

Yeukuang Hwu

EDUCATION:

- University of Wisconsin-Madison. PhD June 1992. Major: Physics. Area of Interest: Condensed Matter Experiments.
- University of Connecticut-Storrs. Master of Science. June 1987. Major: Physics.
- National Taiwan University Bachelor of Science. June 1982. Major: Physics.

EMPLOYMENT:

2003 -- : Full Research Fellow, Institute of Physics, Academia Sinica

2010 – : Adjunct Professor, National Cheng Kung University

2006 -- : Adjunct Professor, Department of Engineering and System Science, National Tsing Hua University

2002-- : Adjunct Professor, Institute of Optoelectronic Sciences, National Taiwan Ocean University

2000-2001: Visiting Scientist, Institute of Applied Physics, EPFL, Lausanne, Switzerland

2000-2000: Visiting Professor, Department of Materials Science, National University of Singapore, Singapore.

1998 - 2003: Associate Research Fellow, Institute of Physics, Academia Sinica, Taiwan.

1992 - 1997: Assistant Research Fellow, Institute of Physics, Academia Sinica, Taiwan.

RESEARCH EXPERIENCE:

- Ultrafast and ultrahigh resolution phase contrast X-ray microscopy
- Synchrotron photoelectron spectromicroscopy.
- Ultra high resolution photoemission spectroscopy using synchrotron radiation and conventional photon sources.
- Electron spectroscopies (HREELS, EELS, AUGER), and with LEED, STM and laser spectroscopy.
- Surface X-ray scattering.

RESEARCH INTERESTS AND ACCOMPLISHMENTS:

- Established a national facility for biomedical imaging. (2006--)
- Established a ultrahigh resolution x-ray microscopy program achieving 60 nm resolution with multi-keV x-rays
- Established a novel phase contrast approach using unmonochromatic synchrotron x-rays. (1998-present)
- First experiment using UV tunable laser to obtain spectromicroscopy imaging using PEEM. (1996-)
- Successful demonstration of photoelectron emission spectromicroscopy images using hard-x-ray synchrotron radiation. (1998)
- Surface X-ray scattering: identify the “multi-stage” roughening transition of vicinal Pt surface and the surface roughening of Si(331) surface. (1992-95)
- Using combined synchrotron based techniques to identify the electronic and structural properties of nanocrystalline materials. (1995-)
- Studies of high-temperature superconductors (HTSC) with ultrahigh energy and angular resolution photoemission; determination of the electronic excitation spectrum near the Fermi level, and direct observation of the gap. (1988-92)
- Photoemission studies of metal surfaces with ultrahigh resolution photoemission: observation of “anomalous” broadening. (1990-92)
- Studies of high-temperature superconductors (HTSC) surfaces and interfaces with high energy resolution photoelectron spectromicroscopy; determination of the surface chemical inhomogeneities and their effects to the surface interfacial properties with metal overlayers. (1988-92)
- Studied Metal-HTSC and Semiconductor-HTSC interfaces and identified many different interfacial chemical reactions. (1988-92)
- High energy resolution magnetic domain imaging using synchrotron spectromicroscopy based on magnetic circular dichroism as the contrast mechanism. (1988-92)
- Metal-semiconductor interfaces and Schottky barrier formation. (1988-92)
- Electronic structure of metal clusters. (1990-)
- Electronic structure of low dimensional materials. (1988-)

TEACHING EXPERIENCE:

Teaching Assistant and Laboratory Instructor for Freshman Physics for 3 years with excellent student evaluations.

Visiting Professor at Department of Materials Science, National University of Singapore, Singapore.

Adjunct Professor in Institute of Optoelectronics Sciences, National Taiwan Ocean University (2002--)

Adjunct Professor in Department of Engineer and System Sciences, National Tsing Hua University (2006--)

Faculty of Taiwan International Graduate Program, Academia Sinica (2004--)

AWARDS AND HONOR:

2010 Prix Scientifique Franco-Taïwanais (Taiwan-France Scientific Award) offered by Foundation Scientifique Franco-Taïwanais under the La Grande Medaille et les Prix de l'académie des sciences 2010

2006 Outstanding Award in Science and Technology from Executive Yuan

Elected Fellow of Chinese Physics Society, 2005

National Research Council Distinguish Research Award in Physics (2004)

Distinguished Young Scientist Award (2003)

Shim-gye Science Award" by KOSUA (Korean Synchrotron radiation User's Association) (2002)

SERVICES:

Associated editor of Journal of Physics D-Applied Physics (2005-)

INVITED TALKS:

>50 in international conferences and workshops, >50 department colloquium at foreign institutions and >50 in domestic institutions.

PROJECTS:

Primary Investigator of >10 National Science Council projects since 1995 with total funding exceeds 1 million USD.

Principle Investigator of Academia Sinica Major Research Project with budget ~1/2 million USD for 3 years.

Principle Investigator of National Nanoscience Project with budget ~1 million USD from 2004-2007 and 2 million USD for 2007-2010.

Directing the National Biomedical NanoImaging Center from 2006, with an initial funding >4 million USD and a running budget of 2 million USD.

PUBLICATIONS:

>200 articles in refereed journals, 6 book chapters (see list below).