

## CURRICULUM VITAE

**Dr. A. N. DHINAA, Ph.D.,**

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### **OBJECTIVE**

Seeking a challenging teaching and research career, that will enable me to conduct research in the frontier areas of Animal Biotechnology, Molecular Biology, Clinical Biochemistry and Phytochemical to contribute the knowledge with results of high impact and quality.

### **ACADEMIC QUALIFICATION**

DEGREE	DISCIPLINE	NAME OF THE UNIVERSITY	YEAR OF PASSING	COURSE EXPOSURE
Ph.D	SCIENCE&HUMANITIES	ANNA UNIVERSITY	NOVEMBER 2010	BIOPHOTONICS NONLINEAR OPTICS,
M.Sc.	BIOCHEMISTRY	BHARATHIAR UNIVERSITY	APRIL 2005	GENETIC ENGG. BIOSTATISTICS, BIOALAYTICAL
B.Sc.	BIOCHEMISTRY	UNIVERSITY OF MADRAS	OCTOBER 2001	MICROBIOLOGY, CHEMISTRY

### **RESEARCH PROJECT**

**Ph.D Thesis** : **OPTICAL Z-SCAN TECHNIQUE FOR MEASUREMENT OF BIOANALYTES**

**Research Supervisor** : **Prof. P.K.Palanisamy**, Chairman,  
Faculty of Science and Humanities,  
Anna University, Chennai.

Optical Z-Scan technique for measurement of bioanalytes is scientifically a new approach. Optical nonlinear nature of bioanalytes is utilized to measure their concentration. Optical nonlinearity results in nonlinear refractive index and the same is measured by Z-Scan technique using laser as source of excitation. Using these nonlinear refractive index values the amount of bioanalytes in blood are obtained. In this project, measurement of seven different bioanalytes in four different profiles has been reported.

**M.Sc. Dissertation** : **Screening Of antitumor activity of leaf extract of *Alstonia Scholaris* and *Solanum Trilobatum* On cancer cell line (HEp-2) - An In Vitro Study**

**Supervisor** : **Dr. G. Jayanthi**, Head, Department of Biochemistry, Kongunadu College of Arts and Science, Coimbatore.

The cytotoxic effect and anti tumor property were found in *Alstonia Scholaris* (AS) and *Solanum Trilobatum* (ST) leaf extracts in both aqueous and methanolic preparation. The cytotoxic effect is relatively high in methanolic extracts for AS and ST leaves when compared to that of aqueous extracts. The cytotoxic effect is high in HEp-2 cell line when compared to that of normal cell line.

## EXPERTISE

- ◇ **Molecular Biology:** Isolation of Plasmid DNA and Genomic DNA, PCR Technique (Methyl specific PCR, Realtime-PCR, RT-PCR), Western blot analysis, Restriction analysis of DNA, Preparation Of Competent E.Coli – Transformation.
- ◇ **Clinical Biochemistry:** Determination of bioanaytes and Enzymes Level in Serum , Analysis of Urinary Calculi, Determination of CSF Glucose, Protein and Chloride Level.
- ◇ **Bioanalytical Techniques:** Colorimetric Estimations, chromatographic Techniques, Electrophoretic Techniques.
- ◇ **Immunology:** Agglutination Tests, Immunoelectrophoresis, Immunodiffusion Methods, ELISA and Radioimmunoassay (RIA).
- ◇ **Microbiology:** Staining Techniques, Microbial Culture Techniques.
- ◇ **Biotechnology:** Animal Tissue Culture (primary cell culture) and Plant Tissue Culture (Callus Tissue).
- ◇ **Handled animals:** Guinea pig, Rabbit and White mouse for animal studies.
- ◇ **Water Analysis:** Total Dissolved Solids, Electrical Conductivity, Turbidity, Hardness, Alkalinity, Chloride, Fluoride and Iron levels.
- ◇ **Laser Handling:** Experience in handling Ar ion, He-Ne, and Nd-YAG Lasers and related optical components.
- ◇ **Holographic Techniques:** Recording and reconstruction of reflection and transmission holograms.
- ◇ **Nonlinear Optical Techniques:** Z-Scan, Optical limiting, Holographic grating formation.
- ◇ **Synthesis of Nanoparticles:** Gold and silver nanoparticles by green method.

## WORKING EXPERIENCE/RESEARCH

- ◇ Worked as research scholar, in the project entitled "Optical Z-Scan technique for measurement of Bioanalytes" in the Faculty of Science and Humanities, Anna University, Chennai, during February 2006- November 2010.
- ◇ Worked as a Junior Research Fellow under DST sponsored Project in the Faculty of Science and Humanities, Anna University, Chennai, during November 2007- November 2009.
- ◇ Worked as Quality Controller cum Supervisor in ART RO SYSTEMS Tiruchengode, Tamil Nadu, India (ISI Certified packaged Drinking Water Company) during 2001-2003.

## RESEARCH INTEREST

- ◇ Molecular Biological aspects of interested protein
- ◇ Anti cancer activities using light radiation, synthetic compound and phytochemical
- ◇ Interaction of light with tissue, Cell line studies
- ◇ Optical properties of natural pigments
- ◇ Nanoparticles for biological applications

## PAPERS PUBLISHED IN PEER REVIEWED JOURNALS

1. **A.N.Dhinaa**, and P.K.Palanisamy "Z-scan technique: To measure the total protein and albumin in blood", *Journal of Biomedical Science and Engineering*, 2010, 3, 285-290.
2. **A.N.Dhinaa**, and P.K.Palanisamy "Optical nonlinearity in measurement of urea and uric acid in blood", *Journal of Natural Science*, 2010, 2(2), 106-111.
3. **A.N.Dhinaa**, and P.K.Palanisamy, "Z-scan technique for measurement of total cholesterol and triglycerides in blood ", *Journal of Innovative Optical Health Sciences*, 2009,2(3)295-301.
4. **A.N.Dhinaa**, Ahmad Y.Nooraldeen, K.Murali and P.K.Palanisamy, "Z-scan technique as a Tool for the Measurement of Blood Glucose", *Laser Physics*, 2008, 18(10)1212-1216.
5. **A.N.Dhinaa**, R.Jagan, K.Sivakumar and K.Chinnakali, "1,3-Dicyclohexyl-1-(4-nitrobenzoyl)urea", *Acta Crystallographica Section E*, 2010, E66, o1291.
6. Ahmad Y.Nooraldeen, **A.N.Dhinaa** and P.K.Palanisamy, "Nonlinear optical properties of acid orange 10 dye by Z-scan technique using Ar<sup>+</sup> laser", *Journal of nonlinear optical physics and materials*, 2007, 16(3)359-366.
7. P. Srinivasan, Ahmad Y. Nooraldeen, T. Kanagasekaran, **A.N.Dhinaa**, P. K. Palanisamy, and R. Gopalakrishnan "Z-Scan Determination of the Third-Order Optical Nonlinearity of L-Asparaginium Picrate (LASP) Crystal," *Laser Physics*, 2008,18(6)790–793.

## ACKNOWLEDGED JOURNAL

- ◇ M. Vijay Srinivasan and P. Kannan “Photo-switching and nonlinear optical behaviors of center linked-bent-core azobenzene liquid crystalline polymers,” *Journal of Materials Science*, DOI 10.1007/s10853-011-5423-x .

## COMMUNICATED JOURNALS

- ◇ **A.N.Dhinaa**, P.K.Palanisamy and K.Murali, “Realization of all optical AND-OR logic gates using Z-scan method,”

## WORKSHOP/SEMINAR - PARTICIPATED/ATTENDED

- ◇ Attended the National workshop on “Epigenetics & Gene Expression” and acquired hands-on training from 21<sup>st</sup> February to March 3<sup>rd</sup>, 2011 at Department of Endocrinology, Taramani Campus, University of Madras, Chennai-113
- ◇ Participated in national level symposium (NLS-19) Measurement of total protein and albumin using Z-Scan technique. Held at RRCAT, Indore, India.
- ◇ Participated in national level symposium (NLS-09) Nitrogenous waste measurement in blood by Z-scan technique. Held at Bhabha Atomic Research Centre, Trombay, Mumbai, India.
- ◇ Participated in national level symposium (NLS-08) Lipid measurement based on nonlinear refractive index. Held at Laser Science and Technology Centre, (LASTEC), Delhi, India.
- ◇ Participated in international level Conference (Photonics 2008) Measurement of lipids in serum by Z-scan Method. Held at IITDelhi, India.
- ◇ Participated in national level symposium (NLS-07) Measurement of Blood Glucose by Single Beam Z-scan Method. Held at M.S. University of Baroda, Vadodara, Gujarat, India.
- ◇ Attended the Advanced level International workshop on Nanoscience and Technology on February 2009, held at Anna University, Tamil Nadu, Chennai, India.
- ◇ Attended the “Chennai Science festival 2009” on February 2009, held at Anna University, Tamil Nadu, Chennai, India.
- ◇ Attended the Conference on Crystal growth in Science and technology on October 2010, held at Anna University, Chennai, India.
- ◇ Attended the One Month Training at KSR College of Technology in Molecular Biology, Tiruchengode, Tamil Nadu, India.
- ◇ Participated in State level seminar at KSR College of Arts & Science on Molecular Biology Update, Tiruchengode, Tamil Nadu, India.

## PERSONAL INFORMATION

Date of birth : 1<sup>st</sup> June 1980.  
Sex : male.  
Nationality : Indian.  
Marital status : single.  
Languages Known : English, Tamil  
Father's name : A.NATARAJAN  
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## REFERENCES

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## DECLARATION

I here by declare that all the information provided by me is true to the best of my knowledge.

**A.N.DHINAA**