

Bernardo Cordovez

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Cornell University
Ithaca, NY 14853
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EDUCATION:

Ph.D. Candidate – Cornell University, Ithaca, NY Expected: Dec. 2009
Mechanical Engineering
Dissertation: Electrokinetically Active Nanostructures
Advisor: Prof. David Erickson
GPA: 3.73/4

Master of Science – Cornell University, Ithaca, NY Aug. 2008
Mechanical Engineering
Advisor: Prof. David Erickson

University of California, Santa Barbara (UCSB) May 2005
Bachelor of Science, Mechanical Engineering
GPA: 3.64/4, *Cum Laude*

RESEARCH AND WORK EXPERIENCE:

Cornell University, Ithaca, New York Aug. 2005 - Present
Sibley School of Mechanical and Aerospace Engineering
Graduate Research Assistant
Supervisor: Prof. David Erickson

- Micro and nanofluidic devices for biomolecular transport, storage and analysis
- “Optofluidics” for high density optical memories
- Development of electrokinetic displays with nanocrystal pixels.

Veeco Metrology, Santa Barbara, CA
Technical Intern Jun. 2004 – Jul. 2005

- AFM operation and force measurement calibrations
- 3-D CAD design of machined parts for AFM controllers

Undergraduate Research Assistant

Mechanical Engineering

University of California, Santa Barbara (UCSB)

1. Mechanical response of Ceramic Ablators
 - Supervisor: Prof. F. Milstein Aug. 2002 – Dec. 2003
2. Vibrational analysis of a micro turbine
 - Supervisor: Prof. B. Paden Jan. 2004 – May 2004

Santos & Urrutia Structural Engineers, San Francisco, CA

Technical Intern

Jun. 2003 – Sept. 2003

- Seismic and vertical calculations of structural members of residential houses in the San Francisco Bay Area
- 2-D CAD design of architectural plans

PUBLICATIONS:

Articles published in refereed journals

1. **Cordovez, B.**, Psaltis, D., Erickson D., “Optofluidic Data Storage.” Submitted (2008)
2. Huh, Y.S., Chung, A.J., **Cordovez, B.**, Erickson, D., “Enhanced on-chip SERS based biomolecular detection using electrokinetically active microwells.” Submitted (2008)
3. Erickson, D., Mandal, S., Yang, A., **Cordovez, B.**, “Nanobiosensors: Optofluidic, electrical and mechanical approaches to biomolecular detection at the nanoscale.” *Journal of Microfluidics and Nanofluidics*, 4, 33-52 (2008).
4. **Cordovez, B.**, Psaltis, D., Erickson D., “Trapping and Storage of Particles in Electroactive Microwells.” *Applied Physics Letters*, 90, 024102 (2007)

Contributed Conference Publications/ Oral Presentations

1. **Cordovez, B.**, Psaltis, D., Erickson, D. “Spectrographic Fluidic Memory using Electroactive Nanowell Arrays” *IEEE/LEOS Summer Topical on Optofluidics*, Acapulco, Mexico, July 2008.
2. Chung, A., Kim, D., Chen, L., Akhmechet, R., **Cordovez, B.**, Erickson, D., “Electroactive Microfluidic Devices for Control of Insect Cyborg Neuromuscular Systems.” *Micro-Total Analysis Systems (μTAS)*, Paris, France, Oct. 2007.

3. **Cordovez, B.**, Psaltis, D., Erickson, D. "Electroactive Nanowells for Spectrographic Fluidic Memory" *SPIE Optics and Photonics*, Section on Optofluidics, San Diego, California, August 2007.
4. **Cordovez, B.**, Erickson, D., "Electroactive Nanowell Sensors for Parallel Particle Trapping and Detection" *Micro-Total Analysis Systems (μTAS)*, Tokyo, Japan, Oct. 2006.
5. **Cordovez, B.**, Tung, S., Erickson, D., "Optofluidic Particle Manipulation and Characterization in Individually Addressed Nanowell Sensors" *IEEE/LEOS Summer Topical on Optofluidics*, Quebec City, July 2006.
6. **Cordovez, B.**, Erickson, D., "Electro-active Nanowell Structures for Sensing and Optofluidic Applications" *Conference on Lasers and Electro-Optics (CLEO)*, Long Beach, CA, May 2006.

TEACHING EXPERIENCE

Teaching Assistant

Sibley School of Mechanical and Aerospace Engineering

Cornell University, Ithaca, New York

MAE 427: *Fluids/Heat Transfer Laboratory*

- Term 1. Supervisor: Prof. E. Fisher Aug. 2005 – Dec. 2005
- Term 2. Supervisor: Prof. M. Louge Aug. 2007 – Dec. 2007

QUALIFICATIONS, AWARDS AND MEMBERSHIPS

Fundamentals of Engineering Certified (FE / EIT)

Sacramento, CA

May 2004

Distinction in the Major

University of California, Santa Barbara (UCSB)

May 2005

Tau Beta Pi Honor Society Member

April 2004

ADDITIONAL INFORMATION

- Proficient in Micro and Nanoscale fabrication, Cornell University's NanoScale Science and Technology Facility.
- Proficient with MATLAB, C, Microsoft Office and MathCad.

- Proficient with Solid Works, Solid Edge, AutoCad, ANSYS and COMSOL.
- Fluent in Spanish, knowledgeable in Italian.