

## **RESEARCH PAPERS PUBLISHED: 59**

International Journals – 43, (Science Citation indexed Journals: 25)

International Conferences – 11, National Conferences–3, Book Chapter – 1,

Patent Published – 1

### **2020-2021**

#### **International journals:**

1. **Selvendran S**, Susheel A, Tarun. P.V, Esakki Muthu K, Sivanantha Raja A, “A novel surface plasmon based photonic crystal fiber sensor” **Journal of Optical and Quantum Electronics (springer)**,52, 290 (2020). <https://doi.org/10.1007/s11082-020-02403-8>. (IF:1.842)
2. **S.Selvendran**, A.Sivanantha Raja, K. Esakki Muthu, “Surface Plasmon Based Fiber Optic Refractive Index Sensor- A Brief Investigation”, **Indian Journal of Engineering and Materials Sciences (IJEMS)**, (NISCAIR-CSIR), has been accepted for Publication. (IF:0.521)
3. K. Esakki Muthu, **S. Selvendran**, V. Keerthana, K. Murugalakshmi & A. Sivanantha Raja, “Design and Analysis of a Reconfigurable XOR/OR logic Gate Using 2D Photonic Crystals with low latency”, **Journal of Optical and Quantum Electronics (springer)**, Vol.52, No.433, pp.9, Sep 2020, DOI: 10.1007/s11082-020-02550-y . (IF:1.842).
4. M. Madhumitha, **Selvendran S**, Sivanantha Raja A, Esakki Muthu K, “Photonic Crystal based Narrowband Optical Filter: A Brief Analysis”, **Optik (Elsevier)**, Article number-166162, Dec 2020, DOI: 10.1016/j.ijleo.2020.166162. (IF: 2.187)
5. X. Alishacelestin, A. Sivanantha Raja, K. Esakki Muthu, **S. Selvendran** “A Novel Ultra-High Birefringent Photonic Crystal Fiber for Nonlinear Applications” has been accepted for publication in **Brazilian Journal of Physics (Springer Nature)**. DOI: 10.1007/s13538-020-00853-9 (0.895).

#### **Conferences:**

1. Sarojini R, Sivanantharaja.A, **Selvendran.S**, “Analysis of 40Gb/S NRZ-DPSK Data Wavelength Conversion Using Cross Polarization Modulation in SOA for Optical Networks” **AICTE Sponsored International virtual Conference on Antenna Innovations, 5G Communications and Network Technologies (ICA5NT 2020)**, 06th & 07th November 2020, at Velammal Institute of Technology, Chennai, pp-208-212, ISBN No: 978- 81 - 909948 - 3 – 5.

### **2019-2020**

#### **International journals:**

1. **Selvendran S**, Sivanantha Raja A, “Performance Investigation on Optical Wavelength Conversion Using A Newly Designed Highly Nonlinear Fiber with Ultra Flattened

Dispersion” **Journal of Quantum electronics (IOP science)**, Vol. 49, No. 6, pp.585 – 592 (2019). (IF:1.184).

2. **S.Selvendran**, A.Sivanantha Raja, K. Esakki Muthu, A.Lakshmi, “Certain Investigation on Visible Light Communication with OFDM Modulated White LED using Optisystem Simulation” **Wireless Personal Communication (Springer)**, 18 May 2019, DOI: 10.1007/s11277-019-06617-2. (IF: 1.061)
3. **Selvendran S**, Sivanantha Raja A, Esakki Muthu K, “A Study on the Effect of Dispersion Flattened Characteristics of Highly Nonlinear Fiber in Fiber Optic Parametric Amplification” **Optik (Elsevier)**, Feb 2019, DOI: 10.1016/j.ijleo.2019.02.063.(IF:2.187)
4. Sarojini R, Sivanantha Raja A, **Selvendran S**, Esakki Muthu K, “Cross polarization modulation-based wavelength conversion with very low pump power in SOA: An investigation”, **Optik (Elsevier)**, vol.185, pp. 852–858, Apr 2019, DOI: 10.1016/j.ijleo.2019.04.016.(IF:2.187)
5. Mageshwari A, Sivanantha Raja A, **Selvendran S**, Esakki Muthu K, Gobi N “A Novel PhC Based 4-channel Nano-cavities Biosensor for Diagnosis of Haemoglobin Disorders from Different States of Blood Simultaneously”, **JASC: Journal of Applied Science and Computations**, Volume VI, Issue VI, JUNE/2019, ISSN NO: 1076-5131.
6. A. Susheel, S. **Selvendran**, “Investigation on Water Level Regulation Using Floating Sensor and Arduino Uno” **IOP Conf. Ser.: Mater. Sci. Eng. (a conference proceedings journal) (Web of Science indexed)**, 561, 012009, 2019, DOI: 10.1088/1757-899X/561/1/012009.

#### **Conferences:**

1. A. Susheel and **S. Selvendran**, “Building a Kernel Image of RTEMS on Host Operating System”. International Conference on Frontiers in Smart System Technologies. **Venue:** Vel-Tech University, Chennai **Date:** 3-5 April 19.
2. A. Susheel and **S. Selvendran**, “Investigation on Water Level Regulation Using Floating Sensor and Arduino Uno”. First International Conference on Materials Science and Manufacturing Technology 2019 (ICMSMT 2019), **Venue:** Hotel Aloft, Coimbatore, **Date:** 12-13 April 19.

#### **Book Chapter:**

1. Susheel A., **Selvendran S.** (2021), “ Building a Kernel Image of RTEMS on Host Operating System”. In: Suresh P., Saravanakumar U., Hussein Al Salameh M. (eds) **Advances in Smart System Technologies. Advances in Intelligent Systems and Computing**, vol 1163. Springer, Singapore. [https://doi.org/10.1007/978-981-15-5029-4\\_22](https://doi.org/10.1007/978-981-15-5029-4_22) (SCOPUS indexed)

#### **Patent Published:**

1. **Selvendran S** “Fiber Bragg Grating Based Non-Zero Dispersion Shifted Fiber for Novel Ultra High Negative Dispersion Compensator” Application No.201841011221 A, Date of filing of Application: 27/03/2018, Published Date: 17/05/2019.

**2018-2019**

#### **International journals:**

1. **S.Selvendran** , A.sivanantharaja, S Yogalakshmi “A highly sensitive surface plasmon resonance biosensor using photonic crystal fiber filled with gold nanowire encircled by silicon lining ”**Optik (Elsevier)**, Vol.156, pp.112-120, Mar 2018, DOI: 10.1016/j.ijleo.2017.10.157. **(IF:2.187)**
2. **S.Selvendran**, A.sivanantharaja, S Yogalakshmi, “A highly sensitive Bezier polygonal hollow core photonic crystal fiber biosensor based on surface plasmon resonance , **Optik (Elsevier)**, Vol.171, pp.109-113, June 2018. **(IF:2.187)**
- 3.
4. Divya S, **Selvendran.S**, A.Sivanantharaja “Photonic crystal-based optical biosensor: A brief investigation” **Laser Physics (IOP science)**, Vol. 28, Issue 6, May 2018, doi.org/10.1088/1555-6611/aab7d2. **(IF:1.333)**
5. Divya S, **Selvdendran.S**, A.Sivanantharaja, “Two-Dimensional Photonic Crystal Ring Resonator Based Channel Drop Filter for CWDM application” **Photonic network communications (PNET) (Springer)**, Vol.35 , No.3, pp.353-363, June 2018. DOI: 10.1007/s11107-017-0749-1. **(IF: 1.750)**
6. Karthika M, **Selvendran S**, Saravanan K, “A New Design of Photonic Crystal Fiber with Highly Birefringence” **International Journal of Pure and Applied Mathematics**, Volume 118, No. 24 2018. ISSN: 1314-3395 (on-line version).
7. **Selvendran S**, Sivanantha Raja A, Esakki Muthu K, “Investigation on the Influence of Duo-binary and CSRZ Modulation Formats on Self Phase Modulation Effect in Optical Communication Network” **International Journal of Scientific Research in Physics and Applied Sciences**, Vol.6, Issue.4, pp.17-22, August (2018).

### 2017-2018

#### International journals:

1. D.Rajaeshwari, A.sivanantharaja, **S.Selvendran**“Design and analysis of polarization splitter based dual core photonic crystal fiber” **Optik (Elsevier)**,Vol.144, Sep2017, P. 15-21. **(IF:2.187)**
2. Esakkimuthu.K, A.Sivanantharaja, **Selvendran.S**, “Optical Millimeter Wave Generation through Frequency decupling using DP MZM and RoF transmission” **Optical and Quantum Electronics (Springer)**, vol. 49, no. 63, 2017. DOI:10.1007/s11082-017-0902-1.**(IF:1.842)**
3. **Selvendran.S**, A.Sivanantharaja, “New refractive index profiles of dispersion flattened highly nonlinear fibers for future all optical signal processing in WDM optical networks” **Photonic network communications (PNET)(Springer)**,Vol.33, Issue 2, pp 217–230. Imprint: Springer, April 2017. DOI: 10.1007/s11107-016-0635-2. **(IF:1.750)**
4. Arul kumar Y, Sivanantharaja A and **Selvendran S**, “Developing the Image Quality of the Two-Dimensional Photonic Crystal Slab by Modifying Shape of the Photonic Crystal”, **Advances in Natural and Applied Sciences**, May 2017, ISSN: 1995-0772, No.7, pages 1-6.
5. T.Dharchana, Sivanantharaja A and **Selvendran S**, “Design of Pressure Sensor Using 2D Photonic Crystal”, **Advances in Natural and Applied Sciences**, May 2017, ISSN: 1995-0772, No.7, pages 26-30.

6. J.Divya, Sivanantharaja A and **Selvendran S**, “High Sensitive Triple Nanocavity Biosensor Based on 2-D Photonic Crystal”, **Advances in Natural and Applied Sciences**, May 2017, ISSN: 1995-0772, No.7, pages 31-35.
7. S.Divya, Sivanantharaja A and **Selvendran S**, “Designing of All Optical NAND Gate Based On 2D Photonic Crystal”, **Advances in Natural and Applied Sciences**, May 2017, ISSN: 1995-0772, No.7, pages 36-40.
8. D.Rajeswari, Sivanantharaja A and **Selvendran S**, “Numerical analysis of polarization filter uses photonic crystal fiber with gold metal”, **Advances in Natural and Applied Sciences**, May 2017, No.7, pages 80-84.
9. M.Saranya Devi, Sivanantharaja A and **Selvendran S**, “High compact temperature sensing using 2D PhC based silicon on insulator technology”, **Advances in Natural and Applied Sciences**, May 2017, ISSN: 1995-0772, No.7, pages 85-91.

### 2016-2017

#### International Journals:

1. **Selvendran.S**, A.Sivanantharaja, S. Arivazhagan, M.Kannan, “Effect of Alpha and Gaussian Refractive Index Profile on the Design of Highly Nonlinear Optical Fiber for an Efficient Nonlinear Optical Signal Processing” **Journal of Quantum electronics (IOP science)**, Volume 46, No 9, pp 829–838, Sep 2016. (IF:1.184).
2. **SelvendranS**, Sivanantha RajaA, “Performance Analysis of A Highly Nonlinear Optical Fiber with Different Graded Refractive Index Profiles” **Optical and Quantum Electronics (Springer)**, Vol.48, No.11, pp: 1-11, Nov 2016, doi:10.1007/s11082-016-0788-3. (IF:1.842).
3. **SelvendranS**, A.Sivanantharaja, “Analysis on the impact of parabolic index profile of the core of a high nonlinear fiber” **Journal of Optical Technology (JOT)**, Imprint: **Optical Society of America (OSA)**, Vol. 83, No6. Jun 2016. (IF:0.416).
4. A.Sivanantha Raja, S.Vigneshwari, **S.Selvendran** “A novel high gain and wide band hybrid amplifier designed with a combination of EYDFA and discrete Raman amplifier” **Journal of Optical Technology (JOT)**, Imprint: **OSA**, Vol.83, No.4.APR2016.(IF:0.416)
5. S Yogalakshmi, **S Selvendran** and A Sivanantha Raja, “Design and analysis of a photonic crystal fiber-based polarization filter using surface plasmon resonance” **Laser Physics (IOP science)**, Vol.26, 056201 (7pp), 2016. DOI:10.1088/1054-660X/26/5/056201.(IF:1.333)
6. Manivannan K, Sivanantha Raja A, **Selvendran S**, “Performance Investigation on Visible Light Communication System using Optisystem Simulation Tool” **International journal of Microwave and optical technology (IJMOT)**, Vol.11, No.5, Sept 2016, pp.377-383.
7. Muppithathi@saravanan.A, Sivanantha raja. A, **Selvendran. S** “Implementation of 4-bit electrical gray to optical binary converter using the electro optic effect in the Mach

- Zehnder interferometer” **Advances in natural and applied sciences**, ISSN: 1995-0772, EISSN: 1998-1090, 10(4), Apr 2016, pp:116-121.
8. Yogalakshmi.S, **Selvendran.S**, Helena Margaret. D, Sivanantha Raja. A “Design of polarization filter using surface Plasmon resonance based square latticed Photonic crystal fiber” **Advances in natural and applied sciences**, ISSN: 1995-0772, EISSN: 1998-1090, 10(4) Apr 2016, pp: 122-126.
  9. K.M. Pandimeenal, A. Sivanantha Raja and **S. Selvendren**, “Study of the Performance of Free Space Optic Communication with Multiple Phase Encoded Signal under Different Weather Condition” **International Journal of Control Theory and Applications**, Vol. 9, No. 8, 2016, pp. 3423-3430.
  10. K. Manivannan, A. Sivanantha Raja, **S.Selvendran**“Study of the impact of receiver aperture diameter, LED electron carrier life time and RC time constant on visible light communication using optisystem simulation”**International Journal of Advanced Engineering Technology**, Vol. VII/Issue I/Jan.-March.,2016/375-378

### **Conferences:**

1. **Selvendran.S**, A. Sivanantharaja, “Ultra-long-distance transmission of single channel 10Gbps soliton signal using four wave mixing based regeneration technique” **International Conference on Electrical, Electronics and Communication-(ICEEC’16)**, Mar 2016, at ACCET, Karaikudi.
2. **Selvendran.S**, A. Sivanantharaja, “Wide band optical parametric amplification using dispersion flattened highly nonlinear fiber” **International Conference on Electrical, Electronics and Communication-(ICEEC’16)**, Mar 2016, at ACCET, Karaikudi.
3. Muppudathi@Saravanan.A, Sivanantharaja. A, **Selvendran.S** “Implementation of 2:1 multiplexer using an array of Mach-Zehnder interferometers” **ICEEC’16**, Mar 2016, at ACCET, Karaikudi.
4. K.Sowbharanikakumar, A. Sivanantharaja, **Selvendran.S** “Performance analysis and channel characterization of free space optical communication ” **ICEEC’16**, Mar 2016, at ACCET, Karaikudi.
5. K.Archana, V.Gowsalya, M. Lavanya, M.Muthamilselvi, **Selvendran.S**, A. Sivanantharaja, “Implementation of hybrid optical communication with use of FSO link” **ICEEC’16**, Mar2016, at ACCET, Karaikudi

### **2015-2016**

### **International Journal:**

1. R.Priya,A.Sivanantharaja, **Selvendran.S** “Performance analysis of optimized NZDSF without amplification and without dispersion compensation for WDM optical networks” **Optica Applicata Journal**, vol 45 (4) 2015.(**IF:0.673**)
2. Manivannan K, Sivanantha Raja A, **Selvendran S**, “Channel characterization for visible light communication with the help of MATLAB” **International Journal of Advanced Research in Computer Science and Software Engineering (IJARCSSE)**, Volume 5, Issue 12, December 2015, ISSN: 2277 128X

## 2014-2015

### International Journal:

1. A. Sivanantharaja, **Selvendran.S**, R. Priya, and C. Mahendran “An optimized design for non-zero dispersion shifted fiber with reduced nonlinear effects for future optical networks” **Optica Applicata Journal**, Vol. XLIV, No. 4, 2014,DOI: 10.5277/oa140402. (IF:0.673)
2. Keerthika.S.S, Sivanantharaja.A, **Selvendran.S** and Mahendran.C “Analysis of cross polarization modulation in semiconductor optical amplifier for wavelength conversion” (IJCSIT) **International Journal of Computer Science and Information Technologies**, Vol. 5 (1) , 2014, 901-903.
3. Keerthika.S.S,Sivanantharaja.A, **Selvendran.S** and Mahendran.C “10 Gbps NRZ wideband wavelength conversion using nonlinear polarization rotation effect in semiconductor optical amplifier” **International Journal of Scientific Research Engineering & Technology (IJSRET)** Volume 2 Issue 12 pp 821-826 March 2014, ISSN 2278 – 0882.

### Conferences:

1. Priya.R, Sivanantharaja.A, **Selvendran.S**, Mahendran.C, “Numerical Characterization of Non-Zero dispersion shifted fiber used for long haul DWDM Transmission” **NCMOC’14**, March 2014, at ACCET, Karaikudi.
2. Keerthika.S.S, Sivanantharaja.A , **Selvendran.S** and Mahendran.C., “80 Gbps Wavelength Conversion in Semiconductor Optical Amplifier with sub mW pumping” **NCMOC’14**, March 2014,at ACCET, Karaikudi.

## 2013-2014

### International Journal:

1. **Selvendran.S**, A. Sivanantharaja,“Analysis of four wave mixing under different all optical modulation formats" **Journal of Nonlinear Optical Physics & Materials (JNOPM) (World Scientific Publishing Company)** , Vol. 22, No. 3 (2013) 1350034 (19 pages), DOI: 10.1142/S0218863513500343.(IF:0.859)
2. **Selvendran.S**,A.Sivanantharaja,Kalaiselvi.K,Esakkimuthu.K,“Simultaneous four channel wavelength conversion of 50Gbps CSRZ-DPSK WDM signals in S and C bands using HNLF without additional pump signals" **Optical and Quantum Electronics (Springer)**,February 2013, Volume 45, Issue 2, pp 135–146, doi:10.1007/s11082-012-9612-x. (IF:1.842)

### Conferences:



1. N. Gopi, I. Muthumani, A. Sivanantha Raja and **S. Selvendran**, "Dispersion compensation for WDM signals with polarization insensitivity," **2013 International Conference on Information Communication and Embedded Systems (ICICES)**, Chennai, 2013, pp. 840-844.doi: 10.1109/ICICES.2013.6508245.
2. M.Nithya, Dr.A.Sivanantharaja, **S.Selvendran**“Analysis of FWM And Wavelength Conversion Using Different Fibers” **International Conference on Innovations in Intelligent Instrumentation, Optimization and Signal Processing (2013)**, FEB 2013, at Karunya university, Coimbatore.
3. N.Gopi, A.Sivanantha Raja, I.Muthumani, **S.Selvendran**, “Frequency Preserved Dispersion Compensation for WDM Signals with Polarization Insensitivity” **International Conference on Innovations in Intelligent Instrumentation, Optimization and Signal Processing (2013)**, FEB 2013, at Karunya university, Coimbatore

#### **2012-2013**

#### **Conferences:**

1. **Selvendran.S**, A.Sivanantharaja, Kalaiselvi.K, Esakkimuthu.K, “Multiwavelength Conversion using FWM Technique in HNLF” **National Conference on Microwave and Optical Communication (NCMOC’12)** , APR 2012, at ACCET, Karaikudi.