

# SHENG-CHIN KUNG

## *Curriculum Vitae*

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Ph.D Student  
Department of Chemistry  
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### PROFESSIONAL EXPERIENCE

UNIVERSITY OF CALIFORNIA, IRVINE CAMPUS, California

**Research Assistant**

2005-present

- Develop Group II-VI semiconductor nanowires with selective step edge decoration.

MATERIAL RESEARCH LABORATORIES, INDUSTRIAL TECHNOLOGY RESEARCH  
INSTITUTE, Hsinchu, Taiwan

**Associate Researcher**

2001-2005

- Fabrication of well-ordered Anodized Aluminum Oxide (AAO) through electrochemical route and templated metal nanowires and non-lithography nanoimprinting
- Investigation of electron field behaviors in low-dimensional nanomaterials, including CNTs, titanium oxide nanotubes, ZnO nanowires and metallic silicides nanowires
- Synthesis of Single/Multi-Walled Carbon Nanotubes (CNT) through CVD and arc plasma process

MINISTRY OF NATIONAL DEFENSE, Taiwan

**Corporal**

2001

- Performed reserve duty for Reserve Duty System for Technology and Science.

NATIONAL TSING HUA UNIVERSITY, Hsinchu

**Research Assistant**

2000-2001

- Synthesis, modification, and manipulation of 1-D carbon nanomaterials, CNTs and nanofibers(CNFs).

**Teaching Assistant**

1999-2000

- Guided undergraduates in General Chemistry Laboratory.

### EDUCATION

*Ph. D in Chemistry, expected 2010, UNIVERSITY OF CALIFORNIA AT IRVINE, Irvine, CA, US*  
Research Advisor: Professor Reginald Penner

*MS in Chemistry, 2001, NATIONAL TSING HUA UNIVERSITY, Hsinchu, TAIWAN*

Research Advisor: Professor Kuo-Chu Hwang

*Thesis: "Study on Synthesis and Electron Field Emission Properties of Carbon Nanotubes by Thermal Chemical Vapor Deposition"*

*BS in Chemistry, 1999, NATIONAL CHUNG CHENG UNIVERSITY, Chiayi, TAIWAN,*

### AWARDS

- **Achievement Research Award**, Industrial Technology Research Institute, awarded for creative research achievement with superior practicality in field of Micro Fuel Cell, 2004.
- **Preminent Research Award**, Industrial Technology Research Institute, awarded for preminent research achievement with pioneered technique in the field of CNTs, 2003.
- **Tuition Scholarship**, for Graduate Students majoring in Fundamental Sciences, 1999-2001.
- **Outstanding Youth**, Hsin-Tein City, Taipei County, Taiwan, 1995.

### CERTIFICATIONS/TRAINING

- Back Light Module and Materials course, 2004.
- Rheology of Fundamentals and Measurements, 2004.
- Thin Film Transistor Liquid Crystal Display training, 2001.
- VLSI Training Course, 2000.

### MEMBERSHIPS

- Chinese Chemical Society, 2002-Present.
- Materials Research Society, 2002-2003.

## PEER REVIEWED PUBLICATIONS

Y.F. Lin, Y.J. Hsu, S.Y. Lu, **S.C. Kung**, “Non-catalytic and Template-free Growth of Aligned CdS Nanowires Exhibiting High Field Emission Current Densities.”, **Chem. Commun.** 22 (2006) pp. 2391-2393.

Z.H. Khan, S.S. Islama, **S.C. Kung**, T.P. Perng, S. Khan, K.N. Tripathid, M. Agarwale, M. Zulfequre, M. Husain, “Characterization of Carbon Nanotubes grown on Fe<sub>70</sub>P<sub>30</sub> Film.”, **Physica B** 373 (2006) pp. 317–322.

Y.L. Chueh, L.J. Chou, S.L. Cheng, L.J. Chen, C.J. Tsai, C.M. Hsu, **S.C. Kung**, “Synthesis and Characterization of Novel Metallic TaSi<sub>2</sub> Silicide Nanowires.” **Appl. Phys. Lett.**, Vol. 87, No. 22, (2005) pp. 223113.

Y.L. Chueh, L.J. Chou, C.M. Hsu, **S.C. Kung**, “Synthesis and Characterization of Taper-like and Rod-like Si Nanowires on Si<sub>x</sub>Ge<sub>1-x</sub> Substrate.” **J. Phys. Chem. B**, Vol. 109, No. 46, (2005) pp. 21831-21835.

R.C. Wang, C.P. Liu, J.L. Huang, S.J. Chen, Y.K. Tseng, **S.C. Kung**, “ZnO nanopencils: Efficient field emitters.” **Appl. Phys. Lett.** Vol. 87, No. 1 (2005) pp. 013110, *Cover article*.

**S.C. Kung**, I.N. Lin, K.C. Hwang. “Oxygen and Ozone Oxidation-enhanced Field Emission of Carbon Nanotubes.” **Appl. Phys. Lett.**, Vol. 80, No. 25, (2002) pp. 4819-4821.

## PATENTS

“Method for Making High Surface Area Carbon Materials.” B.J. Li, **S.C. Kung**, C.M. Hsu, TAIWAN Patent No.: 1255791, Jun. 1 (2006).

“Process and Device for Upgrading Current Emission.” K.C. Hwang, **S.C. Kung**, Filed Dec. 05 (2002). U. S. Patent Application Serial Number: 10/313,757, U.S. Publication No.: US 2004/0109813.

“Process and Device for Upgrading Current Emission.” K.C. Hwang, **S.C. Kung**, TAIWAN Patent No.: 594833, Jun. 21 (2004).

## INTERNATIONAL CONFERENCE PROCEEDINGS (SELECTIVE)

- “Plasmon Resonances of Au Nanowire Array Embedded in Patterned AAO Template”, B.J. Li, **S.C. Kung**, C.S. Tsai, M.W. Lin, S.C. Chou, PACIFICHEM 2005, Honolulu, Hawaii, December 15-20.
- “Measurement of Field-Emission Properties of a Single Crystallized Silicon Emitter Using Scanning Electron Microscopy”, T.C. Cheng, H.T. Hsueh, W.J. Huang, **S.C. Kung**, J.S. Wu, M.N. Chang, Microscopy of Semiconducting Materials XIV, University of Oxford, UK, April 11-14 (2005),
- “Catalyst-free Synthesis of Mmulti-Walled Carbon Nanotubes from Carbon Nanopowders”, H.J. Lai, C.M. Hsu, **S.C. Kung**, C.C. Lin, R. Chang, ICNDST-9, Tokyo, Japan, March 26-29 (2004).
- “Growth Behavior and Interfacial Reaction Between Carbon Nanotubes and Si Substrate”, C.M. Hsu, **S.C. Kung**, B.J. Li, H.J. Lai, C.T. Kuo, 2003 AVS 50<sup>th</sup> Symposium, Baltimore, Maryland, Nov. 2-7.
- “Preparation of a New Carbon Nano-Particle by Arc Discharge”, B.J. Li, **S.C. Kung**, C.M. Hsu, J.Y. Gau, H.J. Lai, **Mat. Res. Soc. Symp. Proc.** Vol. 822, S 6.12.1 (2004).
- “Field Emission Properties of Carbon Nanotubes Synthesized by High Temperature Arc Method and Low Temperature CVD Method”, H.J. Lai, **S.C. Kung**, C.M. Hsu, B.J. Li, C.C. Lin, C.J. Lin, **Mat. Res. Soc. Symp. Proc.** Vol. 772, M 9.11.1 (2003)
- “Emission Properties of Carbon Nanotubes Field Emitter”, B.J. Li, **S.C. Kung**, T.F. Kuo, H.J. Lai, ICNDST 8th, Victoria, Australia, July 21-26 (2002).
- “Purification of Single-Walled Carbon Nanotube Bundles”, **S.C. Kung**, B.Y. Wei, C.J. Lin, H.J. Lai, Nano 2002, Orlando, Florida, USA, June 16-21 (2002).

## REFERENCES

*Available upon request*