

Dr. Sam Solomon, Professor

Department of Optoelectronics, University of Kerala

PERSONAL INFORMATION

Residential address: Kolath,Puliyoor Gardens
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Kerala, INDIA, 695015

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EDUCATION

PhD Microwave Materials
University of Kerala, 2000
(Materials and Minerals Division, NIIST (CSIR),
Thiruvananthapuram, Kerala, India.)

MSc Physics
Specialization: Electronics
University of Kerala, 1991

BSc Physics
University of Kerala, 1989

FIELDS OF INTEREST

Functional nanomaterials
Optoelectronics
Microwave materials
Computational Physics

EXPERIENCE

Research: 28 years
Post-doctoral research: 2 years
Teaching: 27 years

AWARDS AND HONORS

- Junior Research Fellowship - CSIR (1992)
- Selected by the University of Kerala for the Commonwealth Fellowship in 2005
- Dr. S. Vasudev award for the best major research project from KSCSTE Govt. of Kerala in 2008
- Post-doctoral research award –UGC- India (2009)

POSITIONS HELD

- Member, Board of Studies, University of Kerala
- Member, Academic Council, University of Kerala
- Member of the selection committee, NIIST (CSIR)
- Head, Department of Physics, St. John's College, Anchal
- Member, Project evaluation committee, Science and Technology, Govt. of Kerala
- Reviewer for Elsevier and Springer Journals
- Member, Senate, University of Kerala
- Member, Academic Council, University of Kerala
- Member, Board of Studies, University of Kerala

PUBLICATIONS

More than 100 papers in National/ International Journals

Many Conference presentations

RESEARCH GUIDANCE

Number of Ph.D produced **11**

Number of Ph.D students **8**

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> 21 (Google Scholar)

LIST OF PUBLICATIONS – 2016 onwards

2021

1. Influence of pyrochlore domains on the structure and electrical properties $\text{Gd}_{2-x}\text{Dy}_x\text{Zr}_{1.5}\text{Hf}_{0.5}\text{O}_7$ energy materials, RS Rejith, Sam Solomon, Journal of Alloys and Compounds, 855, 157291
2. Non-Binary QC-LDPC Codes for Non-Gaussian Optical Channels, P. Sajith Sethu, K.G. Gopchandran, Sam Solomon, Optical and Quantum Electronics, <https://doi.org/10.1007/s11082-021-03230-1>
3. $\text{A}_{0.8}\text{Er}_{0.2}\text{TiNbO}_6$ (A= Ce, Pr, Nd and Sm) Functional Ceramics, Fergy John, Sam Solomon, Journal of the Journal of the Australian Ceramic Society, 1-10
4. Structure and properties of nanocrystalline $\text{LaSmZr}_2\text{O}_7$ functional material, Divya Vijayan, Jijimon K Thomas and Sam Solomon, Solid State Sciences, SSSCIE-D-21-00680
5. Combustion synthesis and optical properties of nanocrystalline $\text{Pr}_4\text{Al}_2\text{O}_9$
D Vijayan, JK Thomas, S Solomon, International Journal of Chemical and Environmental Sciences 2 (3), 71-79

2020

1. Structure and properties of pure and zirconium substituted nanocrystalline samarium titanate
K Sandeep, JK Thomas, S Solomon, Materials Science and Engineering: B 254, 114512
2. Dielectric and Optical Properties of $\text{Ln}_{0.8}\text{Lu}_{0.2}\text{TiNbO}_6$ (Ln= Ce, Pr, Nd & Sm) (Ln= Ce, Pr, Nd & Sm)
Ceramics, Physics Letters A 384 (28), 126731

2019

1. Synthesis and characterization of AZrTi_2O_7 (A = Mg, Ca, Sr and Ba) functional nanoceramics
K Sandeep, JK Thomas, S Solomon, Journal of Electro ceramics, Journal of Electro ceramics 43 (1), 1-9
2. Preparation, characterization and properties of LnSmWO_6 (Ln = Nd and Dy) nano functional ceramics
NL Jayalekshmy, JK Thomas, S Solomon, Bulletin of Materials Science 42 (4), 1-11
3. Order—Disorder transformation and its effect on the properties of $(\text{Lanthanide})_2\text{Zr}_{1.5}\text{Hf}_{0.5}\text{O}_7$

- functional nanoceramics, RS Rejith, JK Thomas, S Solomon, Materials Research Bulletin, 115, 1-11
4. Structural optical and electrical properties of RE₄Zr₃O₁₂ (RE = Dy, Y, Er, and Yb) nanoceramics
RS Rejith, RR Krishnan, A John, JK Thomas, S Solomon, Ionics 25 (11), 5091-5103
 5. Structural, optical and electrical characterizations of Ln₆WO₁₂ (Ln= La, Nd, Sm, Gd) nanoceramics
NL Jayalekshmy, A John, JK Thomas, S Solomon, Applied Physics A 125 (2), 1-11

2018

1. Fabrication and characterization of Ba₈Zn(Ta_{6-x}Sbx)O₂₄ microwave ceramics
MK Suresh, S Solomon, Journal of Materials Science: Materials in Electronics 29 (22), 19601-19606
2. Electrical and optical properties of pure and zirconium added dysprosium titanates, K Sandeep, JK Thomas, S Solomon, Journal of Materials Science: Materials in Electronics 29 (9), 7600-7612
3. Structural, Optical and Impedance Spectroscopic Characterizations of Nanocrystalline A₂Ti₂Zr₅O₁₆
(A= Mg, Ca, Ba and Sr), K Sandeep, JK Thomas, S Solomon, Journal of Electronic Materials 47 (4), 2417-2428
4. Structural, optical and ionic transport properties of Dy_{2-x}La_xZr₂O₇ nanoceramics, RS Rejith, JK Thomas, S Solomon, Journal of Alloys and Compounds 769, 906-915
5. Structural, optical and impedance spectroscopic characterizations of RE₂Zr₂O₇ (RE= La, Y) ceramics
RS Rejith, JK Thomas, S Solomon, Solid State Ionics 323, 112-122

2017

1. Structural and optical characterization of Y₂Ti₂O₇ and Y₂Ti_{1.5}Hf_{0.5}O₇ nanomaterials. S Anila, A John, JK Thomas, S. Solomon, Journal of Materials Science: Materials in Electronics 28 (24)*
2. Electrical and Optical Properties of Nanocrystalline A₈ZnNb₆O₂₄ (A = Ba, Sr, Ca, Mg) Ceramics
F John, JK Thomas, J Jacob, S Solomon, Journal of Electronic Materials 46 (8) *
3. Effect of Resistive Coupled Microwave Sintering on the Micro Hardness and Thermal Properties of Infrared Transparent Nano Yttria, CT Mathew, JK Thomas, YV Swapna, J Koshy, S Solomon, International Journal of Materials Science 12 (2)
4. Electrical and optical properties of nano-crystalline RE-Ti-Nb-O₆ (RE = Dy, Er, Gd, Yb) synthesized through a modified combustion method, F John, J Jacob, JK Thomas, S Solomon, Journal of Asian Ceramic Societies 5 (2), 151-159
5. A comprehensive analysis of the influence of resistive coupled microwave sintering on the optical, thermal and hardness properties of infrared transparent yttria-magnesia , CT Mathew, JK Thomas, YV

Swapna, J Koshy, S Solomon, *Ceramics International* 43 (18), 17048-17056

6. Enhanced infrared transmission characteristics of microwave-sintered –MgO nanocomposite

CT Mathew, S Solomon, J Koshy, JK Thomas, *Bulletin of Materials Science* 40 (6), 1171-1178

7. Electrical and optical properties of nanocrystalline RE–Ti–Nb–O₆ (RE = Ce, Pr, Nd and Sm)

electronic material, F John, A John, JK Thomas, S Solomon, *Journal of Materials Science: Materials in Electronics* 28 (8), 5997-6007

8. Influence of La³⁺ ion in the yttria matrix in improving the microhardness of infrared transparent nano

La_xY_{2-x}O₃ sintered via hybrid heating, JK Thomas, CT Mathew, J Koshy, S Solomon, *Journal of Advanced Ceramics* 6 (3), 240-250

2016

1. Hybrid Microwave Sintering of Infrared Transparent Nano-Y₃Al₅O₁₂ Synthesized by a Modified

Combustion Technique, M Christopher, S Solomon, J Koshy, J Thomas, *International Journal of Applied Ceramic Technology* 13 (5), 920-928

2. Single step combustion synthesis of nanocrystalline scheelite Ba_{0.5}Sr_{0.5}MoO₄ for optical and LTCC

applications: Its structural, optical and dielectric properties; S Vidya, S Solomon, JK Thomas, *Journal of Electroceramics* 36 (1), 142-149