



## PG AND RESEARCH DEPARTMENT OF PHYSICS

### JAMAL MOHAMED COLLEGE (Autonomous)

College with Potential for Excellence  
Accredited (3<sup>rd</sup> Cycle) with 'A' Grade by NAAC  
DBT Star Scheme & DST-FIST Funded  
(Affiliated to Bharathidasan University)  
Tiruchirappalli - 620020



**Name** : Dr. A. MOHAMED SALEEM

**Designation** : Associate Professor of Physics

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#### Educational Qualifications :

Degree/Diploma/other	Institution	Year
B.Sc.	Jamal Mohamed College (Autonomous and Affiliated to Bhrathidasan University, Tiruchirappalli)	1986
M.Sc.	Jamal Mohamed College(Autonomous and Affiliated to Bhrathidasan University, Tiruchirappalli)	1988
PGDCA	Jamal Mohamed College(Autonomous and Affiliated to Bhrathidasan University, Tiruchirappalli)	1991
B.Ed.	University of Madras, Chennai	1991
State Level Screening Test (SLST)		1991
M.Phil.	Periyar University, Salem	2010
Ph.D.	Khadir Mohideen college, Adirampattinam, Thajavur (Dt) (Affiliated to Bhrathidasan	2021

**Area of Specialization** : Nanoscience

**No. of Students Guided for M.Phil.** : 18

**Patent Filed:**

PATENT APPLICATION PUBLICATION

Application No. 202041037974 A

Date of filing of Application :03/09/2020

Publication Date : 04/03/2022

Title of the invention : **AN EFFICIENT METHOD FOR SYNTHESIS OF NANOSPHERIC ZnGa<sub>2</sub>O<sub>4</sub> CRYSTALLITES AND DEVELOPING ITS ASSEMBLED THREE-DIMENSIONAL STRUCTURE**

**Seminars / Conferences / Workshops organized: 02**

(1). UGC Sponsored State level seminar on “*Recent Advance in Thin Film Technology*” held at Department of Physics, Jamal Mohamed College, Tiruchirappalli, on 28<sup>th</sup> September, 2005.

(2). National Level Seminar on “*Nanoscience and Laser Material Processing*” Under UGC Autonomous Grant in commemoration of National Science Day, 9<sup>th</sup> March 2013 held PG and Research Department of Physics, Jamal Mohamed College, Tiruchirappalli-20.

**Papers published: 18**

(1). **Saleem, A.M.**, Prabhavathi, G., Karunanithy, M., Ayeshamariam, A. and Jayachandran, M., 2018. Green synthesis of nanoparticle by plant extracts—A new approach in nanoscience. *Journal of Bionanoscience*, 12(3), pp.401-407.

(2) **.A. Mohamed Saleem**, V. Fairose, M.T. Sadad Abdussamad, R. Abinaya, S. Kathoon Sanofar, B. Madhumitha, A. Ayeshamariam, M. Jayachandran, Morphological Studies of ZrO<sub>2</sub> Prepared by Thermal Evaporation Technique, *Journal of Nanoscience, Nanoengineering & Applications* Volume 8, Issue 3 ISSN: 2231-1777 (Online), ISSN: 2321-5194 (Print), 2018, pp 49-57

(3). **Saleem, A.M.**, Rajasekar, S., Kaviyarasu, K., Perumalsamy, R., Ayeshamariam, A. and Jayachandran, M., 2019. Green combustion synthesis of CeO<sub>2</sub> and TiO<sub>2</sub> nanoparticles doped with same oxide materials of ZrO<sub>2</sub>: Investigation of in vitro assay with antibiotic resistant bacterium (ARB) and anticancer effect. *European Journal of Medicinal Plants*, pp.1-17.

(4). **Saleem, A.M.**, Gnanasaravanan, S., Saravanakkumar, D., Rajasekar, S., Ayeshamariam, A. and Jayachandran, M., 2021. Preparation and characterization studies of TiO<sub>2</sub> doped ZrO<sub>2</sub> on ITO nanocomposites for optoelectronic applications. *Materials Today: Proceedings*, 36, pp.408-415.

(5). Perumalsamy, R., Prabhavathi, G., Nivetha, S., **Mohamed Saleem, A.** and Karunanithy, M., 2017. Study of Nanomaterials Prepared by Combustion Method Using High Heat Combustion Chamber and Agreement with the Reported Results. *Fluid Mech Open Acc*, 4(175), pp.2476-2296.

(6). Nivetha S, Perumalsamy R, Ayeshamariam A, **Saleem AM**, Karunanithy M and Jayachandran, Hybrid Solar Cells Based on Organic Inorganic Materials Photovoltaic, Applications: A Review, 2017, J Powder Metall Min, an open access journal Volume 6 • Issue 3 • 1000178, ISSN: 2168-9806 DOI: 10.4172/2168-9806.1000178

(7). Karunanithy, M., Nivetha, S., Ayeshamariam, A., Thirumamagal, R. and **Mohamed Saleem, A.**, 2017. Studies on Photoacoustic Spectroscopy (PAS) of CNT NPs. *Fluid Mech Open Acc*, 4(180), pp.2476-2296.

(8). Nivetha, S., Perumalsamy, R., Ayeshamariam, A., Srinivasan, M.P. and **Mohamed Saleem, A.**, 2017. Cadmium Doped with Selenides and Telluride for Photovoltaic Applications: A Review. *Fluid Mech Open Acc*, 4(167), pp.2476-2296.

(9). Perumalsamy R, Prabhavathi G, Nivetha S, **Saleem AM**, Karunanithy M, et al. (2017) Effect of Different Doping Concentrations and Its Characterizations of Nanocrystalline ITO Nano Particles. J Powder Metall Min 6: 182. doi:10.4172/2168-9806.1000182

- (10). Manjula, N., Selvan, G., Ayeshamariam, A., **Mohamed Saleem, A.**, Geetha, N. and Jayachandran, M., 2017. Effect of Sputtering Technique and Properties of TiO<sub>2</sub> Doped with SnO<sub>2</sub> Thin Films. *Fluid Mech Open Acc*, 4(5), pp.1-6.
- (11). Fowziya, S.A., Mohideen, A.M., Arasu, M.V., Jahangir, A.R., **Saleem, A.M.**, Ayeshamariam, A. and Jayachandran, M., 2018. Oxidative Hydrothermal Synthesis of Ce<sub>2</sub>O<sub>3</sub>-ZrO<sub>2</sub>-Y<sub>2</sub>O<sub>3</sub> Nanocomposites and Their Photocatalytic and Biological Studies. *Journal of Bionanoscience*, 12(4), pp.478-487.
- (12). Fowziya SA, Uduman Mohideen AM, Kavin Micheal M, Ayeshamariam A, **Mohamed Saleem A**, Seeni Mohamed Aliar Maraikkar SM and Jayachandran M, Exceptional Encouraged Results in the Characterisation and Applications of Semiconducting CeO<sub>2</sub> and Its Dopant Nanocomposites-A Review, *Eng Technol Open Acc* 1(4): ETOAJ.MS.ID.555569 (2018), pp 001-0011
- (13). Saravanakkumar, D., Abou Oualid, H., Brahmi, Y., Ayeshamariam, A., Karunanaiithy, **M., Saleem, A.M.**, Kaviyarasu, K., Sivaranjani, S. and Jayachandran, M., 2019. Synthesis and characterization of CuO/ZnO/CNTs thin films on copper substrate and its photocatalytic applications. *OpenNano*, 4, p.100025.
- (14). Prabhavathi, G., **Mohamed Saleem, A.**, Ayeshamariam, A., Karunanithy, M. and Jayachandran, M., 2019. Preparation and characterizations of Graphene oxide and Graphene NPs. *International Journal of Bio-Pharma Research*, 8(2), pp.2486-2490.
- (15). Prabhavathi G, Anuradha , Afroos Banu A, Ayeshamariam A, Punithavelan N., **Mohamed Saleem A.** and M. Jayachandran, 2019. Performance of Solar cell fabricated using TiO<sub>2</sub>: rGO on glass and Si substrates prepared by Thermal Evaporation Technique. *International Journal of Bio-Pharma Research*, 8(3), pp.2504-2513.
- (16). S. A. Fowziya, A. M. Uduman Mohideen, A. Afroos Banu<sup>1</sup>, Ayeshamariam, A. R. Mohamed Jahangir, **A. Mohamed Saleem**, M. Jayachandran, Synthesis and Characterization of CeO<sub>2</sub>-ZrO<sub>2</sub> Nanocomposites, *Journal of Nanoscience, Nanoengineering & Applications* Volume 8, Issue 3 ISSN: 2231-1777 (Online), ISSN: 2321-5194 (Print), PP 21-32.

(17). Prabhavathi, G., **Saleem, A.M.**, Ayeshamariam, A., Punithevelan, N., Srinivasan, M.P. and Jayachandran, M., Fabrication and Characterization of TiO<sub>2</sub>: rGO Thin Films on Si Substrate by Spin coating technique for the Determination of Sensitivity of Methanol Gas Concentration.

(18). Sudha, A., N. M. I. Alhaji, **A. Mohamed Saleem**, S. Beer Mohamed, and A. Ayeshamariam. "Electronic properties of surface modified LiO thinfilms with H<sup>+</sup> implantation." *Materials Today: Proceedings* (2023).

### **1. Papers presented in Seminars / Conferences / Workshops : 16**

(1). **A. Mohamed Saleem**, M. Karunanithy, Mariadhas Valan Arasu, A. Ayeshamariam and M. Jayachandran, "***Green synthesis of Silver nanoparticles – Reduced Graphine oxide composites for biological applications***" in National Level Seminar on Recent Advancements in Materials (NLS-RAM:17) conducted by department of physics, Jamal Mohamed College, Trichy-20 on 15<sup>th</sup> February 2017.

(2). **A. Mohamed Saleem**, S. Nivetha, R. Perumalsamy, G. Prabhavathy, A. Ayeshamariam and M. Jayachandran, "***Preparation And Characterization Of Titanium Oxide/ Porous Silicon (TiO<sub>2</sub>/PSi) Films***" National conference on Recent Developments in Chemistry (NCRDC – 2018) under UGC Autonomous Grant organized by Department of Chemistry, Jamal Mohamed College, Tiruchirappalli-20, held on 20<sup>th</sup> January 2018.

(3). **A. Mohamed Saleem**, V. Fairose, A. Hameedha Beevi, , A. Ayeshamariam and M. Jayachandran, "***Zirconium Oxide on ITO conducting Plate by using Thermal Evaporation Technique and its Characterizations***" in 3<sup>rd</sup> National conference on Recent trends in nanomaterials and thin films research(RTNMTR-2018) by A.V.V.M Sri Pushpam College, Poondi, Thanjavur(Dt) held on February 9-11, 2018.

(4). **A.Mohamed Saleem**, S. Nivetha, K. Kaviyarasu, A. Ayeshamariam, N. Punithavelan and M. Jayachandran, ***“Thermal evaporation technique to prepare Zr doped TiO<sub>2</sub> thin film on Si Substrate”*** in 29th Annual General Meeting of Materials Research Society Of India And National Symposium On ***“Advances In Functional And Exotic Materials”*** and are jointly organized by the Centre for High Pressure Research, School of Physics, Bharathidasan University, Tiruchirappalli and MRSI – Trichy Chapter on February 14-16, 2018.

(5). **A. Mohamed Saleem**, K. Saravanan, P. Dhanalakshmi, G. Rathika, R. Abirami, K. Nithya and A. Ayeshamariam, ***“Synthesis and its Morphological studies of Y<sub>2</sub>O<sub>3</sub> NPs”*** in National Seminar on Solid State Physics and Its Applications (NaSSSPA-2018) under UGC Autonomous Grant organized by Department of Physics, Jamal Mohamed College, Tiruchirappalli-20, held on 28<sup>th</sup> February 2018.

(6). **A. Mohamed Saleem**, A. Hameedha Beevi, K. Kaviyarasu, A.Ayeshamariam, M. Karunanithy, M.Jayachandran, ***“Green Synthesis, Cytotoxicity Effect Of Yttrium Oxide Doped With Cerium Oxide Nanoparticles Using Avocado Fruit Extract”*** in International Conference on Materials for Energy and Environment (ICMEE 2018) organized by Loyola Institute of Frontier Energy (LIFE), Loyola College, Chennai – 600 034, held on 22<sup>nd</sup> and 23<sup>rd</sup> February 2018.

(7). **A. Mohamed Saleem**, A.Ayeshamariam, ***“CeO<sub>2</sub> Nanocomposites Doped with NiO Semiconductor for Biological Applications”*** in the International conference on advancement in Engineering, Science and Technology organized by SBM College of Engineering and Technology, Dindigul-624005, held on 31<sup>st</sup> March-2018.

(8). **A. Mohamed Saleem**, A.Ayeshamariam, P.Ponsuriya, S. Nivetha, M.Jayachandran and K. Kaviyarasu, ***Green synthesis of CeO<sub>2</sub> and TiO<sub>2</sub> nanoparticles doped with ZrO<sub>2</sub>***, DST-SERB Sponsored National conference on ***“Recent Advances in Material Science and Manufacturing Engineering-RAMME 2018”*** organized by Department of Manufacturing Engineering, Annamalai University, Annamalainagar, Chidambaram on 15<sup>th</sup> and 16<sup>th</sup> October 2018.

(9). **A. Mohamed Saleem**, M. Kavin Micheal, A. Ayeshamariam, G. Prabhavathi, S. Sivaranjani, and M. Jayachandran, ***Preparation and Characterization of CeO<sub>2</sub> doped with ZrO<sub>2</sub> on Si***

*substrate by Thermal Evaporation Technique*, 3<sup>rd</sup> International conference of Recent Trends in Engineering, Science and Technology (ICRTEST'19), organised by SBM College of Engineering and Technology, Dindigul-624005 on 2<sup>nd</sup> March 2019

(10). **A. Mohamed Saleem**, S.A Fowziya, A.Ayeshamariam, C.M. Magdalane, A.M. Uduman Mohideen, M. Jayachandran **ZrO<sub>2</sub>/CeO<sub>2</sub> nanocomposite oxide via hydrothermal method for Photocatalytic applications**, National Level Seminar on Advance Topics in Physics (NSATP 2019), organized by PG and Research Department of Physics, Jamal Mohamed College, Trichy-20 on 6<sup>th</sup> March 2019.

(11). V.Prabhu, **A. Mohamed Saleem**, S. Nivetha, R. Perumalsamy, A. Ayeshamariam, N. Punithavelan, M. Jayachandran **“Preparation and Characterization of Ag<sub>2</sub>O:ZnO thin films on glass substrate by using Jet Nebuliser technique”**, National level seminar on advance topics in physics 2019, organized by PG and research Department of Physics, Jamal Mohamed College, Trichy-20 on 6<sup>th</sup> March 2019.

(12). V. Prabhu, R. Mohamed Ismail, **A. Mohamed Saleem**, R. Manimegalai, A.Ayeshamariam N.M.I. Alhaji and M.Jayachandran, **Synthesis and I-V measurements of cerium oxide (CeO<sub>2</sub>) particles**, International Conference on Emerging Paradigms Disease Management and Energy Technology (ICDMET – 2019), Dr. Umayal Ramanathan College for Women, Karaikudi on 7<sup>th</sup> and 8<sup>th</sup> August 2019.

(13). **A. Mohamed Saleem**, V. Prabhu, A.Ayeshamariam **Preparation and Characterization of Ag<sub>2</sub>O doped with ZnO Nanoparticles**, 4<sup>th</sup> National conference on Recent Advances in Nanotechnology (RAIN-2019), Organised by PG and Research Department of Physics, A.V.V.M Sri Pushpam College, Poondi, Thanjavur(Dt) on 16.08.2019 and 17.08.2019.

(14). **Mohamed Saleem**, N. Geetha and A. Ayeshamariam, **Green combustion synthesis of TiO<sub>2</sub> nanoparticles doped with ZrO<sub>2</sub> & its Investigation of antibacterial studies**, International Online Congress on Membranes and Membrane Assisted Processes (ICMMAP 2021) 12th -14th February 2021 Kottayam, Kerala, India Organized by Mahatma Gandhi University, P.D Hills P.O, Kottayam, Kerala, India & Wroclaw University of Technology, Wroclaw, Poland. **SECOND Prize.**

(15). A.Arthi, **A. Mohamed Saleem**, N.Sekar, R. Senthil, S. Gnanasaravanan, A.N.Vigneshwaran <sup>1</sup>and A.Ayeshamariam **Preparation of Antimony (Sb) doped TiO<sub>2</sub> by using**

*Perfume Spray Pyrolysis Technique*, International conference on Recent Innovations in Materials Science and Spectroscopy (ICRIMS-2023) 10<sup>th</sup> January,2023 organised by PG & Research Department of Physics, Jamal Mohamed college(autonomous), Tiruchirappalli in association with Indian spectro Physics Association(ISPA), Chennai, India.

**Orientation / Refresher Course attended: 04**

- 1) *Orientation course* for college and University teachers from 3.6.98 to 30.6.98  
Conducted by Academic Staff College, Pondicherry University, Pondicherry.
- 2) *UGC Sponsored refresher course* in Physics from 02.05.2002 to 22.05.2002  
conducted by Department of Physics, Gandhigram Rural Institute, Deemed University, Gandhigram – 624 302, Tamilnadu.
- 3) *UGC Sponsored refresher course* in Physics from 01.11.2003 to 21.11.2003,  
conducted by Ayya Nadar Janaki Ammal College, Sivakasi, Tamilnadu.
- 4) *UGC Sponsored refresher course* in Physics from 18.01.2006 to 07.02.2006,  
conducted by Academic Staff College, Bharathidasan University, Tiruchirappalli - 620023.

**Seminars / Conferences / Workshops Participated : 25**

- 1) Seminar on “*Satellite Remote Sensing*” conducted by St. Joseph’s College and Centre for Remote Sensing, Bharathidasan University, Tiruchirappalli on 7<sup>th</sup> and 8<sup>th</sup> October 1996.
- 2) UGC sponsored seminar cum workshop on “*Microprocessor and Microcontroller*” organized by Department of Physics, Urumu Dhanalakshimi College, Trichy, from 15<sup>th</sup> May 2000 to 5<sup>th</sup> June 2000.



- 3) Workshop on “***Innovative and Concept – Centered Experiments***” organized by Department of Physics, Regional Engineering College and Bharathidasan University, Trichy, on 18<sup>th</sup> January, 2002.
- 4) UGC sponsored State Level Seminar on “***Applications of Ultrasonics to Organic and Biomolecular Compounds***” held at Jamal Mohamed College, Tiruchirappalli-20 on 26-27 September 2005.
- 5) TANSICHE and UGC sponsored three days workshop on “***Curriculum Development and Evaluation***” organized by UGC-Academic Staff College, Bharathidasan University, conducted at Jamal Mohamed College (Autonomous), Trichy-20 on 2-4<sup>th</sup> March, 2006.
- 6) UGC Sponsored State level seminar on “***Advances in Electronics***” (***Autonomous Grant***), 20<sup>th</sup> March 2006, organized by Department of Physics, Jamal Mohamed College, Tiruchirappalli-20.
- 7) UGC sponsored One day State level seminar on “***Recent Trends in Power Science***” on 23<sup>rd</sup> July 2008, held at Department of Physics, Jamal Mohamed College, Trichy-20.
- 8) UGC sponsored state level seminar on “***Examination Reforms***” held at Jamal Mohamed College (Autonomous), Trichy-20 on 12<sup>th</sup> March, 2010.
- 9) NAAC Sponsored National Level Seminar on “***Quality Enhancement in Teaching, Research, Research and Extension in Higher Education Institutions – Prospects and Problems***” organized by Internal Quality Assurance Cell, Jamal Mohamed College(Autonomous),Tiruchirappalli-20 during April 15 & 16,2010.
- 10) DST sponsored National workshop and conference on “***Computational methods for nonlinear dynamics***” held at the Centre for nonlinear dynamics, Bharathidasan University, Trichy during 22-25 September 2010.
- 11) A one day UGC sponsored intercollegiate seminar on “***Nano Science and Technology***” on 7<sup>th</sup> October 2010, held at Department of Physics, Jamal Mohamed college, Trichy-20.

- 12) Seminar on “***Creating Competitiveness to Excel in Higher Education – a TQM approach***” organized by Internal Quality Assurance Cell(IQAC), Jamal Mohamed College, Tiruchirappalli-20 on 8<sup>th</sup> December 2010.
- 13) UGC Sponsored Autonomous Grant One Day State Level Seminar on “***Recent Advances in Laser Applications (SLS-RALA-2010)***” organized by Department of Physics Jamal Mohamed College.
- 14) “***Sixth National Conference on Nonlinear System and Dynamics- NCNSD 2011***” organized by School of Physics, Bharathidasan University, Tiruchirappalli- 620024, January 26-30, 2011.
- 15) UGC sponsored State level seminar on “***Advanced Research in Physics – A Few Perspectives (ARPP)***” held at P.G. and Research Department of Physics, Jamal Mohamed College (Autonomous), Tiruchirappalli, 28<sup>th</sup> Feruary, 2012.
- 16) Tamilnadu State Council for Science and Technology Sponsored Orientation program on “***Research activities in Science for College Teachers***” held by Bharathidasan University on 24<sup>th</sup> and 25<sup>th</sup> March, 2012.
- 17) A two day faculty development program on “***Soft Skills (Under UGC Autonomous Grant)***” organized by Internal Quality Assurance Cell(IQAC), Jamal Mohamed College, Tiruchirappalli-20 on 4<sup>th</sup> and 5<sup>th</sup> January 2013.
- 18) VI Academic conferences on “***Crises in Higher Education – An Indian Perspective***” on 06<sup>th</sup> April 2013 at Jamal Mohamed College, Tiruchirappalli-20, organized by Aided College Teacher’s Association –(ACTA).
- 19) International Seminar on “***Crystalline Materials and Optoelectronic Devices***” Under UGC Autonomous Grant, held at Jamal Mohamed College, Tiruchirappalli-620020 on 3<sup>rd</sup> February, 2014.
- 20) One day workshop on “***Amateur Radio***” to commemorate national science day – 28<sup>th</sup> February 2014 held at Department of Physics, Jamal Mohamed College, Tiruchirappalli.
- 21) State level seminar on “***Avenues for Higher Scientific Pursuits(AHSP-2014)***” in association with Commenwealth Students Association(CSA) – Asia Region held in commemoration of the International Literacy Day at Department of Physics Jamal Mohamed College, Tiruchirappalli-620 020 on 8<sup>th</sup> September 2014.
- 22) Three Day workshop on “***Amateur Radio***” in view of radio of Great Britain – Commonwealth contest 13<sup>th</sup> to 15<sup>th</sup> March 2015 held at Department of Physics, Jamal Mohamed College, Tiruchirappalli-20.

- 23) National One day workshop on “*Energy Security for Tamilnadu-Role of Renewables-(NWEST-2016)*” organized by Physics Research Department of Physics, Khadir Mohideen College, Adirampattinam on 6<sup>th</sup> October 2016.
- 24) “*One-Day work shop on the role of teacher in the present Scenario*”, Organised by the Internal Quality Assurance of Jamal Mohamed College, Tiruchirappalli on 7<sup>th</sup> January 2017.

**Membership in Academic Bodies:**

- ❖ Member in Board of Study, Department of Physics, Jamal Mohamed College(Autonomous), Tiruchirappalli – 20.
- ❖ Life membership (LM04482) in Indian Society of Systems for Science and Engineering (ISSE)
- ❖ Life membership (LMB2855) in Materials Research Society of India (MRSI), Trichy-Chapter.

**Administrative Positions held in the college:**

- ❖ *Coordinator*, Khajamian Hostel, Jamal Mohamed College, during 2012-2014.

**Incharge / Participation in Extracurricular Activities**

- ❖ *Leo Club Advisor* during 2005-2012 and recognized with *Par Excellence Leo Co-ordinator* award 2012-13 of Lions clubs International District 324 A2.