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GARY YU GU

OBJECTIVE

Mechanical Engineer in **FEA**, **structural analysis**, and **electronics packaging**

KEY QUALIFICATIONS

- **Six years** of **industry** experience including mechanical engineer, stress analyst, and packaging engineer.
- **Ten years** of **FEA** experiences including static, dynamic, thermo-mechanical, creep, fatigue, drop, contact, fracture, heat transfer, and structural analyses.
- **Ph.D.** in **Solid Mechanics** with in-depth knowledge of microelectronics packaging, MEMS, thin film, and thermally sprayed coating.
- Expertise in **DOE** (design of experiment), **drop test**, and **nano-indentation**.
- Proficiency in FEA software **ANSYS**, **ABAQUS**, **LS-Dyna**, and **APDL**/macro.
- Proficiency in **SDRC-IDEAS** and comprehensive parametric modeling.
- Hand on experience on **JMP**, **Fe-Safe**, ProE, AutoCAD, and UNIX systems.
- Self-motivated, highly organized, good written and verbal communication skills.

WORK EXPERIENCE

2004/5-present RF Micro Devices Inc Greensboro, NC

Sr. Packaging Engineer

- Mechanical modeling and **FEA** in support of the development of **flip-chip**, **WLCSP**, wire bond, **LGA**, **BGA**, and AlN/GaN packages.
- **Drop test** simulation and **DOE** for board-level and device-level drop reliability.
- Thermo-mechanical analysis for **stacked die** and **embedded die** packages.
- Modeling support for **via cracking**, **die cracking**, **solder bridging**, interface delamination, and **solder fatigue** life (creep) estimation.
- Cap structure optimization to protect **SAW filter** and **MEMS switch**.

2003–2004 NSF-MRSEC Thermal Spray Center SUNY Stony Brook, NY

Research Engineer

- **FEA** in support of the **design optimization** of pores thermal barrier coatings to protect gas turbine components from high temperature and impact loads.
- **Modal dynamic** and **stiffness analysis** of precision motion systems.
- **High-acceleration dynamic** analysis and mechanical design for a high-stiffness piezoelectric energy supplier for missile excitation.

2002 Summer Symbol Technologies Inc. Holtsville, NY

Mechanical Engineer - Intern

- **Drop** and **shock** simulations/analyses of Symbol's **handheld computers** (entire housing with internal assemblies) in support of the prototype design.

2000-2001 Computational Mechanics Lab SUNY at Stony Brook, NY

Consulting Work

- **Multi-scale** (global-local) finite element simulation, **3D fracture** analysis, and **fatigue life** estimation for BGA **flip-chip** packages.
- **Nano/micro-indentations** for nondestructive mechanical characterization of anisotropic and inhomogeneous **thin films/coatings**.
- Multi-step FEA to reduce the **residual stress** in torque sensor fabrication.
- 3D comprehensive modeling for the **failure jackscrew** (on Alaska Airlines) under critical **friction/wear-out** (for NTSB, ntsb.org).

1992–1995 Dalian Design Ins. of Mechanical & Electronic Tech. China

Mechanical/Stress Engineer

- Finite element programming for **structural analysis** of 3D frame and truss.
- **Structural design/analysis** for major, hanging, and supporting steel structures of two 1000-ton cold storage units.
- **Structural design** and **stress analysis** for a 42kg/24hrs ice machine with internal pumping and refrigeration systems.

EDUCATION

1998–2003 Mechanical Engineering, State Univ. of New York at Stony Brook.
- **Ph.D.** Major: **Solid Mechanics** Minor: **Mechanical Design**

1995–1998 Institute of Mechanics Chinese Academy of Science, China
- **M.S.** Major: **Mechanical Engineering**

1988–1992 Mechanical Engineering Dalian University of Technology, China
- **B.S.** Major: **Engineering Mechanics**

HONORS, AWARDS, AND ACTIVITIES

- Presenter on 2006 **IEEE-ECTC** and 2005 **IMAPS** conference.
- **Best paper award**, Society of Experimental Mechanics Symposium, May 2002.
- Member of ASME, IMAPS, & SigmaXI, an honorary scientific research society.
- **Fellowship** (Research Assistant), Dept. of Mechanical Engineering, State Univ. of New York at Stony Brook, 1998-2003.

PUBLICATIONS

- Three (first author) **journal papers**.
- Three semi-annual and two final **technical reports**.
- Seven **conference** papers including four **technical presentations**.

Details available upon request.

REFERENCE

Available upon request.