

Bensely Albert, Ph.D.

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Objective

To be an active member of a World Class Research Establishment/Laboratory.

Profile

- Working as a Marie Curie Researcher
- Accomplished lecturer and dedicated scholar
- Reviewer for the international journals: *Materials Science and Engineering A*, *Industrial & Engineering Chemistry Research* and *Materials & Design*.
- Demonstrated ability to clarify difficult concepts and to inspire students
- Received consistently glowing evaluations from students and supervising administrators
- My first international journal titled “Enhancing the wear resistance of case carburized steel (En 353) by cryogenic treatment.” (*Cryogenics*, Volume 45, Issue 12, December 2005, Pages 747-754) was ranked 6th in the top 25 hottest articles in *Cryogenics* during January to March 2006, ranked 20th during April to June 2006 and finally ranked 21st during July to September 2006.
- Core competencies in Semiconductor materials, Cryogenic Engineering, Cryogenic Treatment to Materials, Tribology, Material characterization at room and cryogenic temperatures, Synthesizing Nano particle, Nanofluidic Heat transfer, Sloshing Dynamics in cryogenic propellant tanks, Natural fiber composites for HTS, Thermal management in electronic processor, Porous media heat transfer and research project management.
- Born on 12th August 1978
- English Proficiency: TOEFL iBT Score (August 2007): 88
- Marital Status: Married
- Citizenship: India
- Countries Lived: India, USA, Greece

Formal Education

Ph.D. Mechanical Engineering, 2007

Area: Cryogenic Treatment to Materials

College of Engineering Guindy, Anna University, India

Dissertation: "An experimental investigation on the behavior of cryogenically treated En 353 steel.

Course work undergone:

1. Tribology in Design
2. Applied Materials Engineering
3. Composite Materials and Mechanics
4. Advanced Finite Element Analysis

M.E. Thermal Engineering, 2000

Karunya Institute of Technology, Bharthiar University, India, **CGPA: 8.6/10**

First Class with Distinction

Dissertation: "Design of a device for testing cryogenic gas bottles (Helium)" done at Liquid Propulsion System center, Indian Space Research organization (ISRO).

B.E. Mechanical Engineering, 1999

Karunya Institute of Technology, Bharthiar University, India, **70.4%**

First Class

Dissertation: "Coolant requirement for testing Altitude orbit correction Satellite (AOCS) Engine" done at Liquid Propulsion System center, Indian Space Research Organization (ISRO).

Professional Experience

Marie Curie Researcher

(01 May 2009- till date)

Aristotle University of Thessaloniki, Greece

Working in European project titled "Promoting and structuring a multidisciplinary academic-industrial network through the heteroepitaxial growth characterisation and applications of 3C-SiC on hexagonal substrates".

Lecturer**(04 December 2003-05 May 2008)****College of Engineering Guindy, Anna University, India**

- Taught Thermal Engineering, Engineering Mechanics, Kinematics of Machines, Total Quality Management, Operations Research, Engineering Graphics, Measurements and Controls at undergraduate level
- Taught courses like Instrumentation for Thermal systems, Cryogenic Engineering at post graduate level
- Prepared and scored student exams, tutored and advised students including special needs student
- Supervised several postgraduate (10) and undergraduate students in project work.

Teaching Research Associate**(18 July 2001- 03 December 2003)****College of Engineering Guindy, Anna University, India**

- Instructed both at undergraduate level and post graduate level
- Handled Laboratory classes like Thermal Engineering Laboratory and workshop Practice
- Instrumental in setting up a state of art Cryogenic Treatment facility at Anna University-Amount sanctioned -Rupees 8300000 by Department of Science and Technology, India.

Lecturer**(01 December 2000 -17 July 2001)****P.E.T. Engineering College, India.**

- Lectured on Engineering Economics, Thermal Engineering, Engineering Mechanics at undergraduate level

Significant Publications

INTERNATIONAL JOURNAL

- **A.Bensely**, A.Prabhakaran, D.Mohan Lal, G.Nagarajan, “Enhancing the wear resistance of case carburized steel (En 353) by cryogenic treatment.” **Cryogenics**, Vol. 45, Is.12, December 2005, Pages 747-754

- **A. Bensely**, S. Stephen Jayakumar, D. Mohan Lal, G. Nagarajan ,A. Rajadurai “Failure investigation of crown wheel and pinion:” **Engineering Failure Analysis**, Volume 13, Issue 8, December 2006, Pages 1285-1292.
- **A.Bensely**, Senthilkumar D., Mohan Lal D., Nagarajan G. and Rajadurai A.(2007) ‘Effect of cryogenic treatment on tensile behavior of case carburized steel-815M17’, **Materials characterization**, Vol.58, pp. 485-491.
- **A.Bensely**, S. Venkatesh, D. Mohan Lal, G. Nagarajan, A. Rajadurai, Krzysztof Junik, “ Effect of cryogenic treatment on distribution of residual stress in case carburized En 353 steel”, **Materials Science and Engineering: A**, Vol.479, Is.1-2, April 2008, pp.229-235.
- A. Joseph Vimal, **A. Bensely**, D. Mohan Lal, K. Srinivasan, “Deep Cryogenic Treatment Improves Wear Resistance of En 31 Steel”, **Materials and Manufacturing Processes**, Vol.23, Is. 4, April 2008 , pp. 369 – 376.
- S. Harish, D. Peter Michael, **A. Bensely**, D. Mohan Lal, A. Rajadurai, “Mechanical Property Evaluation of Natural fiber Coir Composite”, **Materials Characterization**, Volume 60, Issue 1, January 2009, Pages 44-49
- S.Harish, **A. Bensely**, D. Mohan Lal, A. Rajadurai, Gyöngyvér B. Lenkey, “Microstructural study of cryogenically treated En31 bearing steel”, **Journal of Materials Processing Technology**, Volume 209, Issue 7, 1 April 2009, Pages 3351-3357
- **A.Bensely**, L. Shyamala, D. Mohan Lal, G. Nagarajan, A. Rajadurai, Krzysztof Junik, “Fatigue behaviour and fracture mechanism of cryogenically treated En353 steel”, **Materials & Design**, Volume 30, Issue 8, September 2009, Pages 2955-2962
- **A. Bensely**, Pete Paulin, G. Nagarajan, and D. Mohan Lal, Dimensional Stability in Cryogenic Treatments, **Gear Solutions**, Vol.7, No:76, 2009 pp 49-52, 58
- S. Harish, L. Godson Asirvatham, B. Jefferson Bose and **A. Bensely**, Experimental analysis of parallel plate and crosscut pin fin heat sinks for electronic cooling applications, **Accepted on July 2009** for publication in journal **Thermal Science**.

- D. Peter Michael, S.Harish, **A. Bensely**, D. Mohan Lal, A. Rajadurai, “Tensile, Flexural, Impact properties of Human Hair and Glass fiber Composites”, **Malaysian Polymer Journal**
- P.Elayiaraja, S.Harish, Wilson Jesudhasan, A.Bensely, D.Mohan Lal, “ Experimental Investigation on Pressure Drop and Heat Transfer Characteristics of Copper Metal Foam Heat Sink”, **Experimental Heat Transfer**.

INTERNATIONAL CONFERENCE

- A.Joseph Vimal, **A.Bensely**, T.D.A. Joel, D.Mohan Lal, “Thermal Stress Analysis of Cryo-Treated Bearing Steel”, Fifth International Congress on Thermal Stresses, pp.1-4, June 8-11, 2003, USA.
- A.Joseph Vimal, **A.Bensely**, D.Mohan Lal, “Residual Stress Analysis of Cryogenic Treated Cutting Tools”, Third International Conference on Cryogenics and Refrigeration, pp.1-4, Oct. 28- Nov.01,2003, China.
- A.Prabhakaran, **A.Bensely**, G.Nagarajan, D.Mohan Lal, “Effect Of Cryogenic Treatment On Impact Strength Of Case Carburized Steel-En 353”, International Mechanical Engineering Conference, pp.1-6, December 5-8, 2004, Kuwait.
- J.D.Darwin, S.K.Ramesh, **A.Bensely**, D.Mohan Lal, G.Nagarajan, “Influence of cryogenic treatment on the wear resistance of piston ring materials”, International Conference on Manufacturing Science and Technology, August 28-30,pp.357-360. 2006, Malaysia.
- **A.Bensely**, S.Venkatesh, D.Mohan Lal, G.Nagarajan, A.Rajadurai, Jim Boland “Determination of poisson’s ratio of cryogenically treated case carburized steel (En 353) by using ultrasonic technique”, International Conference on Manufacturing Science and Technology, August 28-30, pp.361-364, 2006. Malaysia.
- S. Angel Dharshini. S, Victor Paul, L. Godson Asirvatham, **A. Bensely**, “Heat and Mass transfer Study in the Spray Drying of Tomato Juice”, Proceedings of the 5th WSEAS International Conference on Heat and Mass Transfer, Jan. 25-27, 2008, pp.156-161. Mexico.
- Joseph Daniel, Nandigana V.R.Vishal, **A. Bensely**, S.Iniyan, “Evaluation of the Significant Renewable Energy Resources in India Using Analytical Hierarchy

Process”, Proceedings of 19th International Conference on Multiple Criteria Decision Making MCDM for Sustainable Energy and Transportation Systems, Jan.7-12, 2008, New Zealand (Selected for Publication).

- M.Arockia Jaswin, M.Bakianathan, **A. Bensely**, D. Mohan Lal, “Influence of cryogenic treatment on dimensional stability of En 52 and 21-4N valve steels”, Proceedings of the International Conference on Digital Factory, ICDF 2008, August 11-13, pp.859-863, 2008
- M. Yuvarajan, D. Suresh, K. Udayakumar and S. Usa, **A. Bensely** and D. Mohan Lal, Behavior of LN₂/Paper Composite Insulating Material under AC, Standard and Non-standard Lightning Impulse Voltage, Conference on Electrical Insulation Dielectric Phenomena (CEIDP 2008), CANADA, October 26-29, pp.641-644, 2008.

Invited Lectures

- Cryogenics & Industrial Applications at National Institute for Technical Teachers Training and Research Institute, Taramani, Chennai, India
- My research at Anna University at Indian Institute of Technology (IIT) Kanpur, India on May 16, 2007.
- Cryogenic treatment to materials at “300 Below, Inc., Decatur, Illinois, USA on June 30, 2008.

Computational Skills

Basic level of knowledge in ANSYS, AUTOCAD, FLUENT, MS Office

Professional Training Undergone

- Workshop on alternative Refrigerants and Cycles at Anna University, Chennai, 19-21 Dec 2001
- School on Cryogenics at Nuclear Science Centre, New Delhi, 4-9 Feb 2002
- Effective Classroom Management at Anna University, Chennai, 15-16 Feb 2002
- IT-Enabled Design and Manufacturing at AU-FRG, Anna University, Chennai, 3-4 May 2002
- Advanced Course on “Fatigue and Fracture Behavior of Components and Structures at Structural Engineering Research Centre, CSIR, Chennai, 12-14 Feb 2003

- Failure Analysis of Industrial Components at Department of Metallurgical Engineering , IIT, Chennai, 14 March 2003
- In plant Training on Heat Treatment at Ashok Leyland, Ennore, Chennai, 15-16 March 2003
- Quality Control and Reliability Engineering at Anna University, Chennai, 7-12 June 2004
- Instrumentation for Thermal Analysis at National Institute of Technology, Tiruchirapalli, 30 April 2005
- International workshop on Nano Science and Technology at Anna University, Chennai, 13-17 February 2006
- Workshop on Effective Teaching at Anna University, Chennai, 16 march 2006
- Training Programme on Cryogenic Air Sepaeration-2006 at Cryogenic Engineering Centre, IIT,Kharagpur, 21-26 March 2006
- Workshop on Cryogenic Science& Technology in India: Present and Future at Inter University Accelerator Centre, New Delhi, 10-11 April 2006
- SPSS Package for research analysis at Anna University, Chennai, 8 December 2006
- Fundamentals of Nanoscience and technology, Anna University, Chennai, 18-31 January 2007
- Materials for Biomedical Applications at Centre for Development of Technical Education, IIT,Kanpur, 7-11 May 2007
- Ultra Fine Grained Materials and Nanocomposites at Centre for Development of Technical Education, IIT,Kanpur, 12-16 May 2007
- Visited a cryogenic treatment company named 300 Below, Inc., Decatur, Illinois, USA ,June 30- July 01,2008.
- 3rd International Summer School on “Nanosciences & Nanotechnologies, Thessaloniki, Greece ,11-17 July 2009

Projects completed under my guidance

- Development of cryogenic composite insulators using Human Hair, Banana, Sisal, Coir fibers for high temperature superconducting transformer.

- Influence of cryogenic treatment on the mechanical properties of AISI M2 tool steel.
- Preliminary Sloshing studies in cryogenic tanks of space launch vehicles using CFD tool.
- An experimental investigation to enhance the heat transfer in heat sink using Porous media (Copper Metal foams) for the Processor of computers.
- A CFD analysis on the heat sink for the Processor of computers-Porous and solid fins.
- Oil and wear debris analysis of reciprocating hermetically sealed compressor used in domestic refrigerators.
- Preparation of nanofluids through chemical reduction method-Preliminary work

International Scientist/Collaborators supported the studies

- Dr.Jim Boland- Chief Scientist of CSIRO Exploration & Mining, AUSTRALIA
- M.Sc.Eng. Krzysztof Junik , Institute of Materials Science and Applied Mechanics ,Wroclaw University of Technology, POLAND
- Dr. Gyöngyvér B. Lenkey Deputy Director. Bay Zoltan Institute for fundamental Research, HUNGARY
- Dr.Randall F. Barron-Professor Emeritus, Louisiana Tech University, USA.
- Dr Paul C McDonald. School of Engineering Sciences University of Southampton University Road, Southampton, UK.

Professional Membership

Member of the American society of Heat Refrigeration and Air-conditioning Engineers (ASHRAE).

Other Interests

Playing Soccer and Traveling

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