



# DR. A. ANTONY RAJ

Assistant Professor of Physics

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## PROFILE INFO

I am enthusiastically dedicated to ensuring that the wonders of physics are both accessible and captivating for all students and I aim to establish a dynamic and supportive educational setting.

## DISTINCTIONS

- Rev. Dr. Injackel Medal - IV for proficiency in M.Sc Physics
- Best paper and presentation award (National Conference on Nanophotonics) at Department of Physics, Bharathidasan University, Trichirapalli, India March, 6-7, 2014.
- Best tutor award by Loyola Empowerment and Outreach Programme

## RESEARCH INTEREST

- Organic Crystals for terahertz (THz) emission,
- Nanomaterials synthesis and characterization.
- organic nanomaterials for opto-electronics applications

## EXAMS QUALIFIED

- Tamil Nadu State Eligibility Test (TNSLET) for Assistant Professor



## EDUCATION

**2015** Ph.D in Physics

**2011** University of Madras

DEVELOPMENT OF NLO ACTIVE AND POTENTIAL TERAHERTZ CRYSTALS OF ORGANIC STILBAZOLIUM DERIVATIVES EMPLOYING BENZENESULFONATE COUNTER IONS

Highly commended

**2011** MSc Physics

**2009** Loyola College (Autonomous)

Affiliated to University of Madras, Chennai

**GPA:** 8.03/10

**2009** BSc Physics

**2006** Loyola College (Autonomous)

Affiliated to University of Madras, Chennai

**GPA:** 8.00/10



## TEACHING EXPERIENCE

**PRESENT** St. Joseph's College (Autonomous)

**2018** Affiliated to Bharathidasan University, Tiruchirappalli, Tamil Nadu

**2018** Loyola College (Autonomous)

**2016** Affiliated to University of Madras, Chennai, Tamil Nadu

**2016** Academy of Maritime Education and Training (AMET)

**July 2015** Deemed to be University, Kanathur, ECR road, Chennai, Tamil Nadu

## ACADEMIC ACTIVITY

M.Sc. Project guided: 10  
coordinator- Stephen Hawking Innovation  
Club

## MEMBERSHIP IN PROFESSIONAL BODIES

Life Member - Indian Laser Association

## JOURNAL REVIEWER

Journal of molecular structure  
Materials today proceedings

## BOOKS PUBLISHED

1. Investigation on the growth and characterization of potential organic terahertz crystals of DAST, DSMOS and DASC, Dr. R. Gunaseelan, Dr. A. Antony Raj and Dr. P. Sagayaraj, ISBN: 9-781947-099265

## RESEARCH CUM ADMINISTRATIVE SUPPORT EXPERIENCE

- Team member of the document preparation committee for the University Grants Commission—College for Potential Excellence (UGC-CPE) program at Loyola College.
- Team member of the document preparation committee for reevaluating the DST-SIRO award at Loyola College.
- Team member of the proposal preparation committee for financial assistance from UGC, DRDO, DST-SERB, and UGC-DAE CSR at Loyola College.
- Team member of the document preparation committee for getting 175% income tax exemption (section 35 (1) of the Income-tax Act, 1961) in the case of University, College or other institution at Loyola College.
- YRCS university coordinator, AMET University, kanathur, Chennai

## PEER-REVIEWED PUBLICATIONS

1. Investigation on growth of 4-N, N-dimethylamino-N'-methylstilbazolium p-chlorobenzene sulfonate: An efficient organic NLO crystal with potential THz properties R. Gunaseelan , A. Antony Raj , P. Sagayaraj, Optik, Volume 125, Year 2014, Pages 3791-3797.

2. Investigation on third order nonlinear optical, electrical and surface properties of organic stilbazolium crystal of 4-N,N-dimethylamino-N'-methylstilbazolium p-methoxybenzenesulfonate, Antony Raj , R. Gunaseelan , P. Sagayaraj Optical Materials, Volume 38, Year 2014, Pages 102-107.

3. Bulk size crystal growth, spectroscopic, dielectric and surface studies of 4-N,N-dimethylamino-4-N'-methylstilbazolium m-nitrobenzene sulfonate (DSMNS): A potential THz crystal of stilbazolium family, Antony Raj A , John Sundaram S , Gunaseelan R , Sagayaraj P, Spectrochemical Acta Part A: Molecular and Biomolecular Spectroscopy, Volume 149, Year 2014, Pages 957-964.

4. Structural and electrical properties of organic stilbazolium single crystal of DSCHS , John Sundaram S, Antony Raj A, Jerald Vijay R, Sagayaraj P , AIP Conference Proceedings, Volume 1731, Year 2016, pages 100004 (1-3).

## PEER-REVIEWED PUBLICATIONS

### RESEARCH PROJECT

Molecular design, synthesis, growth and characterization of a novel organic single crystal of DMOSC for THz Applications, SJC-Research Grant, Rs. 40000/-

### SEMINARS CONFERENCES, AND WORKSHOPS ATTENDED (IN NUMBERS)

32

### RESOURCE PERSON/GUEST LECTURES

1. Epsilon Physics Association inauguration-Guest lecture on physics for Future-Arasu College of arts and science for women, Karur.
2. Special Talk- Physics Competitive Examination: An insight, at St. Joseph's College, Trichy.
3. Special Talk: -Career Opportunities after B.Sc. Physics, Feynman problem solving club at St. Joseph's College, Trichy.
4. National level webinar -Research on stilbazolium crystal material overview Sir thiyagaraya college Autonomous, Chennai
5. Physics Competitive Examination: An insight-Holly Cross College, Trichy

5. In-situ microwave irradiation synthesis of ZnO-graphene nanocomposite for high-performance supercapacitor applications, R. Gunaseelan; V. Venkatachalam; A. Antony Raj, AIP Conference Proceedings, Volume 1942, Year 2018, Pages 140077 (1-4).

6. Synthesis, growth, crystal structure, thermal, linear and nonlinear optical analysis of new extended  $\pi$ -conjugated organic material based on methyl pyridinium compound of 4-(4-(dimethylamino) phenyl)buta-1,3-dienyl)-1-methylpyridinium p-styrenesulfonate hydrate Priya Antony, John Sundaram S, Jerald Vijay R, Antony Inglebert S, Antony Raj A, Dominique S, Tejaswi Ashok Hegde, Vinitha G, Sagayaraj P Journal of Molecular Structure, Volume 1196, Year 2019, Pages 699-706.

7. Investigations on solid-state parameters of third-order nonlinear optical Ni<sub>1-x</sub>Zn<sub>x</sub>Fe<sub>2</sub>O<sub>4</sub> nanoparticles synthesized by microwave-assisted combustion method Surendran P, Lakshmanan A, Priya S, Balakrishnan K, Rameshkumar P, Hegde T.A, Vinitha G, Ramalingam G, Antony Raj A, Applied Physics A: Materials Science and Processing, Volume 126, Year 2020, pages 257 (1-11).

8. Investigation on nucleation, growth and physical properties of low soluble 4-N, N'-dimethyl amino-4-N'-methylstilbazolium 4-aminotoluene-3-sulfonate crystal - A potential NLO material, John Sundaram, S, Antony Raj A, Jerald Vijay R, Jacob M, Sagayaraj, P. Journal of Molecular Structure, Volume 1241, Year 2021, Pages 130669 (1-12).

9. Investigations on Structural, Mechanical, Optical, Electrical, Third Order Nonlinear Optical and Antibacterial Activity of 4-Aminopyridine Monophthalate Single Crystal Sakthy Priya S, Balakrishnan K, Surendran P, Lakshmanan A, Geetha P, Rameshkumar P, Tejaswi Ashok Hegde, Vinitha G, Antony Raj A, Journal of Electronic Materials, Volume 50, Year 2021, Pages 291-302.

10. Investigation of Lithium Iodide Intercalated 2D-nanosheets for DSSC Applications, J. Babu, A. Antony Raj, J. Asghar, B. Arjun Kumar, Saravanan Sigamani, G. Ramalingam, International Journal of Renewable Energy Research, volume 12, year 2022, pages 1662-1669