

The American College, Madurai
FACULTY PROFILE

Name : **Dr. S. SANTHOSH KUMAR JACOB**

Designation : **Assistant Professor**

Department : **PHYSICS**

Date of Joining : **05.10.2020**

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jacobsanthosh37@gmail.com



I. Education Qualification:

Degree	Subject	College/University & Place	Year Completed
Ph.D.	Physics	Madurai Kamaraj University Tamil Nadu, India.	2020
M.Phil.	Physics	The Madura College, Madurai (Affiliated to Madurai Kamaraj University) Tamil Nadu, India.	2011
M.Sc.	Physics	The Madura College, Madurai (Affiliated to Madurai Kamaraj University) Tamil Nadu, India.	2007
PGDCA	Computer Application	Madurai Institute of Social Science (Affiliated to Madurai Kamaraj University) Tamil Nadu, India.	2006
B.Sc. (SPL.)	Physics	The American College, Madurai (Affiliated to Madurai Kamaraj University) Tamil Nadu, India.	2004

Specialization in Research:

- Thin Film, Powder extraction method

Research Interests:

- Semiconductor materials, Photovoltaic Cell

Any Other Work Experience:

Designation	Institution	Year – From (month/year) To (month/year)
Assistant Professor	Arul Anandar College, Karumathur, Madurai	August 2011 – September 2020
Assistant Professor	The American College, Madurai, Tamil Nadu, India.	5 th October 2020 – till date

Publications:

Total : 9 papers

International : 7 papers

National : 2 papers

Articles Published in International Journals: (Peer reviewed)

8

Unveiling the luminescence of α -Zn₂SiO₄ phosphor: Profound influence of sintering temperatures
P. Diana, S. Sebastian, D. Sivaganesh, C.S.A. Raj, **S. Santhosh Kumar Jacob**, T.H. AlAbdulaal,
Mohd Shkir

Radiation Physics and Chemistry 212 (2023) 111156 (Elsevier) (I.F. 2.9)

DOI: <https://doi.org/10.1016/j.radphyschem.2023.111156>

7

Improved optoelectronic properties of spray pyrolysis coated Zn doped Cu₂O thin films for photodetector applications

S. Santhosh Kumar Jacob, I. Kulandaisamy, I. Loyola Poul Raj, Ahmed A. Abdeltawab, Sayed Z. Mohammady, Mohd Ubaidullah

Optical Materials Vol. 116, (2021), 111086 (Elsevier) (I.F. 3.754)

DOI: <https://doi.org/10.1016/j.optmat.2021.111086>

6

Synthesis and characterization of the nano semiconducting material cadmium sulphide

S. Santhosh Kumar Jacob, S. Saravanana Kumar, R. Saravanan

Materials Science Forum Vol. 699 (2011)79 – 88(Trans Tech publications, Switzerland)

(I.F. 0.48)

DOI: <https://doi.org/10.4028/www.scientific.net/MSF.699.79>

5

Effect of Trisodium Citrate Concentration on the Structural and Photodiode Performance of CdO Thin Films

M. Ravikumar, S. Valanarasu, R. Chandramohan, **S. Santhosh Kumar Jacob** & A. Kathalingam,

Journal of Electronic Materials, Vol. 44 (2015) 2800 – 2806 (Springer) (I.F. 2.047)

DOI: [10.1007/s11664-015-3759-8](https://doi.org/10.1007/s11664-015-3759-8)

4

Improving the conductivity of cuprous oxide thin film by doping Calcium via feasible nebulizer spray technique for solar cell (FTO/ZnO/Ca-Cu₂O)

S. Santhosh Kumar Jacob, I. Kulandaisamy, S. Valanarasu, A. M.S. Arulanantham, Mohd. Shkir, A. Kathalingam, N. Soundaram

Materials Research Express, Vol. 6, No. 4 (2018) (IOP Science) (I.F. 2.025)

DOI: [10.1088/2053-1591/aafb18](https://doi.org/10.1088/2053-1591/aafb18)

3

Enhanced optoelectronic properties of Mg doped Cu₂O thin films prepared by nebulizer pyrolysis technique

S. Santhosh Kumar Jacob, I. Kulandaisamy, S. Valanarasu, A. M. S. Arulanantham, V. Ganesh, S. AlFaify, A. Kathalingam

Journal of Materials Science: Materials in Electronics, Vol. 30, No. 24 (2019)1 –11 (Springer) (I.F. 2.779)

DOI: [10.1007/s10854-019-01397-8](https://doi.org/10.1007/s10854-019-01397-8)

2

Investigation on structural, optical and photovoltaic properties of Barium doped cuprous oxide thin films

S. Santhosh Kumar Jacob, I Kulandaisamy , S Valanarasu , A M S Arulanantham , V Ganesh, MohdShkir, I.S. Yahia

Materials Research Express, Vol. 6, No. 11 (2019) (IOP Science) (I.F. 2.025)

DOI: [10.1088/2053-1591/ab485f](https://doi.org/10.1088/2053-1591/ab485f)

1

Sn Doping Effect on the Structural, Optical and Electrical Properties of Cu₂O Thin Film Prepared by Nebulizer Spray Technique

S. Santhosh Kumar Jacob, I. Kulandaisamy

Journal of Scientific Research and Reviews, IJSRR 2019, Vol.8, No.1, 3347-3359 (I.F. 6.1)

DOI: https://www.ijsrr.org/down_2219.php

Articles published in National Journals: (Peer reviewed)

1

Improving carrier transport in strontium- doped cuprous oxide thin films prepared by Nebulizer spray pyrolysis for solar cell applications

S. Santhosh Kumar Jacob, I. Kulandaisamy, S. Valanarasu, A. M. S. Arulanantham, V. Ganesh, Mohd Shkir & S. AlFaify

Indian Journal of Physics, Vol. 94 (2020) 1527 – 1535 (Springer) (I.F. 1.778)

DOI: 10.1007/s12648-019-01603-7

Conference / workshop / Seminar Presentations:

5

Electrical and Optical behaviors of Mn doped Cu₂O thin films by Nebulizer spray technique

S. Santhosh Kumar Jacob

International Conference on “Recent Trends in Solar Cells (ICRTSC)” Sponsored by TNSCST, 2023, Department of Physics and PG & Research Department of Chemistry, CPA College, Bodinayakanur on 12th & 13th January 2023.

4

Electrical and optical behaviors of Ag-doped Cu₂O thin films by Nebulizer Spray Technique

S. Santhosh Kumar Jacob

National Seminar on Technologically Important Crystalline and Amorphous Solids (TISCAS - 2018)

Kalasalingam (Academy of Research and Education), Deemed to be University, Krishnankoil – 626 126, Virudhunagar (Dt.), Tamil Nadu, India, 2nd & 3rd March 2018

3

Sn Doping Effect on the Structural, Optical and Electrical Properties of Cu₂O Thin Film Prepared by Nebulizer Spray Technique

S. Santhosh Kumar Jacob, I. Kulandaisamy

National Seminar on “Materials Science and Applications” (NSMSA - 2018),

Mother Teresa Women’s University, Kodaikanal, Tamil Nadu, India, July 2018

2

Electrical and optical behaviors of Zinc-doped Cu₂O thin films by Nebulizer Spray Technique

S. Santhosh Kumar Jacob, I. Kulandaisamy

International Conference on Recent Trends in Applied Science and Technology (ICRTAST - 2018)
Periyar University, Salem – 636 011, Tamil Nadu, India, August 2018

1

Structural, Electrical and optical characterization of CuO thin films prepared by Nebulizer Spray pyrolysis technique

S. Santhosh Kumar Jacob, I. Kulandaisamy

National Level Conference on Nano science and Nanotechnologies in the livelihood enhancement of common man (NSLECM - 2017)

Arul Anandar College, Karumathur – 625 514, Madurai District, Tamil Nadu, India, February 2017

Workshops/seminars/ Conference:

1. Participated in the State level seminar on “**Material Characterization Techniques - SLSMCT**”, organized by Department of Physics, **The Madura College, Madurai**, on 22nd December 2010.
2. Participated and presented a paper (oral) in the “**INDO – US workshop and International conference**” organized by department of Physics, **St. Joseph’s College** (Autonomous), Trichirappalli, from 12th to 14th, January 2011
3. Participated one day workshop on “**Physics concepts through Interactive Animation**” organized by Department of Physics, **The Madura College, Madurai**, on 25th February 2011.
4. Special lecture in the “**workshop for Science Teachers in Chellampatti Educational Union**” sponsored by Tamil nadu Science and Technology centre, Chennai, Organized by Arul Anandar Science and Society forum & Department of Physics, **Arul Anandar College, Karumathur**, Madurai District on 1,2 December 2011.
5. Participated One day UGC sponsored State Level seminar on “**Nano and Thin film Solar Materials**” organized by Indian Association of Physics Teachers, held at Department of Physics, **The Madura College, Madurai**, on 29th December 2011.
6. Resource Person in the “**National Science Mela 2012**” organized by Department of Religion and Value Education, **Arul Anandar College**, Karumathur, Madurai District on 16th to 18th March 2012.

7. Participated one day UGC sponsored “**National Colloquium for IQAC Coordinators on Best Practices in Higher Educational Institutes**”, organized by IQAC Arul Anandar College, Karumathur, Madurai District on 20th & 21st July 2012.
8. Participated one day state level on seminar on “**Research Avenues in Physics**” organized by Department of Physics, **Arul Anandar College**, Karumathur, Madurai District on 18th February 2013.
9. Participated one day state level Awareness on “**Non – Conventional and Renewable Energy Resources**” Sponsored by Ministry of New and Renewable Energy, Government of India, New Delhi, organized by Department of Physics in Collaboration with Department of Foundation Courses, **Arul Anandar College**, Karumathur, Madurai District on 27-28 November 2013.
10. Participated one day state level on seminar on “**Medical Instrumentation**” organized by Department of Physics, **Vivekananda College**, Tiruvedakam west, Madurai on 29th January 2015.
11. One day workshop on “**Materials Characterization Techniques**”, International Research Centre (IRC), 2nd February 2015, **Kalasalingam (Academy of Research and Education)**, Deemed to be University, Krishnankoil – 626 126, Virudhunagar (Dt.), Tamil Nadu, India.
12. Participated in National conference on organized by Internal Quality Assurance Cell (IQAC), **Arul Anandar College**, Karumathur, Madurai District on 22nd & 23rd March 2016. “**Academic Audit and Quality Enhancement in HEI’s**”
13. Guided a model during the sponsored by DST, Ministry of Science and Technology, New Delhi & Tamil Nadu “**National Science Meet 2017**” Science & Technology Centre, Chennai, organized by Department of Physics, **Arul Anandar College**, Karumathur, Madurai District on 27th to 29th January 2017.
14. Participated in National Conference on “**Advances in Astronomy and Space Technology (NCAAST - 2018)**”, **Arul Anandar College**, Karumathur – 625 514, Madurai District, Tamil Nadu, India.
15. Participated in International Conference on “**International Conference on Recent Trends in Physical Sciences**” organized by Department of Physics, **Arul Anandar College**, Karumathur – 625 514, Madurai District on 17th & 18th February 2022.
16. Participated in **Faculty Orientation Programme** organized by Internal Quality Assurance Cell (IQAC), **The American College**, Madurai on 20th September 2022

17. Participated in Workshop on “**Material Characterization Techniques**” organized by Department of Physics, **Kalasalingam Academy of Research and Education, Krishnankoil – 626 126** on 14th December 2022.
18. Participated in one day workshop on “**Art and Science of Methodical Scientific Writing & Publishing in a High Impact Journal**” conducted by IQAC and Office of the Dean Research, **The American College, Madurai** on 6th March 2023
19. Participated in One day National Level Faculty Online Workshop on “**UGC Guideship for Institutional Development Plan (IDP)**” Conducted by FDP Division, **ACT Academy, Kerala Unit** on 03.02.2024.
20. Participated in One day Faculty Orientation Seminar “**Transformative NAAC Reforms 2024**” on 13.02.2024 jointly organized by **ACT Academy, Kerala Unit and SKR & SKR Government college for women (Autonomous) Kadapa, Andhra Pradesh.**
21. Participated in International Level Faculty Workshop (online) on “**Innovative Teaching Methods for the 21st Century**” 06.03.2024, Organized by **FDP Division, ACT Academy, Kerala Unit.**

Faculty Development Programs (Online):

1. Attended one day Faculty development program on “**Current Trends in Physics**” organized by the Department of Physics, **Vivekananda College, Tiruvedakam west, Madurai, Tamil Nadu** held on 16th March 2021
2. Attended one day Faculty development program on “**Materials Engineering in Device Manufacturing**” organized by the Department of Physics, **KPR Institute of Engineering and Technology (KPRIET), Coimbatore, Tamil Nadu** held on 5th February 2022

Webinars attended:

1. Attended in the Webinar series on “**Conceptual and Applied Physics**” Organized by **R. K. University, Gujarat** held on 5 – 8 May 2020
2. Attended in the webinar on “**Micro and Nanotechnology and its applications**” Organized by Department of Physics, **GTN Arts College, Dindigul, Tamil Nadu** held on 4th May 2020

3. Attended in the webinar on “**International Workshop on Space Science**”, jointly organized by **Space Education and Research Foundation, Ahmedabad and Department of Physics, School of Science, RK University, Rajkot, India** during 18 -21 May, 2020.
4. Attended the National level webinar on “**Nano-Photonics**” held on 23rd June, 2020 through WebEx platform Organized by the Department of Physics, **Madonna Arts & Science College for women, Madurai.**
5. Attended in the National level webinar on “**The Exciting Astronomy: Electromagnetic Radiation from the Sky**” organized by the department of physics, **Madonna Arts & Science College for women, Madurai, on 13th July, 2020.**
6. Attended in the webinar on “**The Progress in Nano-composites for Environmental and Device Applications**” organized by the Department of Physics, **Arul Anandar College (Autonomous), Karumathur, Madurai Dist., Tamil Nadu** held on 05th August 2020
7. Attended the “**International Webinar on Recent Advancements in Solar Cell Technologies**” organized by the Department of Physics **Jayaraj Annapackiam College for Women (Autonomous), Periyakulam** on 12th March 2021
8. Attended in the webinar on “**Opportunities and Approaches to get National and International Fellowship**” organized by the Department of Physics, **Noorul Islam Centre for Higher Education, Kumarakoil, Kanyakumari District, Tamil Nadu** held on 5th June 2021
9. Attended in the webinar on “**NDLI user Awareness**” organized by the Daniel Poor Memorial Library, **The American College, Madurai District, Tamil Nadu** held on 25th June 2021
10. Attended in the webinar on “**Recent Trends in Energy Materials (RTEM - 2021)**” organized by the Department of Physics, **Arumugam Pillai Seethai Ammal College, Sivagangai District, Tamil Nadu** held on 14-15 July 2021
11. Attended in the webinar on “**Mobile Astronomy**” organized by the Department of Physics, **The American College, Madurai, Tamil Nadu** held on 28th July 2021
12. Attended in the webinar on “**Light Matter Interactions and Characterization Techniques**” organized by the Department of Physics, **St. Xavier’s College, Palayamkottai, Tamil Nadu** held on 19th August 2021

13. Attended “**Two day Online International Workshop on Nanomaterials for Clean Energy and Space Astronomy (IWNCESA - 2022)**” organized by Department of Physics and Astronomy Club of **Ethiraj College for Women in association with Indian Science Congress Association** on 22nd & 23rd February 2022

Conference/Workshops organized:

1. A one – day National workshop on “Computerized Physics experiments” organized by the Department of Physics (Satellite Campus), The American College, Madurai, Tamil Nadu, India on 05.09.2022
2. Two – days International conference on “Smart materials and Biomolecules” organized by the Department of Physics, The American College, Madurai, Tamil Nadu, India on 09.01.2023 and 10.01.2023
3. A one – day School programme “Way to Win” organized by the Department of Physics (Satellite Campus), The American College, Madurai, Tamil Nadu, India on 28.01.2023
4. Two – days International conference on “Recent Advances in Physics ICRAP’ 24” organized by the Department of Physics, The American College, Madurai, Tamil Nadu, India on 10.01.2024 and 11.01.2024
5. A one – day Workshop programme “A One Day Workshop on Scientific Computations Using PYTHON” organized by the Department of Physics (Satellite Campus), The American College, Madurai, Tamil Nadu, India on 12.02.2024

Any other activities / information / academic credentials you would like to mention:

1. Completed Diploma in Computer Applications.
2. Completed Diploma in Desk Top Publishing.

Head of the Department

(Dr. D. Durai Manoharadoss Prabakaran)

Dr. S. Santhosh Kumar Jacob