

# ALISA NOREYAN

Mailing Address: 2535 W. Bancroft St., Apt. # 9  
Toledo, OH 43607

e-mail: anoreyan@utoledo.edu  
Phone: (419) 537 6960 home

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**Objective:** To further knowledge through research and application in challenging position

## **Education:**

August 2000 – present

**University of Toledo**  
**Ph.D. Engineering**  
**Major: Manufacturing Engineering**

**Toledo, OH**

*\*Expected date December 2003 or May 2004*

March 1996 – October 1997

**American University of Armenia**  
**M.Sc., Industrial Engineering**

**Yerevan, Armenia**

December 1993 – December 1996

**Yerevan State University**  
**Post-graduate study**  
**Physics department**  
**Major: Solid State Physics**

**Yerevan, Armenia**

September 1988 – July 1993

**Yerevan State University**  
**M.S. Physics**  
**Physics department**  
**Major: Solid State Physics**

**Yerevan, Armenia**

## **Experience:**

August 2000 – present

**University of Toledo**  
**Associate Researcher, Precision Micro-machining Center**

**Toledo, OH**

- Using Molecular Dynamic (MD) Simulation to investigate nanoindentation with Lennard Jones Potential SPaSM (Scalable Parallel Short-range Molecular dynamics)
- Developing MD code, using Tersoff potential for interaction between diamond cutter and 3C SiC, optimizing integration algorithm for this specific potential and the appropriate algorithm for thermostat layers
- Applying atom decomposition algorithm to Tersoff potential to parallelize the code to be able to run for big systems of atoms on distributed-memory parallel machine, which allows for message-passing data between independently executing processors (*in process*)
- Examining, through combination of both experimental and theoretical atomistic studies, the dependence of the critical depth of cut for plastic deformation on the applied load, indentation and scratching speed, initial temperature of workpiece (*in process*)
- Fundamental understanding of microscopic factors that control fractures and the brittle-to-ductile transition in nanomachining of SiC

**Research project:** Using Molecular Dynamic Simulation to investigate interaction between diamond tool and ceramic workpiece during superabrasive processes

May 1998 – August 2000

**Business Support Center (TACIS, European Union)**  
**Head of Trade Promotion Group**

**Yerevan, Armenia**

- Providing consultancy on Export/Import promotion, Information/Consultancy on banking and Transportation, Information/Consultancy on International Trade Terms, Armenian customs/taxes
- Maintaining the client data base, Business Offers, Business Requests
- Realizing market research
- Developing business plans and feasibility studies
- Caring out training sessions on financial management, market research, tax regulations of Armenia

July 1996 – May 1998

**“SHANT” FEC**

**Yerevan, Armenia**

**Engineer Economist**

- Optimization of plant lay-out, demand forecasting, cost calculation, market research
- Design of product packaging
- Organizing import of raw materials, packaging, machinery, etc.

September 1992 – July 1996

**Institute of Applied Problems of Physics**

**Yerevan, Armenia**

**Research assistant** (*part time*)

- Experimental investigations of x-ray diffraction on quartz crystal, which was under external influences (temperature gradient, ultrasonic vibration, mechanical deformation)

**Publications:**

- I.D. Marinescu, J. Ramirez-Salas, A.A. Noreyan, New Millennium frontiers on precision engineering, Int. J. Prod. Res., 2002, vol. 40, no.15, 3807-3819
- A. Noreyan, J. Amar, I. Marinescu, Molecular Dynamic Simulation of Nanoindentation of Silicon Carbide by Diamond Tip, 2002, The Netherlands, 3rd International Euspen Conference proceedings
- I. Marinescu, A. Noreyan, Precision Engineering limits and prospective, Design Seminar2002 (sponsored by CIRP)
- I. Marinescu, J. Amar, A. Noreyan, MD simulation of nanoindentation, 2001, AMST Conference Proceedings, UDINE (ITALY)

**Computer skills:**

*Languages:* C, FORTRAN

*Development systems and tools:* Arena, Matlab, Lindo, Gino, Adobe Photoshop, Corel Draw, MS Office, Linux, SPASM (Scalable Parallel Short-range Molecular dynamics)

**Professional associations:** Member of Society of Manufacturing Engineering.

**References:** References available by request.

**Languages:** English, Armenian (native), Russian, French (fair)