
Dr. D Shanmuga sundar

4-2-58/B1, Agilmanai Street, Thiruppathur - 630211, Tamilnadu, INDIA

Cell: +91-9787880504

dshanmugasundar@gmail.com

Orchid ID: orcid.org/0000-0001-5539-3380

Research gate: https://www.researchgate.net/profile/Shanmuga_Sundar_Dhanabalan

Google Scholar: <https://scholar.google.co.in/citations?user=SEmcvo4AAAAJ&hl=en>

Professional Summary

Aspiring for a challenging opportunity in a progressive environment where learning, innovation and creativity are encouraged to enhance my skills and also to apply my knowledge for the success and growth of the organization

Core Qualification

- **5 Years of experience** in teaching & research and handled a wide range of subjects including Optical Communication and Nonlinear fiber optics.
 - **TSSC certified Trainer** for Optical Fiber Technician & Optical Fiber Splicer courses
 - Published paper in reputed journals with an cumulative **impact factor of 12.41**
 - Published book chapters and participated in various National and International conferences
 - Excellent communication skills both oral and written
 - Extremely organized lot of Workshops, Conferences and Seminars
 - Reviewer in National and International level Journal, Conferences and Symposiums
 - Resource person in Seminars, Workshops and delivered special talks in Colleges
 - Experience in software's like Optisystem, OptiFDTD and COMSOL
 - Willingness to write proposal to funding agencies to innovate new products
 - Capable of writing and developing curriculum for all levels of courses
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Employment Experience

Senior Assistant Professor
Madanapalle Institute of Technology & Science

8/6/2017 – 31/5/2018
Madanapalle, AP, INDIA

Assistant Professor 1/6/2016 – 31/5/2017
PSG College of Technology Coimbatore, TN, INDIA

Teaching & Research Assistant 2/1/2013 -31/5/2016
Alagappa Chettiar College of Engg & Tech Karaikudi, TN, INDIA

Assistant Professor 18/7/2012 -31/12/2012
Alagappa Chettiar College of Engg & Tech Karaikudi, TN, INDIA

Responsibilities:

- Teach classes and handled laboratories for both UG & PG courses according to their need and schedule
- Prepared curriculum and syllabus for UG & PG programs
- Guided students in PG project works along with my supervisor
- Mentoring students regarding their academic goals and how to meet them
- Written project proposal to funding agencies (DST & AICTE) along with my supervisor to innovate new products
- Conduct research in specific areas of study and to implement new facts in the curriculum
- Involved in equipment and component purchase activities for our department

Research Experience

Fondecyt Postdoctoral Fellow June 2018 – till date
Department of Physics, University of Chile, Santiago, Chile

Fabrication of Flexible Substrate
CSIR- Central Electrochemical Research Institute (CECRI), Karaikudi, Tamilnadu, India.

Fabrication of Flexible Electronic Devices
Indian Institute of Technology – Guwahati (IIT-G), Guwahati, Assam, India

Education

PhD – Education Completed
Flexible Electronics 2013 - 2017
Anna University, Chennai Tamilnadu, INDIA

Master's Degree - Education

Optical Communication
Anna University, Chennai

First Class

2010 - 2012
Tamilnadu, INDIA

Bachelor's Degree - Education

Electronic and Communication Engineering
Anna University, Chennai

First Class

2006 - 2010
Tamilnadu, INDIA

Publications

- **Book Chapter** - **01**
 - **International Journals** - **15**
 - **National Conferences** - **07**
 - **International Conferences** - **14**
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Membership in Professional Bodies

- International Association of Engineers (IAENG Membership No. 167800)
 - International Association of Advanced Materials, Sweden (Membership No. 8986191584)
 - Computer Science Teacher Association, New York, USA (Membership No. 8997006)
 - Indian Society of systems for Science and Engineering (ISSE Membership No. LM04823)
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Academic Projects**PhD Project*****Certain Investigations on Flexible Substrate for Flexible Electronics Applications***

Highly transparent and flexible substrate for flexible electronic applications such as OLEDs, OPVs, flexible transistors and antennas were reported for the first time. The as-synthesized substrate is found to have improved optical properties, excellent tensile property and high mechanical strength. Further the flexible antennas with high radiation efficiency, high gain and bandwidth of 60 MHz were designed, fabricated and reported. The fabricated antenna has maximum return loss of -24.06 dB at the frequency of 2.46 GHz. It covers the frequency range of 2.43 to 2.49 GHz with a bandwidth of 60 MHz.

Master's Project***Design and Analysis of Plastic Substrate Polymer White Light Emitting Diode***

White Organic Light Emitting Diode (OLED) on a flexible plastic substrate with a new enhancement method to improve the efficiency is proposed. Instead of using an anode here stack of anode layers were used to enhance the extraction efficiency of the device. A Semi-transparent gold layer is sandwiched between the layers of tantalum oxide and molybdenum oxide which do not require a high refractive index substrate. Using this design, the extraction efficiency of the device is increased by a factor of 0.6 compared to that of the device using glass substrate.

Mentored Projects

Data Transfer using Li-Fi Technology
PSG College of Technology

2016 - Project Expo
Coimbatore, TN, INDIA

Visible Light Communication (First Prize)
Alagappa Chettiar College of Engg & Tech

2015 - THIRAN
Karaikudi, TN, INDIA

Automatic Railway Gate Control System
Alagappa Chettiar College of Engg & Tech

2014 - THIRAN
Karaikudi, TN, INDIA

Special Lecturer Delivered

- **Resource Person** - AICTE Sponsored “Recent Technology in Optical WDM Networks, Burst Switching Networks and Sensor Networks: A Scalable Approach” **19th July 2013, Excel College of Technology, Erode, Tamilnadu, India**
 - **Special Talk** - “Optical Communication and its role in present scenario” **25th and 26th November 2016, Shanmuganathan Engineering College, Pudukottai, Tamilnadu, India**
 - **Resource Person** - “Optical Fiber Cables and Link Management” **17th and 18th February 2017, PSG College of Technology, Coimbatore, Tamilnadu, India**
 - **Resource Person** - “Origin – Data Analytic Software” **24th June 2017, Dr. Umayal Ramanathan College for Women, Karaikudi, Tamilnadu, India**
 - **Resource Person** - “One day seminar on Research Issues in Optical Communication” **28th August 2017, K.Ramakrishnan College of Technology, Trichy, India**
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Co-curricular Activities

Reviewer - National Level Technical Symposium (PRAGYANZ-14)

Alagappa Chettiar College Engineering & Technology, Karaikudi, Tamilnadu, India

Reviewer - National Conference on Microwave and Optical Communication (NCMOC-14)

Alagappa Chettiar College of Engineering & Technology, Karaikudi, Tamilnadu, India

Research Interest

Photonic Crystal devices
Flexible Optoelectronics
Optical Communication System Design
Visible Light Communication

Equipments Handled

RF/DC Sputtering Unit
Spin & Spray Coating Unit
Electron Beam Evaporation Unit
Thermal Evaporation Unit

Workshop/Seminar/Conference Organized

- Organized National Conference on Signal Processing Information and Communication Engineering (SPICE-2017) on 29-04-2014 at PSG College of Technology, Coimbatore.
- Organized one credit course on Internet of Things (IoT) from 11.03.2017 to 12.03.2017 at PSG College of Technology, Coimbatore.
- Organized Two day workshop on “Optical Fiber Cables and Link Management” in February 2017 at PSG College of Technology, Coimbatore.
- Organized TEQIP-II sponsored Training Programme on Telecom Sector Skill Development Certified Course on Optical Fiber Technician & Optical fiber Splicer from 14.11.2016 to 24.11.2016 at PSG College of Technology, Coimbatore.
- Organized TEQIP-II sponsored one credit course on Aerospace Avionics from 24.09.2016 to 25.09.2016 at PSG College of Technology, Coimbatore.
- Organized National Interactive Workshop cum Recruitment on Life and Career with Indian Navy from 19.08.2016 to 22.08.2016 at PSG College of Technology, Coimbatore.
- Organized TEQIP sponsored International Conference on Electrical Electronics and Communication (ICEEC-16) from 31.03.2016 – 01.04.2016 at Alagappa Chettiar College of Engg & Tech, Karaikudi.

- Organized AICTE sponsored two weeks Faculty Development Programme in Entrepreneurship from 01.06.2015 – 14.06.2015 in Alagappa Chettiar College of Engg & Tech, Karaikudi.
 - Organized TEQIP sponsored two weeks Faculty Development Programme in Entrepreneurship from 08.02.2016 – 21.02.2016 in Alagappa Chettiar College of Engg & Tech, Karaikudi.
 - Organized TEQIP sponsored National Conference on Microwave and Optical Communication (NCMOC-12) in Alagappa Chettiar College of Engg & Tech, Karaikudi.
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Workshop/Seminar/Conference Attended

- Attended TSSC sponsored Training course on “Optical fiber Technician & Optical Fiber splicing” from 14-11-2016 to 24-11-2016 at PSG College of Technology, Coimbatore.
- Attended “Keysight Tech Day” sponsored by Keysight Technologies on 25-10-2016 at The Residency Towers, Coimbatore.
- Attended a four days Faculty Empowerment Programme on “Analog, Power, Embedded Systems and Wireless (IoT) hands- on Workshop” from 25-07-2016 to 28-07-2016 at National Institute of Technology, Trichy.
- Attended a TEQIP sponsored one day Orientation Program organized by PSG Centre for Academic and Research Excellence on 23-06-2016 at PSG College of Technology, Coimbatore.
- Attended a TEQIP sponsored one week FDP on “Effective Communication for Classroom Management” from 05-06-2016 to 11-06-2016 at PSG College of Technology, Coimbatore.
- Attended a TEQIP sponsored one day seminar on “Secrets of Electromagnetics and Antenna” on 27-02-2016 at Alagappa Chettiar College of Engg & Tech, Karaikudi.
- Attended a TEQIP sponsored one day seminar on “Fabrication and characterization of Thin Films for Engineering Applications” on 27-11-2015 at Alagappa Chettiar College of Engg & Tech, Karaikudi.
- Attended a TEQIP sponsored one week training programme on “Research Issues in Optical Communication & Networks” from 03-12-2014 to 09-12-2014 at Alagappa Chettiar College of Engg & Tech, Karaikudi.

- Attended a TEQIP sponsored two days national level workshop on “Laser Optic Instrumentation” from 15-09-2014 to 16-09-2014 at Alagappa Chettiar College of Engg & Tech, Karaikudi.
- Attended a TEQIP sponsored two day workshop on “Networks and Optics” from 21-07-2014 to 22-07-2014 at Alagappa Chettiar College of Engg & Tech, Karaikudi.
- Attended a five days special training on “Optical Fiber Technology” from 03-03-2014 to 07-03-2014 at BSNL Madurai.
- Attended a one week national level short course on “Flexible Solar cells & Electronic Devices” from 08-07-2013 to 13-07-2013 at IIT Kanpur.
- Attended a TEQIP sponsored five days programme on “Soft Skill Development” from 27-05-2013 to 31-05-2013 at Alagappa Chettiar College of Engg & Tech, Karaikudi.
- Attended a two days IETE zonal seminar in “Recent Trends in Millimeter and Centimeter Wave Communication” from 15-02-2013 to 16-02-2013 at Mepco Schlenk Engineering College, Sivakasi.
- Attended a DRDO sponsored one day national level technical seminar in “Recent Trends in Communication Technologies” on 25-08-2012 at Velammal College of Engineering and Technology, Madurai.
- Attended a CSIR sponsored two days technical seminar in “Optical Communication Networks” from 16-09-2011 to 17-09-2011 at Mepco Schlenk Engineering College, Sivakasi.
- Attended a two days’ workshop in “Recent Trends in Communication Technology” from 24-09-2010 to 25-09-2010 at Sudharsan Engineering College, Sathiyamangalam.
- Attended 6 days in-plant training from 02.06.2008 to 07.06.2008 in Rail Net Software Solutions, Madurai.

Personal Details

- Date of Birth : 06th August 1989
 - Gender : Male
 - Marital Status : Single
 - Nationality : Indian
 - Passport Details : J6236124, valid upto 23.05.2021
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References

- **Dr. A. Sivanantha Raja, Associate Professor / Research Supervisor**, Department of ECE, Alagappa Chettiar College of Engineering and Technology, Karaikudi, Tamilnadu, India. E-mail: sivanantharaja@yahoo.com, Mobile: +91-94439 19844.
- **Dr.L.Ganesan, Professor/ HOD**, Computer Science and Engineering, Alagappa Chettiar College of Engineering and Technology, Karaikudi, Tamilnadu, India. E-mail: csehod@gmail.com, Mobile: +91-97882 12234
- **Dr.C.Sanjeeviraja, Emeritus Scientist**, Department of Physics, Alagappa Chettiar College of Engineering and Technology, Karaikudi, Tamilnadu, India. E-mail: csanjeeviraja@gmail.com, Mobile: +91-94870 37305.
- **Dr.D.Jeyakumar, Senior Principal Scientist**, Functional Material Division, CSIR-Central Electrochemical Research Institute, Karaikudi, Tamilnadu, India. E-mail: duraisamyjeyakumar@gmail.com, Mobile: +91-94422 27301.

List of Publications (Cumulative Impact Factor: 12.41)

Book Chapter

1. **D.Shanmuga sundar**, A.Sivanantha Raja, C.Sanjeeviraja and D.Jeyakumar (2015), “Synthesis and characterization of novel siloxane based transparent and flexible substrate for OLEDs” **Nanoelectronics and Sensors**, ISBN: 978-93-85436-94-9, Bloomsbury Publication.

National and International Journals

1. R.Sathyadevaki, **D.Shanmuga sundar** and A.Sivanantha Raja (2017), “Photonic Crystal 4X4 dynamic hitless routers for Integrated Photonic NoCs”, *Photonic Network Communications*, **Springer. (IF: 1.2)**
2. **D.Shanmuga sundar**, A.Sivanantha Raja, C.Sanjeeviraja and D.Jeyakumar (2016), “Highly transparent flexible polydimethylsiloxane films – promising candidate for optoelectronic devices” *Polymer International*, **Wiley Publications**, doi: 10.1002/pi.5088, Vol. 65, Issue 5, pp.535–543. **(IF: 2.46)**
3. **D.Shanmuga sundar**, A.Sivanantha Raja, C.Sanjeeviraja and D.Jeyakumar (2016), “Synthesis and characterization of transparent and flexible polymer clay substrate for OLEDs”, *Elsevier*, *Materials Today: Proceedings*, doi: 10.1016/j.matpr.2016.04.155 Vol.3, Issue 6, pp.2409–2412.

4. **D.Shanmuga sundar**, A.Sivanantha Raja, C.Sanjeeviraja and D.Jeyakumar (2016), “High Temperature Processable Flexible Polymer films”, *International Journal of Nanoscience*, doi: 10.1142/S0219581X16600383, Vol.15, No.4, pp.1660038-1-5.
5. R.Sathyadevaki, **D.Shanmuga sundar** and A.Sivanantha Raja (2016), “Design of dual ring wavelength filters for WDM applications”, *Optics Communication*, *Elsevier*, doi: 10.1016/j.optcom.2016.06.045, Vol.380, Issue 1, pp 409–418. (IF: 1.58)
6. R.Yamunadevi, **D.Shanmuga sundar**, A.Sivanantha Raja (2017), “AMM Cladding fiber for coupled plasmonic propagation and core guidance” *Photonic Network Communications*, *Springer*, doi: 10.1007/s11107-016-0653-0, Vol.33, Issue 3, pp 371-376. (IF: 1.2)
7. C.Umamaheswari, **D.Shanmuga sundar** and A.Sivanantha Raja (2017), “Exploration of Photonic Crystal Circulator Based on Gyromagnetic Properties and Scaling of Ferrite Materials”, *Optics Communication*, *Elsevier*, doi: 10.1016/j.optcom.2016.07.065, Vol.382, Issue 1, pp 186–195. (IF : 1.58)
8. R.Yamunadevi, **D.Shanmuga sundar**, A.Sivanantha Raja (2016), “Characteristics Analysis of Metamaterial based Optical Fiber” *Optik - International Journal for Light and Electron Optics*, *Elsevier*, doi: 10.1016/j.ijleo.2016.07.014, Vol. 127, Issue 20, pp. 9377–9385. (IF: 0.835)
9. R.Sathyadevaki, A.Sivanantha Raja and **D.Shanmuga sundar** (2016), “Photonic crystal based optical filter: a brief investigation”, *Photonic Network Communications*, *Springer*, doi: 10.1007/s11107-016-0620-9, Vol. 33, Issue 1, pp 77–84. (IF: 1.2)
10. K.Rohini Priya, A.Sivanantha Raja and **D.Shanmuga sundar** (2016), “Design of dual core liquid filled photonic crystal fiber coupler and analysis of its optical characteristics” *Journal of Optical Technology*, *Optical Society of America*, doi.org/10.1364/JOT.83.000569, Vol.83, No.9, pp. 569-573. (IF: 0.505).
11. S.Geerthana, A.Sivanantha Raja and **D.Shanmuga sundar** (2015), “Design and optimization of photonic crystal fiber with improved optical characteristics” *Journal of Nonlinear Optic and Physics Materials*, doi: 10.1142/S0218863515500514, Vol.24, No.4, pp.1550051-1-11. (IF: 1.00)
12. G.Rajalakshmi, A.Sivanantha Raja and **D.Shanmuga sundar** (2015), “Design and optimization of two dimensional photonic crystal based optical filter”, *Journal of Nonlinear Optic and Physics Materials*, doi: 10.1142/S0218863515500277, Vol.24, No.3, pp.1550027-1-8. (IF: 1.00)
13. **D.Shanmuga sundar** and A.Sivanantha Raja (2013), “High efficient plastic substrate polymer white Light Emitting Diode”, *Springer*, *Optical and Quantum Electronics*, doi: 10.1007/s11082-012-9604-x, Vol. 45, No.1, pp 79-85. (IF: 1.05)

14. **D.Shanmuga sundar** and A.Sivanantha Raja (2015), "ITO free flexible OLEDs", International Journal of Engineering Technology Science and Research, ISSN 2394 – 3386, Vol.2, pp-83-85.
15. **D.Shanmuga sundar** and A.Sivanantha Raja (2015), "Review of flexible substrates suitable for Opto-electronic devices" International Journal of Applied Engineering Research, ISSN 0973-4562 Vol. 10 No.25.pp.21293-21295.

National and International Conferences

1. R.Sivaranjani, A. Sivanantha Raja, **D.Shanmuga sundar**, (2018), "Realization of an Optimized Hexagonal Shaped XOR Gate and Half Adder Design based on 2D – Photonic Crystal" Proceedings of Global Summit on Science, Technology, Engineering and Management (GSSTEM) – 2018, Sri Ramakrishna Institute of Technology, Coimbatore, ISBN: 978-1717587268.
2. R.Sivaranjani, A. Sivanantha Raja, **D.Shanmuga sundar**, (2018), "A 2-Dimensional Photonic Crystal based All-Optical XOR Gate Design" Proceedings of National Conference on Recent Trends in Information, Communication and Computing Technologies (RTICCT'18), KSR College of Engineering, Tiruchengode.
3. R.Sivaranjani, A. Sivanantha Raja, **D.Shanmuga sundar**, (2018), "Design and Analysis of Hexagon Shaped 2D – Photonic Crystal Based Combinational Logic Circuit for all Optical Applications" Proceedings of National Conference on Emerging Trends in Data Science and Technology (NCETDST 2018) – 14th March 2018, Velammal Institute of Technology, "Velammal Knowledge Park", Panchetti – 601 204.
4. V.Venkata Ramanathan, T.Sridarshini, **D.Shanmuga sundar** and A.Sivanantha Raja (2017), "WDM Hybrid Optical Communication System for Long Haul Communication", Proceedings of International Conference on Emerging Trends in Engineering & Technology, (**ICETET-2017**) Shanmuganathan Engineering College, Arasampatti.
5. **D.Shanmuga sundar**, A.Sivanantha Raja and T.Sridarshini (2017), "Performance Analysis of Hybrid Data Transmission in ROF System Based on WDM Technique", Proceedings of International Conference on Microwave and Optical Communication, (**ICMOC-2017**), A.C.College of Engineering & Technology, Karaikudi.
6. **D.Shanmuga sundar**, A.Sivanantha Raja (2016), "Flexible substrate for RF antenna applications", Proceedings of International Conference on Electrical, Electronics and Communication, (**ICEEC-2016**), A.C.College of Engineering & Technology, Karaikudi.

7. **D.Shanmuga sundar**, A.Sivanantha Raja, C.Sanjeeviraja and D.Jeyakumar (2015), “Polymer substrate – everlasting alternate for plastic in OEDs application” Proceedings of International Conference on Advanced Nanomaterials and Nanotechnology, (**ICANN-2015**), **IIT Guwahati**, Guwahati.
8. **D.Shanmuga sundar**, A.Sivanantha Raja, C.Sanjeeviraja and D.Jeyakumar (2015), “Synthesis and characterization of novel siloxane based transparent and flexible substrate for OLEDs” Proceedings of International conference on Nanomaterials and Nanotechnology (**NANO-15**), K.S.Rangasamy college of Technology, Tiruchengode.
9. **D.Shanmuga sundar**, A.Sivanantha Raja (2015), “ITO free flexible OLEDs”, International Conference on Innovative Research in Engineering, Science and Management-15 (**ESM-15**), Jawaharlal Nehru University, New Delhi, India.
10. **D.Shanmuga sundar** and A.Sivanantha Raja (2012),“Design of white light emitting diode with improved extraction efficiency”, Proceedings of the National Conference on Microwave & Optical Communication (**NCMOC-12**), Alagappa Chettiar College of Engineering & Technology, Karaikudi.
11. **D.Shanmuga sundar** and A.Sivanantha Raja (2012), “Design and analysis of a plastic substrate polymer white Light Emitting Diode”, Proceedings of the International Conference on Recent Trends in Computational Methods Communication and Control at Government College of Engineering, Tirunelveli.
12. **D.Shanmuga sundar** (2011),“A low power zigbee base band processor”, Proceedings of the National Conference on Recent Advances in VLSI and Embedded Systems at Sudharsan Engineering College, Sathiyamangalam.
13. **D.Shanmuga sundar** and T.Sridharshini (2011), “Performance analysis and effect of optical phase conjugator on dispersion compensation”, Proceedings of the International Conference on Advances in Engineering & Technology at E.G.S.Pillay Engineering College, Nagapattinam.
14. G.Bhuvaneswari, **D.Shanmuga sundar**, A.Sivanantha Raja (2016), “Design and analysis of ammonia sensor using PANDA ring resonator”, Proceedings of the 3rd International Conference on Emerging Trends in Engineering and Technology’16 (**ICETET’16**) at Pandian Saraswathi Yadav Engineering College, Arasanoor.
15. R.Sathyadevaki, **D.Shanmuga sundar**, A.Sivanantha Raja (2016), “Performance Investigation of optical filters based on the resonance effect of different photonic crystal rings” Proceedings of 2nd National Conference on Nanophotonics (**NCNP 2016**), Bharathidasan University, Trichy (**Best Poster Award**).

16. R.Yamunadevi, **D.Shanmuga sundar**, A.Sivanantha Raja (2016), “Investigation of sub wavelength surface plasmon propagation in metamaterial integrated optical fiber” Proceedings of 2nd National Conference on Nanophotonics (**NCNP 2016**), Bharathidasan University, Trichy.
17. G.Bhuvaneswari, **D.Shanmuga sundar**, A.Sivanantha Raja (2016), “Design and analysis of photonic crystal based optical circulator” Proceedings of 2nd National Conference on Nanophotonics (**NCNP 2016**) at Bharathidasan University, Trichy.
18. R.Yamunadevi, **D.Shanmuga sundar**, A.Sivanantha Raja (2016), “Integration of metamaterial in tapered hollow core fiber for slow-light propagation” Proceedings of International Conference on Innovations in Engineering and Technology (**ICIET- 2016**) at K.L.N College of Engineering, Sivagangai.
19. R.Sathyadevaki, **D.Shanmuga sundar**, A.Sivanantha Raja (2016), “Diagonally coupled hexagonal photonic crystal filter for optical supervisory channel” Proceedings of International Conference on Electrical, Electronics and Communication, (**ICEEC-2016**), A.C.College of Engineering & Technology, Karaikudi.
20. G.Bhuvaneswari, **D.Shanmuga sundar**, A.Sivanantha Raja (2016), “PANDA ring resonator for optical gas and pressure sensing applications” Proceedings of International Conference on Electrical, Electronics and Communication, (**ICEEC-2016**), A.C.College of Engineering & Technology, Karaikudi.
21. R.Yamunadevi, **D.Shanmuga sundar**, A.Sivanantha Raja (2016), “Negative epsilon medium based optical fiber for transmission around UV and visible region” Proceedings of International Conference on Electrical, Electronics and Communication, (**ICEEC-2016**), A.C.College of Engineering & Technology, Karaikudi.