

## **Curriculum Vitae – Dr. Avraham Be'er**

### **Private Details:**

Name: Avraham Be'er  
Birth date: 8.8.71  
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### **Home (ISRAEL):**

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### **Home (USA):**

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### **Affiliation:**

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Austin TX 78712  
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## **Education:**

- 2007- Post Doc. Fellow. Center for Nonlinear Dynamics,  
University of Texas at Austin
- 2004-2006 - Post Doc. Fellow. Department of Physical Electronics,  
Tel-Aviv University, Israel.
- 2000-2004 - Ph.D. Department of Physics, Bar Ilan University, Israel.
- 1998-2000 - M.Sc. (Magna Cum Laude) Department of Physics, Bar Ilan University.
- 1995-1997 - B.Sc. (Cum Laude) Department of Physics, Bar Ilan University.

## **Employment:**

- 1998-2004 – Research Assistant, Department of Physics, Bar Ilan University.
- 1998-2004 – Teaching Assistant, Department of Physics, Bar Ilan University.
- 2001-2006 – **Lecturer**, Department of Physics, Bar Ilan University.

## **Research Interests:**

1. Interface Growth
2. Reactive-Wetting processes and Spreading Droplets
3. Complex Biological Systems
4. Instability of Nano Particles
5. Cancer Diagnosis
6. Microscopic Techniques

## **Research Experience:**

1. Optical Microscopy, including Differential Interference Contrast (DIC) accessory.
2. Toxic materials
2. Vacuum Evaporation and Thin Films
3. Nano Particles
4. Transmission Electron Microscopy (TEM)
5. Video-Computer Image analysis and Fourier Transform analysis
6. Atomic Force Microscopy (AFM)
7. Bacterial Growth

## **Teaching Experience:**

- 1998-2001 “General Physics” – Teaching Assistant, Bar-Ilan University
- 2002-2006 “General Physics” – **Lecturer**, Bar-Ilan University
- 2001-2003 “Physics Laboratory” – **Lecturer**, Bar-Ilan University
- 2003-2004 “General Optics” – Assistant, Bar-Ilan University
- 2001-2006 “Physics 5” – **Teacher**, High Schools

### **Awards, Prizes and Scholarships:**

1. The Rotary Award for best students (1996)
2. The Otto Schwartz Scholarship (2000)
3. The Department of Physics fellowship for outstanding M.Sc. students (1998-2000)
4. Excellence in Teaching (2000-2005)
5. Lev Margulis Award of merit, the Israel Society for Microscopy (2003)
6. The Rector Award for excellence (2003)
7. The President Scholarship for best students (2001-2004)
8. The Eshkol Fellowship, Ministry of Science, Israel, Post Ph.D. (2005-2006)

### **List of Publications:**

1. "The dynamics and geometry of solid-liquid reaction interface".  
Avraham Be'er, Yossi Lereah and Haim Taitelbaum  
Physica A 285, 156-165 (2000)
2. "The roughness and growth of a silver-mercury reaction interface".  
Avraham Be'er, Yossi Lereah, Inbal Hecht and Haim Taitelbaum  
Physica A 302, 297-301 (2001)
3. "Time resolved three-dimensional quantitative microscopy of a droplet spreading on solid surfaces".  
Avraham Be'er and Yossi Lereah  
J. of Microscopy 208, 148-152 (2002)
4. "Spreading of mercury droplet on thin gold films".  
Avraham Be'er, Yossi Lereah, Aviad Frydman and Haim Taitelbaum  
Physica A 314, 325-330 (2002)
5. "Interface Roughening Dynamics: Temporal Width Fluctuations and the Correlation Length".  
Avraham Be'er, Inbal Hecht and Haim Taitelbaum  
Phys. Rev. E 72, 031606 (2005)
6. "Single interface growth: fluctuations and the correlation length".  
Inbal Hecht, Avraham Be'er and Haim Taitelbaum  
Fluctuations and Noise Letters, 5, L319-L324 (2005)
7. "Quantitative Experimental Studies of Spontaneous Rotations of Bismuth Nanoparticles".  
Avraham Be'er, Richard Kofman, Fritz Phillipp and Yossi Lereah  
Phys. Rev. B 74, 224111 (2006)

8. "Spreading of Mercury Droplets on Thin Silver Films in Room Temperature".  
Avraham Be'er, Yossi Lereah, Aviad Frydman and Haim Taitelbaum  
Phys. Rev. E 75, 051601 (2007)
  9. "Spontaneous Crystallographic Instabilities of Pb Nanoparticles in a SiO Matrix".  
Avraham Be'er, Richard Kofman, Fritz Phillipp and Yossi Lereah  
Phys. Rev. B 76, 075410 (2007)
  10. "Reactive-Wetting of an Hg-Ag System at Room Temperature"  
Avraham Be'er, Yossi Lereah and Haim Taitelbaum  
Materials Science and Engineering A, (in press) (2007)
  11. "Rotations by Discrete Angle of Bi Nanoparticles Embedded in a Liquid Ga Matrix".  
Avraham Be'er, Richard Kofman and Yossi Lereah  
Phys. Rev. B (submitted)
- Patent: "Method and system for determining shape of an object from a planar top view thereof" (pending). Application No. 10/916,408. Publication No. US – 2005-0036674

## **Oral Presentations:**

### 1. Conferences

1. "Time Resolved 3D quantitative Microscopy of a Droplet Spreading on Solid Substrates"  
*The 37<sup>th</sup> Annual Scientific meeting of the Israel Society for Microscopy*  
Michmoret, Israel, May 2003
2. "Interface Characteristics of Spreading Droplets"  
*StatPhys 22 - The 22<sup>nd</sup> International Conference of Statistical Physics,*  
Indian Institute of Science, Bangalore, India, July 2004

### 2. Seminars

1. "The Roughness and Growth of Solid-Liquid Interfaces"  
*Joint Materials Seminar*  
Tel-Aviv University, Israel, January 2003
2. "Time Resolved 3D quantitative Light-Microscopy, and Applications"  
*TEM Seminar*  
Tel-Aviv University, Israel, May 2003
3. "Time Resolved, Three-Dimensional Microscopy of a Droplet Spreading on Solid Surfaces"  
*Joint Materials Seminar*  
Tel-Aviv University, Israel, November 2004

4. “Differential Interference Contrast (DIC) Accessory and Some Applications”  
*TEM Seminar*  
Tel-Aviv University, Israel, May 2005
5. “Spontaneous Rotations of Nano Bi Particles Embedded in Liquid Ga”  
*TEM Seminar*  
Tel-Aviv University, Israel, May 2005
6. “Reactive-Wetting Spreading Droplets: Interface Characteristics”  
*Special Seminar*  
The Center for Non-Linear Dynamics, Department of Physics,  
University of Texas at Austin, USA, Feb 2006
7. “New Experimental Techniques in Micro-Scale Spreading Processes”  
*Special Seminar*  
The Department of Physics, Bar-Ilan University, Israel, May 2006