma & P. H. Hor, Phys. Rev. B77, 184520 (2008).
2. **A basic step toward understanding skin surface temperature distributions caused by internal heat sources.** Wu Zheng; Liu Hui Helen; Lebanowski Logan; Liu Zhongqi; Hor Pei Herng Physics in medicine and biology 52(17), 5379-92 (2007).
3. **Intrinsic electronic superconducting phases at 60 K and 90 K in double-layer $\text{YBa}_2\text{Cu}_3\text{O}_{6+\delta}$.** Honma, T. and Hor, P. Physical Review B: Condensed Matter and Materials Physics 75(1), 012508/1-012508/4 (2007).
4. **Universal optimal hole-doping concentration in single-layer high-temperature cuprate superconductors.** T. Honma and P. H. Hor, Superconductor Science and Technology 19(9), 907-911 (2006).
5. **Charge crystal model for the high- T_c superconductivity.** Kim, Y. H. and Hor, P. H. , Modern Physics Letters B 20(10), 571-584 (2006).