

# Chih-Peng Hsu

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Lab: (206) 221-6440 | Cell: (206) 234-1338

## OBJECTIVE

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- Present ~ 2008 **To pursue advanced study in the area of Devices and MEMS.**
- Heat Transfer Technologies for Microelectronics and MEMS

## EDUCATION

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- September 2004 **UNIVERSITY OF WASHINGTON, SEATTLE**  
~ Present *PhD Student*
- Expected graduation date December 2007
- June 2002 **National Tsing Hua University** Hsinchu, Taiwan  
*Master degree description, concentrations*
- M.S. in Electronics Engineering
  - Power Semiconductor Devices Design and Simulation
  - Thesis Work: “Over-Current Protection in Insulated Gate Bipolar Transistor”
- June 2000 **Feng Chia University** Taichung, Taiwan  
*Bachelor degree description, concentrations*
- B.S. in Electronics Engineering
  - Senior Project: “Design and Fabrication 900/1800 Mhz Vector Controlled Oscillator (VCO)”

## PUBLICATIONS

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- N. E. Jewell-Larsen, P. Q. Zhang and C. P. Hsu, University of Washington, Seattle, WA; I. A. Krichtafovitch, Kronos Air Technologies, Redmond, WA; A. V. Mamishev, University of Washington, Seattle, WA, “Coupled-physics modeling of electrostatic fluid accelerators for forced convection cooling”, 9th AIAA/ASME Joint Thermophysics and Heat Transfer Conference, 2006
- C. P. Hsu, N. E. Jewell-Larsen, A. C. Rollins, I. A. Krichtafovitch, S. W. Montgomery, J. T. Dibene II, and A. V. Mamishev, "Electrostatic Fluid Accelerators Miniaturization Using Microfabrication Technology," 2006 ASME International Mechanical Engineering Congress and Exposition

## WORK AND RESEARCH

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- September 2004 **UNIVERSITY OF WASHINGTON, SEATTLE**  
~ Present
- Project: “Heat Transfer Technology for Microelectronics and MEMS”*
- This project is to develop an electrostatic air pump incorporated into chip package level for heat withdrawal from microelectronics and MEMS devices.
- Concentration Listing*
- Depth course list
    - EE 502 (Introduction to MEMS) ~ Autumn 2004
    - EE 527 (Solid-State Lab Techniques) ~ Spring 2005
      - Class Project: “Electrostatic Air Pump Fabrication”
    - EE 539 (Advanced Topics in Solid-State Electronics) ~ Spring 2005
      - Class Project: “Electrostatic Air Pump Fabrication Process Simulation”
    - EE 539 (Advanced Topics in Solid-State Electronics) ~ Winter 2006
      - Class Project: “Beam Corona Electrodes Analysis for Micro-Electrostatic Fluid Accelerators”

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- Breadth course list
  - EE 476 (VLSI I) ~ Autumn 2004  
Class Project: “DFF Design and Layout”
  - EE 525 (VLSI II) ~ Winter 2005  
Class Projects: “18-bits Full Adder Design”, “9-bits Multiplier Design”, and “256KB SRAM Circuit Design and Layout”
  - EE 540 (VLSI Testing) ~ Autumn 2004
  - EE 505 (Random Variables) ~ Summer 2006

2002-2004

## **Military Service**

*A Squad Leader*

- Assisting troop training

2000-2002

## **National Science Council of Taiwan**

*Project: “Design and Fabrication of Smart IGBT”*

- It is a three-year project commissioned by the National Science Council of Taiwan.
- The purpose of this project was to integrate Over-Voltage Protection, Over-Current Protection, and Over-Temperature Protection functions into the standard 600V IGBT fabrication process to replace an external protection circuit.  
*“New Current Sensing Cell” proposed*
- I proposed a new current sensing circuit and integrated it into the standard 600V IGBT fabrication process.

## **SKILLS**

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- Circuit Design, Process Simulation and Layout Related Tools:
  1. Hspice: A Tool for Circuit Behavior Simulation
  2. Verilog: A Tool for Logic Design
  3. Tsuprem4 and Medici: Tools for Physics Characteristics Analysis and Parameter Design
  4. Cadence and L-Edit: Tools for Layout and Schematic Design
  5. Coventor: A Tool for MEMS Design
  6. Femlab: A Multi-Physics Simulator
  7. Matlab
- Language  
Fluent in Mandarin and English