

Agat Hirachan

agat.hirachan@hotmail.com, 3519 Casaverde Ave, Dallas, TX 75234, Cell: 214-609-0028

OBJECTIVE:

To seek an entry level position or an internship in the company as a mechanical engineer and utilize my technical skills.

SUMMARY:

- Working on the hot spots cooling in high power electronic devices using conventional and thin film thermoelectric coolers, analysis of thermal and structural aspects of design
- Research assistant in EMNSPC Lab
- Proficient in ANSYS workbench, ANSYS Icepak and Pro/E
- Proficient in data analysis, numerical computation, structural analysis and technical computing using MATLAB, MS EXCEL
- Ability to work well in a group or as an individual also. Even received the **best project award** for undergraduate group project (**Project Even Appreciated by National News Paper**)

EDUCATION:

Master of Science in Mechanical Engineering (2010 to Present)

The University of Texas at Arlington, Arlington, Texas, USA

Thesis: Mitigation of Hot-Spots in High-End Microprocessors Using Bulk and Thin Film Thermoelectric Coolers

Courses: Thermal Conduction, Control System Components, Introduction to Robotics, Computational Techniques Electronics Packaging, Engineering Analysis, Structural Dynamics, Finite Element Methods and Analytic Methods Engineering

Expected Graduation: Fall 2012

CGPA: 3.625/4.0

Bachelor of Engineering in Mechanical Engineering (2005-2009)

M S Ramaiah Institute of Technology, Bangalore, Karnataka, India

(Affiliated to Visveswaraiya Technological University, Belgaum, Karnataka, India)

Result: First Class with Distinction (Aggregate 76.325%), B.E with honors

TECHNICAL SKILLS:

- **Engineering:** PRO/ENGINEER, ANSYS Workbench, ICEPAK, Autodesk Inventor, AutoCAD Mechanical, ESPRIT, ANSYS Classic, Solid Works
- **Mathematics:** MATLAB
- **Programming Language:** C Programming
- **Office:** MS Word, MS Power Point, MS Excel, MS Project

RESEARCH AND PROJECT:

Graduate Research

- **Removing the Hot-Spots in High Power Devices Using the Thermoelectric Cooler (TEC) and Micro Heat Pipe:** Due to localized high heat fluxes, hot-spots are created in silicon chips and cooling of the hot-spots is one of the major thermal challenges in today's integrated circuit (IC) industry as uniform heating is highly desired. In this research an innovative technique to cool the hot-spot in silicon chip and maintain the uniform heating was presented and thermal analysis was done.
- **Structure analysis of Flip Chip Package with and without Embedded Micro Thermoelectric Cooler (MTEC) for hot spot cooling (On Progress):** Implementation of thin film thermoelectric (TFTEC) in flip chip package is widely used to remove the hot-spots. In this research structure and thermal analysis was done in with thin film thermoelectric cooler embedded in various components of flip chip package and even flip chip without thin film thermoelectric cooler embedded in it (conventional chip package).

Graduate Robotics Project: IBM 7535 Robot was programmed for pick and place operation.

Undergraduate Project: Solar Powered Wheel Chair: Manual Wheel Chair was modified to Solar Powered Wheel Chair by adding DC motors, Lead-acid Battery, Solar Panel and Switches.

PUBLICATIONS

Agat Hirachan, Derege Agonafer, "Removing the Hot-Spots in High Power Devices using the Thermoelectric Cooler and Micro Heat Pipe", IMECE-2012 Conference at Houston, Texas (Paper accepted for publication)

AWARD:

EMNSPC Scholarship for Fall Semester 2012

The **Best Project Award** for Final Semester Project in B.E

Project appreciated by **National Newspaper** (TIMES OF INDIA)

OTHER ACADEMIC QUALIFICATION:

Arkansas Tech University, Russellville, Arkansas, USA

Spring 2010

Courses Taken: Project Management, Organizational Communication and Workshop in Advanced Nuclear Reactors