CURRICULUM VITAE

Dr. B. S. Akila

House No 18, 12th Cross Street
60 Feet Road, J.C Nagar,
Kurubarahalli, Mahalakshmipuram (post)
Bengaluru, Karnataka-560086
Mobile No. +91-9159343377
Email : **akila.bspu@gmail.com**

OBJECTIVES

To render my best services towards the field of Physics and to maintain my best by consistent learning and adaptability and looking for well growth and challenging opportunities to exploit the inner talent in the best working environment.

EDUCATIONAL QUALIFICATION

Educational Qualification	University/ Board	Year of passing	CGP/ Percentage
Ph.D	Pondicherry University	2020	Highly commended
Integrated M.Sc Physics	Pondicherry Central University	2010	6.5
12th Std	Tamil Nadu Secondary School Education	2005	77 %
10th Std	CBSE(Kendriya Vidyalaya)	2004	63.6%

TEACHING EXPERIENCE

- Have handled classes for M.Sc. physics and M.tech. Green Energy Technology while pursuing Ph.D at Pondicherry University.

AREAS OF INTEREST

- Condensed matter physics
- Electromagnetic theory
- Atomic and molecular physics
- Electronics, Nuclear physics, Laser.

RESEARCH EXPERIENCE

Ph.D. Research

The title of the thesis is "**Surface texturization, antireflection coating and their optical reflectance studies of crystalline silicon substrate for solar cell applications**". In this, I worked to improve the reduction of surface reflectance of mono-crystalline silicon solar cell using industrially processes and hence further pave the way to increase the efficiency of commercial Silicon solar cell. In order to achieve that I choose the industrially viable anisotropic etching for surface texturization and followed by spin coating of antireflection coating. In the first step of etching we reduced the reflection from 11.2% to 10.76% in the spectral region of 300nm to 1100nm. This work was published in **Sensors and Actuators A: Physical** of impact factor 3.4. And further, application of antireflection coating resulted in lowest reflection of 5.3% in the UV region and 3.3% in the absorption spectral range of Si. This work is patented (**Patent No: 383512**). Finally the reflectances of this processed wafer were measured using polarized light and few interesting results were obtained. During this research work I used characterization techniques like UV-near IR spectroscopy, images techniques like SEM, FESEM, ZETA 3D-Optical profiler, solar simulator and quantum efficiency measurement.

M.Sc. THESIS

The title of the thesis is "**Electrical Properties of drawing lead pencils that we use in daily life**". The aim of the project was to study the structural and electrical transport of lead pencils available in market. For better understanding of the properties, we mixed 25% of the magnetic material ($COFe_2O_4$) using lead pencil material as matrix. X-ray Diffraction (XRD), Thermo-Gravimetric Analysis (TGA) and conductivity (AC/DC) techniques were carried out to obtain fundamental information of the material. Experimental result confirmed the semi metallic character of the pencil with conductivity in the metallic range and also finite band gap in the material.

PUBLICATIONS

- **B. S. Akila**, K. Vaithinathan, T. Balaganapathi, S. Vinoth and P. Thilakan. Investigations on the correlation between surface texturing histogram and the spectral reflectance of (100) Crystalline Silicon Substrate textured using anisotropic etching, Sensors and Actuators A: Physical, 263 (2017) 445-450.
- Chiranjeev Das**, B.S. Akila,** K.B. Prabhakar, and R.N. Bhowmik, Electrical Properties of drawing lead pencils that we use in daily life. Proceedings of the 54th DAE Solid State Physics Symposium (2009)

PATENT

- Patent entitled as "preparation of wide band TiO2 antireflection coating on silicon solar cells"**. Patent No: 383512; application no. 824/CHE/2014.**

COMPUTER SKILLS

- IBM Certificate course in "Introduction to Programming through C".
- FORTRAN, C++
- Microsoft office

CONFERENCES/ SEMINARS ATTENDED

- Presented a poster at **Fourth International Conference on Frontiers in Nanoscience and Technology (COCHIN NANO-2016, Feb. 20-23), Cochin University of Science & Technology** ***entitled as*** **"Investigations on the anisotropic etching process and the pyramid distribution for obtaining least reflectance on silicon solar cell"**
- Presented a poster at **National conference on advanced functional materials (NCAFM-2014) Bharathiar University** entitled as **"sub-micron texturization and characterization of silicon wafers using anisotropic etching".**
- Workshop on "**Einstein and his impact on science**" organized by dept of physics, Pondicherry University.
- Lecture - Workshop in Mathematics, organized by Ramanujam School of Mathematics and Computer Science.
- **"Reflections 2010 it's more than what you learn"** conducted by dept. of physics, Pondicherry University.

EXTRA CURRICULAR ACTIVITIES

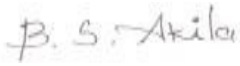
- Volunteered in science week celebrations held every year in Pondicherry Central University.
- Participated in **fun school experiments** conducted in Dept. of Physics, Pondicherry Central University

PERSONAL DETAILS

Date of Birth : 26-11-1986
Marital Status : Married
Languages known : English, Tamil and Hindi

Date:
Place:

Signature



(B. S. AKILA)