

# AKHLAQ AHMAD

**Nationality:** Pakistani  
**Date of Birth:** April 4th, 1973  
**Address (Korea):** Mechanical Engg. Dept. Chosun Univ. #375 Seosuk-dong, Gwangju, 501-759 Korea.  
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## **OBJECTIVE:**

**To seek excellence in the field of MicroElectroMechanical System (MEMS) Engineering.**

## **EDUCATIONAL RECORDS:**

- **M.Sc. Mechatronics Engineering (MEMS & NanoPhotonics) ( March 2003-Feb.2005)**  
MEMS & NanoPhotonics Laboratory, Gwangju Institute of Science & Technology (GIST), Gwangju, South Korea.
- **B.Sc. Mechanical Engineering (1995~ 2000)**  
Department of Mechanical Engineering, University of Engineering and Technology (UET), Lahore, Pakistan.
- **B.Sc. Double Math's & Physics 1994**  
Government college of Science, Baha-ud-din Zakariya University (B.Z.U.) Multan, Pakistan.

## **PROFESSIONAL MEMBERSHIP:**

- Member PEC (Pakistan Engineering Council) Life time membership.

## **COMPUTER SKILLS:**

- ANSYS, AutoCAD, MyCAD, Mat lab, Origin
- Windows, MS Office, Adobe Photoshop

## **WORKING EXPERIENCE:**

- **Research Engineer (March 2005-Present)**  
At present working as a research engineer at Laser Application Research Center (LARC) in Chosun University Gwangju, South Korea. Area of research is to explore the possibility of using ESPI technique for vibration analysis of MEMS structures. In addition, most of the work is to perform ANSYS analysis for different structures since having joined here.
- **Research Work at MEMS Lab, GIST (March 2003-Feb.2005)**  
Worked on different projects in coordination with fellow researchers at MEMS Lab. Specifically, work was related to projects on RF MEMS switches and VOA actuators. Designed and fabricated a metal to metal contact, circuit switch with the use of Chevron type Bi-stable connector and a Thermo-elastic type actuator. And point of interest was to find out the ways to reduce resistance between contact interfaces of the switch.

## **Research Project in MEM & NanoPhotonics Laboratory**

- Development of a Micromachined optical switch for telecommunications.
- Development of integrated nanopositioning actuator using Nanomachine technology.
- Development of a novel illumination for compact data storage NSOM probes.
- Development of a Micromachined VOA for WDM optical communications.

### **RESEARCH ACTIVITIES:**

#### **Master of Engineering Thesis:**

(Micromachined Electric circuit switch using Thermoelastic Chevron type Actuators)

The purpose of this research was to design and fabricate a micromachined electric circuit switch with the use of Thermoelastic type Actuator and a Chevron type bi-stable connector for low power consumption, low contact resistance and low-loss that can be integrated with existing technologies for high-speed electronics and RF MEMS applications.

#### **Achievements:**

- Designing of the switch with the use of Chevron type bi-stable connector and a Thermoelastic type actuator.
- Simulations using Matlab and ANSYS programs.
- Fabrication of switch.
- Experimentation and analysis.
- Chevron type Bi-stable connector showed a clear latch-up behavior.
- Thermoelastic actuator moved up to the designed optimal value.
- A formula is developed to estimate the resistance attitude of contact interfaces.

#### **PUBLICATION:**

“A Study on Latch-up type Thermoelastic microactuator for RF Switches”  
6<sup>th</sup> Korea MEMS Conference, Jeju Island Korea, April 8-10, 2004.

### **RESEARCH PROJECT:**

#### **Masters Course**

- Design and fabrication of an actuator with less settling time.
- Structural Optimization of VOA actuator to reduce its settling time using RSM method.
- Mecha-Project (design and fabrication of whirling cleaner)

#### **B.Sc. Engineering**

- Energy Conservation in Packages Ltd. Lahore. (Case Study: Fire tube Descon boiler)
- Solar Ponds

### **MASTER OF ENGINEERING SUBJECTS:**

Linear Algebra, MEMS-1 (Micro Electro Mechanical System), Engineering Mechanics, MEMS-2, Optimization, Statistical Analysis of Dynamic systems, Mecha-Project (design and fabrication of whirling cleaner), Engineering Electronics, Korean Basic, Korean Intermediate.

### **CO CURRICULAR ACTIVITIES:**

- Quaid-e-Azam Scout (The highest rank of scouting in Pakistan)
- Class representative for two years at UET Lahore
- Member of SMIE (Society of Mechanical & Industrial Engineers) at UET Lahore.
- Member of Faculty Cricket & Badminton Teams at UET Lahore
- National Cadet Corps Training.

### **HOBBIES AND PASTIME INTERESTS:**

- Sports including Cricket, Badminton, Swimming and Hockey.
- Playing cards when few old buddies are at one place
- Movies, especially drama and classical but I also watch present day action and romantic.
- Traveling and sightseeing with friends.
- Internet surfing and searching information.
- Reading News papers and columns of well know columnists.

### **SPOKEN LANGUAGES:**

- English (2<sup>nd</sup> Language)
- Urdu (Native)
- Korean (primary level)

### **REFFERANCES:**

**1. Dr. Lee Jong Hyun**

Professor

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