

## C.V.

1. **Name** : Dr. Vinod Kumar Singh
2. **Father's name** : Late Satish Prasad Singh
3. **Date of Birth** : 02-01-1964
4. Gender: Male
5. Category: GEN

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**7. Educational Qualification starting with Undergraduate:**

Examination	Branch/ Specialization	College/University /Institute	Year	Percentage /Grade	Class/ Division
B. Sc. (HON)	PHYSICS	BHAG. UNIV.	1985	64	Ist
M. Sc.	PHYSICS	BHAG. UNIV.	1988	64	Ist
M. PHIL.	APP. PHY.	ISM DHANBAD	1990	4.18/5.00	Ist class with Distinction.
Ph. D.	APP. PHY.	ISM DHANBAD	2000		

### 8. Work Experience:

Employer Leaving	Position held	Date of Joining	Date of	Pay with Scale of pay
ISM DHANBAD	SSA from SRF	02.03.1992	29.01.2007	Rs.8900 Basic
ISM DHANBAD	ASSISTANT PROFESSOR	29.01.2007	22.05.2013	Rs.10000 VI pay Scale
IIT (ISM) DHANBAD	ASSOCIATE PROFESSOR	22.05.2013	CONTINUE	Rs. 176500/= basic

### 9. Area of Research:

Electronics, Fiber optics

### 10. Research:

(a) **Title of Ph. D. (Self)** – “X-ray Spectroscopic Investigations of Some Systems”

(b) **Guided following six students so far for their Ph. D. :**

(1) **Name of Student : S S Mishra (Feb 2012)**

**Topic: Photonic Crystal fiber and its application in Optical communication**

(2) **Name of the Student: Papiya Dhara (March 2017)**

**Topic: “Investigations on design and characterization of Optical Fiber Sensors for Various Parameters”**

(3) **Name of the student : Rahul Kumar Gangwar (July 2017)**

**Topic: “Designing and Analysis of Photonic Crystal Fiber for various Applications”**

(4) **Name of the student : Vanita Bhardwaj (March 2018)**

**Topic: “Investigation on tapered optical fiber configurations for Multi- parameter sensing”**

(5) **Name of the student : Akhilesh Kumar Pathak (October 2019)**

**Topic: “To design and Characterize different types of Fiber Sensors”**

(6) **Name of the student : Moutusi De (July 2020 )**

**Topic: “Design and analysis of Photonic Crystal Fiber for sensing applications”**

**(7) Name of the student: Tulika Khanikar (March 2022)**

**Topic: Design and characterization of optical fiber sensors with simplified Configurations”**

**(8) Name of the student: Sugandha Das (September 2022)**

**Topic: “Design and characterization of Photonic Crystal fiber refractive index sensors with simplified Configurations”**

**(9) Name of the student: Pritam K. Singh (February 2023)**

**Topic: “Microwave and Optical Fiber sensors for mine surveillance System”.**

**(10) Name of the student: Maya Chauhan (August 2023)**

**Topic: “Design and characterization of optical fiber sensors using Nanostructured materials”**

**(c) Currently guiding – Two more students for their Ph. D. degree**

## **12. Project Completed:**

<b>Sl. No.</b>	<b>Title</b>	<b>Funding Agency</b>	<b>Amount in Lakh</b>	<b>Year</b>
<b>1.</b>	Design of Photonic Crystal Fiber based Multi- parameter sensor	I S M Dhanbad	5.40	2008-10
<b>2.</b>	Photonic Crystal Fiber : Designing and characterization	University Grant Commission New Delhi	9.54	2011-14
<b>3.</b>	Well growth ZnO nano rods used to fabricate LSPR based optical fiber sensor to detect automobile fuel adulteration	SERB, DST New Delhi	<b>20.73</b>	<b>2019-2022</b>

## **13. Courses Handled:**

1. Modern Physics : 1<sup>st</sup> Yr. B. Tech.
2. Waves and Oscillation : 5 Yr. M. Sc. Integrated (APH, AGP, MAC), B.Tech. (Eng. Phy.) and M. Tech. Integrated AGP
3. Atomic and Molecular : 2 Yr. M. Sc. (APH) and 4 Yr. B. Tech. (Engineering Physics) Physics/Spectroscopy
4. Laser and Non linear Physics : 2 Yr. M. Sc., 1 Yr. M. Phil. (APH), Ph. D. students

5. Photonics and Fiber Optics : 1 Yr. M. Phil. (APH), IV M. Sc. (Physics), JRF(AP)
6. Waves and Acoustics : III B. Tech (Eng. Phy.) and III INT. M. Tech. (AGP)
7. Nuclear Science and Engineering: VI B. Tech. (Eng. Phy.)
8. Nonlinear Optics : M. Sc. (Physics)

#### 14. Research Publications:

##### **National and International Journals:**

1. TiO<sub>2</sub> coated optical fiber SPR sensor for alcohol sensing application, Maya Chauhan and Vinod Kumar Singh, *Journal of Optics* (Accepted) March 2023.
2. Growth of well arrayed ZnO nanorods over no-core fiber for the measurement of glucose solution concentration, Maya Chauhan and Vinod Kumar Singh, *Journal of Material Science: Material in Electronics*, Vol. 34, pp. 5, February 2023.
3. Tapered MMF sensor fabrication using SnO<sub>2</sub>-NPs for alcohol sensing application, Maya Chauhan and Vinod Kumar Singh, *Optical Fiber Technology*, Vol. 76, pp. 103167, January 2023.
4. Hydrothermally grown ZnO nanorods based optical fiber sensor for salinity detection, Maya Chauhan and Vinod Kumar Singh, *Measurement*, Vol. 203, pp. 111913, September 2022
5. Highly sensitive PCF based plasmonic sensor for hemoglobin concentration detection, Sugandha Das and Vinod Kumar Singh, *Photonics and Nanostructures - Fundamentals and Applications*, Vol. 51, pp. 101040, September 2022
6. ZnO nanostructures coated no-core fiber refractive index sensors, Maya Chauhan and Vinod Kumar Singh, *Materials Science in Semiconductor Processing*, Vol.47, 106757, 15 August 2022
7. Sensitive enhancement of Ta<sub>2</sub>O<sub>5</sub> coated PCF based plasmonic sensor for glucose sensing application, Sugandha Das and Vinod Kumar Singh, *IEEE Photonics Technology letters*, Vol.34, No. 13 pp. 691-694, July 2022
8. "PDMS coated fiber optic sensor for efficient detection of fuel adulteration", Maya Chauhan, Tulika Khanikar, Vinod Kumar Singh, *Applied Physics B: Laser and Optics*, Vol. 128, pp. 89 April, 2022
9. "A review on infiltrated or liquid core fiber optic SPR sensors" Tulika Khanikar, M. De and Vinod Kumar Singh, *Photonics and Nanostructures - Fundamentals and Applications*, Vol. 46, pp. 10945, July, 2021
10. "Fiber Optic Plasmonic Sensors Based on Theoretical Analysis: a review", Tulika Khanikar, Moutusi De and Vinod Kumar Singh, accepted in *Optical and Quantum Electronics*, June, 2021
11. "V groove fiber plasmonic sensor with facile resonance tenability", Tulika Khanikar and Vinod Kumar Singh, accepted in *Optik*, vol., no., pp., June 2021
12. "Review on recent experimental SPR/LSPR based fiber optic analyte sensors", Maya Chauhan and Vinod Kumar Singh, *Optical Fiber Technology*, Vol. 64 pp. 102580, July, 2021
13. "The role of Ta<sub>2</sub>O<sub>5</sub> thin film on a plasmonic refractive index sensor based on photonic crystal fiber", Sugandha Das and Vinod Kumar Singh, *Photonics and Nanostructures - Fundamentals and Applications*, Vol.44, 100904, May 2021
14. "Wide range refractive index sensor using a birefringent optical fiber", Moutusi De and Vinod Kumar Singh, *Optical and Quantum Electronics*, vol. 53, pp. 198, April, 2021
15. "A Highly Sensitive SPR Refractive Index Sensor Based on Microfluidic Channel Assisted with Graphene-Ag Composite Nanowire", A. K. Pathak, C. Viphavakit, B. M. A. Rahman, and V. K. Singh, *IEEE Photonics Journal*, Vol. 2, no. 13, pp. 1-8, March, 2021

16. "Design and analysis of a tunable refractive index sensor by using a Ta<sub>2</sub>O<sub>5</sub> coated photonic crystal fiber", Sugandha Das and Vinod Kumar Singh, *Journal of Nanophotonics*, pp. 016006, Vol. 15 no. 1, January, 2021
17. "Numerical analysis of LSPR based fiber sensor for low refractive index detection", P. K. Singh, Vinod Kumar Singh and S. K. Chaulya, *Optik*, 224, pp.165704, December,2020
18. "Analysis of a single solid core flat fiber plasmonic refractive index sensor" Moutusi De, C. Markides, Vinod Kumar Singh, C. Thermistos and B M A Rahman, *Plasmonics*, vol. 15, no. 5 pp. 1429-37, October, 2020
19. "Investigation of rectangular solid-core photonic crystal fiber as temperature sensor", Papiya Dhara and Vinod Kumar Singh, *Microsystem Technologies*, doi 10.1007/s00542-020-04927-1, 16 June 2020
20. "Fiber optic pH sensor using TiO<sub>2</sub>-SiO<sub>2</sub> composite layer with temperature cross-sensitivity feature", Maya Chauhan and Vinod Kumar Singh, *Optik*, vol. 212, pp. 164709, June, 2020
21. "Theoretical assessment of D-shaped optical fiber chemical sensor associated with nanoscale silver strip operating in near infra-red region" A. K. Pathak, and Vinod Kumar Singh, *Optical and Quantum Electronics*, vol. 52, no.4, article 199, April, 2020
22. "SPR Based Optical Fiber Refractive Index Sensor Using Silver Nanowire Assisted CSMFC" A. K. Pathak and Vinod Kumar Singh, accepted in *IEEE Photonics Technology Letters*, vol. 32 , no.8, pp. 465-468, 2020
23. "Analysis of highly sensitive plasmonic refractive index sensor", Moutusi De and Vinod Kumar Singh, *Applied Optics*, vol. 59, no. 2, pp. 380-388, 2020
24. "Analysis of a highly sensitive side polished hollow fiber plasmonic sensor and its application as a magnetometer", Tulika Khanikar and Vinod Kumar Singh, *Applied Optics*, vol. 59, no. 1, pp. 171-179, 2020.
25. "Refractive index sensor based on selectively liquid infiltrated birefringent photonic crystal fiber" , Sugandha Das and Vinod Kumar Singh, *Optik*, vol. 201, pp 163489, 2020
26. "Prospects of photonics crystal fiber for analyte sensing applications: An overview", M. De, T. K. Gangopadhyay and Vinod Kumar Singh, *Measurement science and technology*, vol. 31, pp. 042001, 2020.
27. "Investigation of a SPR based refractive index sensor using single mode fiber with large D shaped microfluidic channel" A. K. Pathak, Vinod Kumar Singh, S. Ghosh, and B. M. A. Rahman, *OSA Continuum*, vol.2, no. 11, pp. 3008-3018, 2019 .
28. "Sensitivity enhancement of a concave shaped optical fiber refractive index sensor covered with multiple Au nanowires", A. K. Pathak, B. M. A. Rahman Vinod Kumar Singh and S Kumari, *Sensors*, vol. 19, no. 19, pp. 4210, 2019.
29. "Single mode dispersion shifted photonic crystal fiber with liquid core for optofluidic applications" Sugandha Das, Moutusi De and Vinod Kumar Singh, *Optical Fiber Technology*, Vol. 53, 201012, December, 2019.
30. "Gold grating assisted SPR based D-shaped single mode fiber for detection of liquid refractive index" Tulika Khanikar and Vinod Kumar Singh, *Optical and Quantum Electronics*, vol.51, no. 9, pp. 296, September, 2019
31. Multi-purpose photonic crystal fiber having advanced optical properties and long sensing\_range, Moutusi De and Vinod Kumar Singh, *Photonics and Nanostructures- Fundamentals and Applications*, vol. 36, pp. 100722, September, 2019

32. "Metal nanowire assisted hollow core fiber sensor for an efficient detection of small refractive index change of measurand liquid", A. K. Pathak, A. Ghose, R. K. Gangwar, B. M. A. Rahman and Vinod Kumar Singh, *Plasmonics*, June 2019 <https://doi.org/10.1007/s11468-019-00969-y>
33. "Single Channel Photonic Crystal Fiber Based High Sensitive Petrol Adulteration Detection Sensor" Moutusi De and Vinod Kumar Singh, *Optik*, vol. 183, pp 539-546, 2019
34. "Fiber optic refractive index sensor with high index refractive index overlay" Tulika Khanikar and Vinod Kumar Singh, *Laser Physics*, vol. 29, no.4, pp 045103, 2019
35. "PANI-PVA composite film coated optical fiber probe as a stable and highly sensitive pH sensor" Tulika Khanikar and Vinod Kumar Singh, *Optical Materials*, vol.88, pp244–251, Feb, 2019
36. "Prospects of Photonic Crystal Fiber as Physical Sensor: An Overview" Moutusi De, Tarun Kumar Gangopadhyay and Vinod Kumar Singh, *Sensors*, vol. 19, no. 3, pp. 464, January, 2019
37. "Broad range and highly sensitive optical pH sensor based on Hierarchical ZnO microflowers over tapered silica fiber" Akhilesh Kumar Pathak, Dharendra K. Chaudhary and Vinod Kumar Singh, *Sensor and Actuator A*, vol. 280, pp. 399-405, Sept, 2018
38. "Investigations on sensing properties of tapered photonic crystal fiber refractive index sensor" A. K. Pathak and Vinod Kumar Singh, *Indian Journal of Pure and Applied Physics*, Vol. 56, No. 5, pp. 373-378, 2018
39. "Magnetic fluid infiltrated dual core photonic crystal fiber based highly sensitive magnetic field sensor" Moutusi De and Vinod Kumar Singh, *Optics and Laser Technology*, vol. 106, pp. 61-68, October, 2018.
40. "Reflectance-based no core fiber sensor with enhanced sensitivity for salinity detection" Tulika Khanikar, A. K. Pathak and Vinod Kumar Singh, *Optik- International Journal of Light and Electron Optics*, vol. 159, pp. 1-8, April, 2018
41. "Experimental and Theoretical Analysis of Connector Offset Optical Fiber Refractive Index Sensor" Vanita Bhardwaj, K Kishor and Vinod Kumar Singh, *Plasmonics*, vol. 12 no. 6, pp 1999-2004, December, 2017
42. "A Novel use of Etched Multi-Mode Fiber as Magnetic field sensor", Vanita Bhardwaj and Vinod Kumar Singh, *IET Optoelectronics*, vol. 11, No. 6, pp. 248-252, December, 2017.
43. "A wide range and highly sensitive optical fiber pH sensor using polyacrylamide hydrogel" Akhilesh Kumar Pathak and Vinod Kumar Singh, *Optical Fiber Technology*, vol. 39, pp 43-48, December 2017.
44. "Fabrication and Characterization of Down-tapered Optical Fiber pH Sensor Using Sol-gel Method", Akhilesh Kumar Pathak and Vinod Kumar Singh, *Optik- International Journal of Light and Electron Optics*, vol. 149, pp. 288-294, , November, 2017.
45. "A robust optical fiber sensor for the detection of petrol adulteration", Akhilesh Kumar Pathak, Rahul Kumar Gangwar, Payal Priyadarshini and Vinod Kumar Singh, *Optik- International Journal of Light and Electron Optics*, vol.149, pp. 43-48, November, 2017.
46. "Highly sensitive Surface Plasmon Resonance based D-shaped Photonic Crystal Fiber Refractive Index Sensor" Rahul K. Gangwar and Vinod Kumar Singh, *Plasmonics*, vol. 12, no. 5, pp. 1367-1373, October, 2017.
47. "Effect of ethanol infiltration on zero dispersion wavelength of solid-core Photonic Crystal Fiber" Rahul Kumar Gangwar, Akhilesh Kumar Pathak, Payal Priyadarshini and Vinod Kumar Singh, *Optik- International Journal of Light and Electron Optics*, vol. 147, pp. 197-203, October, 2017.
48. "Designing of Highly Birefringence, Dispersion Shifted Decagonal Photonic Crystal Fiber with Low Confinement Loss" Moutusi De, Rahul K. Gangwar and Vinod Kumar Singh, *Photonics and Nanostructures- Fundamentals and Applications*, vol. 26, pp. 15-23, June, 2017.

49. "Optical fiber cone tapered tip sensor for refractive index measurement" Vanita Bhardwaj and Vinod Kumar Singh, *Indian Journal of Pure and Applied Physics*, vol. 55, No. 5, pp. 345-348, May, 2017.
50. "No-core fiber based highly sensitive optical fiber pH sensor" Vanita Bhardwaj, Akhilesh Kumar Pathak and Vinod Kumar Singh *Journal of Biomedical Optics*, vol. 22, No. 5, pp. 057001, 5 May, 2017.
51. "Improved mesostructure by incorporating surfactant on thin film to develop an advanced optical fiber pH sensor with a temperature cross sensitivity feature" Papiya Dhara and Vinod Kumar Singh, *Laser Physics*, vol. 27, No. 3, pp. 035101, 2017.
52. "Fabrication and characterization of TiO<sub>2</sub> coated cone shaped nano-fiber pH sensor", A. K. Pathak, V. Bhardwaj, R. K. Gangwar, M. De and Vinod Kumar Singh, *Optics Communications* 386, pp. 43-48 2017.
53. "Study of liquid sealed no-core fiber interferometer for sensing applications" Vanita Bhardwaj, and Vinod Kumar Singh, *Sensor and Actuator A: Physical*, 254, 1 Feb. pp. 95-100, 2017.
54. "Silicone rubber-coated highly sensitive optical fiber sensor for temperature measurement" Vanita Bhardwaj, Rahul Kumar Gangwar and Vinod Kumar Singh, *Optical Engineering*, 55 (12) 126107, 2016.
55. "Study of highly birefringence dispersion shifted photonic crystal fiber with asymmetrical cladding" Rahul Kumar Gangwar and Vinod Kumar Singh, *Optik- International Journal of Light and Electron Optics*, vol. 124, No. 24, pp 11854-11859, 2016.
56. "Fabrication and characterization of cascaded tapered Mach Zender Interferometer for refractive index sensing" Vanita Bhardwaj and Vinod Kumar Singh, *Sensor and Actuator A: Physical*, vol. 244, pp. 30-34, 2016.
57. "Reflectance based low cost disposable optical fiber SPR probe with enhanced bio-chemical sensitivity" Papiya Dhara, Vinod Kumar Singh, Massimo Olivero and Guido Perrone, *Optical Engineering*, vol. 55, No. 4, pp 046114, 2016.
58. "Magnetic field sensor based on selectively magnetic fluid infiltrated dual-core photonic crystal fiber," Rahul Kumar Gangwar, Vanita Bhardwaj and Vinod Kumar Singh, *Optical Engineering*, Vol 55, No. 2, pp 026111, 2016.
59. "Refractive index sensor based on selectively liquid infiltrated Dual core photonic crystal fibers" Rahul K. Gangwar and Vinod Kumar Singh, *Photonics and Nanostructures- Fundamentals and Applications*, Vol 15, pp 46-52, 2015.
60. "Effect of MMF stub on the sensitivity of a photonic crystal fiber interferometer sensor at 1550 nm" P. Dhara and Vinod Kumar Singh, *Optical Fiber Technology*, Vol. 21, pp 154-159, 2015.
61. "Designing of Endlessly Single Mode Polarization Maintaining Highly Birefringent Nonlinear Micro-structure Fiber at Telecommunication window by FV-FEM" R. K. Gangwar, S S Mishra and Vinod Kumar Singh, *Optik-International Journal of Light and Electron Optics*, Vol. 125, no. 5, 1641-1645, 2014.
62. "Investigation of Phase Birefringence and Group Birefringence of Square size Photonic Crystal Fiber at wavelength 1.3 $\mu$ m", S S Mishra and Vinod Kumar Singh, *Optik-International Journal of Light and Electron Optics*, Vol. 124, no. 12, pp. 1294-1296, 2013.
63. "Highly Nonlinear Dual Core Photonic Crystal Fiber with low Confinement loss at 1.55 $\mu$ m wavelength" S S Mishra and Vinod K. Singh, *International Journal of Optics and Photonics (IJOP)*, Vol. 5, no. 2, pp. 97-102, 2011
64. "Comparative Study of Fundamental Properties of Honey Comb Photonic Crystal Fiber at 1.55 $\mu$ m Wavelength", S. S. Mishra and Vinod Kumar Singh, *Journal of Microwaves, Optoelectronics and Electromagnetic Applications (JMoe)*, Vol. 10, no. 2, pp. 343-354, 2011.

65. "Designing of Endlessly Single-Mode Highly Polarization Maintaining Birefringent Photonic Crystal Fiber with Low Confinement Loss at Wavelength 1.55 $\mu$ m, Vinod K. Singh and S. S. Mishra,, *IEEE* 978-1-4244-6554-5/11, 2011.
66. "Study of non-linear properties of hollow core photonic crystal fiber" S S Mishra and Vinod K. Singh, *Optik-International Journal of Light and Electron Optics*, Vol. 122, no. 8, pp 687-690, 2011.
67. "Polarization Maintaining Highly Birefringent Small Mode Photonic Crystal Fiber at Telecommunication Window" S S Mishra and Vinod K. Singh, *Journal of Microwaves, Optoelectronics and Electromagnetic Applications* (JMOe), Vol. 10, no. 1, pp. 33-41, 2011.
68. "Highly Birefringent Photonic Crystal Fiber with Low Confinement Loss at Wavelength 1.55 $\mu$ m" S S Mishra and Vinod K. Singh, *Optik- International Journal of Light and Electron Optics*, Vol. 122, no. 22, pp 1975-1977, 2011.
69. "Designing of Index-Guiding Photonic Crystal Fiber by Finite Element Method Simulation", S. S. Mishra and Vinod K. Singh, *International Journal of Advanced Networking and Applications*, vol. 2, no.3, 666-670, 2010.
70. "Endlessly Single-mode Highly Polarization Maintaining Birefringent PCF with Zero Dispersion at wavelength 1.55  $\mu$ m", S. S. Mishra and Vinod K. Singh, *International Journal of Engineering Science and Technology*, vol. 2, no.9, pp. 4520-4525, 2010.
71. "Study of Fundamental Propagation Properties of Solid Core Holey Photonic Crystal Fiber in Telecommunication window" S. Mishra and Vinod K. Singh, *Chinese Journal of Physics*, vol. 48, no. 5, pp. 592-606, 2010.
72. "Study of Dispersion properties of Hollow-core Photonic Crystal Fiber by Finite Element Method" S Mishra and Vinod K. Singh, *Optoelectronics and Advanced Materials-Rapid Communications*, vol.3, no.9, pp. 874-878, 2009.
73. "Bonding parameter, Phase parameter and Ni K-Edge position studies of some Ni systems", Vinod Kumar Singh, *Indian Journal of Pure and Applied Physics*, New Delhi Vol. 44, pp. 20-24, January 2006.
74. "Correlation of nearest neighbour distance and bonding parameters of EXAFS of some Mn and Co systems" V K Singh, and A R Chetal, *Acta Physica Polonica A* vol 93 no. 3, 33-38, 1998.
75. "Chemical shift of X-ray K-absorption edge studies of some nickel systems and its correlation with effective charge", V K Singh, P R Sarode and A R Chetal, *Acta Physica Polonica A* 6, 87, 1003-1008, 1995.
76. "Determination of Nearest Neighbour Distance of some nickel systems from XANES" V K Singh and A R Chetal, *X-ray spectrometry*, vol. 22 (2) 86-88, 1993.

#### **National and International Conferences:**

77. Micro-channeled single mode fiber plasmonic sensor with ITO-TiO<sub>2</sub> bilayer, Tulika Khanikar, Akhilesh Kumar Pathak and Vinod Kumar Singh, Under review (Proceeding of IEEE Xpolre), Workshop WRAP-2019 held in IIT Guwahati, 13<sup>th</sup>-14<sup>th</sup> December, 2019
78. Effect of Silver and Gold on SPR Based D-shaped Photonic Crystal Fiber Refractive Index Sensor, Sugandha Das and Vinod Kumar Singh, Under review (Proceeding of IEEE Xpolre), Workshop WRAP-2019 held in IIT Guwahati, 13<sup>th</sup>-14<sup>th</sup> December, 2019



79. A side-polished macro bend fiber sensor for the efficient detection of petrol adulteration, Maya Chauhan, Akhilesh Kumar Pathak, Tulika Khanikar, and Vinod Kumar Singh, Under review (Proceeding of IEEE Xpolre), Workshop WRAP-2019 held in IIT Guwahati, 13<sup>th</sup>-14<sup>th</sup> December, 2019
80. Selectively ethanol infiltrated zero dispersion wavelength shifted solid core photonic crystal fiber, Sugandha Das and Vinod Kumar Singh, Proceeding of Springer, Conference ICOL-2019 held in IRDE Dehradun, 19<sup>th</sup> -22<sup>th</sup> October, 2019
81. Gelatin coated optical fiber probe as a pH sensor: An experimental analysis, Tulika Khanikar and Vinod Kumar Singh, Proceeding of Springer, Conference ICOL-2019 held in IRDE Dehradun, 19<sup>th</sup> -22<sup>th</sup> October, 2019
82. A fiber optic refractive index sensor using a high index layer of TiO<sub>2</sub>, Maya Chauhan and Vinod Kumar Singh, Proceeding of AIP, Conference ICC-2019 held in Govt. Engineering College, Bikaner, 14<sup>th</sup> -15<sup>th</sup> October, 2019
83. Proposal of a single core flat fiber as a sensor, Moutusi De, Christos Markides, Christos Themistos, Vinod Kumar Singh and B M A Rahman, Proceeding of Photonics 2018 held in IIT Delhi, 12-15 Dec, 2018
84. Proposal of a single core flat fiber as a sensor, Moutusi De, Christos Markides, Christos Themistos, Vinod Kumar Singh and B M A Rahman, Proceeding of Photonics 2018 held in IIT Delhi, 12-15 Dec, 2018
85. High sensitive magnetic field sensor based on rectangular lattice dual-core photonic crystal fiber, Moutusi De and Vinod Kumar Singh, Proceeding of Photonics 2018 held in IIT Delhi, 12-15 Dec, 2018
86. SPR based hollow fiber refractive index sensor using silver nanowire, Akhilesh Kumar Pathak and Vinod Kumar Singh, Proceeding of Photonics 2018 held in IIT Delhi, 12-15 Dec, 2018
87. Fiber Optic pH Sensor Using a High Index Layer and Sol Gel Entrapped Indicator, Tulika Khanikar and Vinod Kumar Singh, Proceeding of Photonics 2018 held in IIT Delhi, 12-15 Dec, 2018
88. Simple designing of highly birefringence hexagonal photonic crystal fiber with low confinement loss, Sugandha Das and Vinod Kumar Singh, Proceeding of Photonics 2018 held in IIT Delhi, 12-15 Dec, 2018
89. Tapered multi-mode optical fiber sensor to detect petrol adulteration, Akhilesh Kumar Singh and Vinod Kumar Singh, Proceeding of Optics and Photonics for energy and the environment, OSA conference, Singapore, 5-8 Nov, 2018 (<https://doi.org/10.1364/EE.2018.EM2A.1>)
90. U-bend optical fiber pH sensor using multiple sol-gel coating over TiO<sub>2</sub>, Akhilesh Kumar Pathak, Tulika Khanikar and Vinod Kumar Singh, Proceeding of IEEE conference ICMAP 2018 held in ECE Dept., IIT Dhanbad, 9-11 Feb, 2018
91. Highly birefringence decagonal Photonic Crystal Fiber with low confinement loss and small effective area, Moutusi De, Sugandha Das and Vinod Kumar Singh, Proceeding of IEEE conference ICMAP 2018 by ECE Dept., IIT Dhanbad, 9-11 Feb, 2018
92. Polymer clad silica fiber for refractive index sensing, Tulika Khanikar, Jyoti Sheoran and Vinod Kumar Singh, Proceeding of IEEE conference ICMAP 2018 held in ECE Dept., IIT Dhanbad, 9-11 Feb, 2018

93. Motion Detection and Tracking using Microwave sensor for eliminating illegal mine activities, Pritam Singh, S. K. Chaulya, Vinod Kumar Singh and Tanmoya Nema Ghosh, Proceeding of IEEE conference ICMAP 2018 by ECE Dept., IIT Dhanbad, 9-11 Feb, 2018
94. Intensity modulated optical fiber pH sensor by incorporating surfactant on thin film to advance sensitivity, Papiya Dhara, Moutusi De, Vinod Kumar Singh, Proceedings of Photonics-2016, held at IIT Kanpur, 04-08 December, 2016
95. Dual-core photonic crystal fiber based magnetic field sensor, Rahul Kumar Gangwar, Vanita Bhardwaj, Vinod Kumar Singh, Proceedings of Photonics-2016, held at IIT Kanpur, 04-08 December, 2016
96. Hetro-core optical fiber sensor for concentration measurement, Akhilesh Kumar Pathak, Vanita Bhardwaj, Rahul Kumar Gangwar, Vinod Kumar Singh, Proceedings of Photonics-2016, held at IIT Kanpur, 04-08 December, 2016
97. Effect of magnetic field direction on the magnetic fluid refractive index, Vanita Bhardwaj, Akhilesh Kumar Pathak, Rahul Kumar Gangwar, Vinod Kumar Singh, Proceedings of Photonics-2016, held at IIT Kanpur, 04-08 December, 2016
98. Optical Fiber refractive index sensor, Vanita Bhardwaj, Rahul Kumar Gangwar, Vinod Kumar Singh, Proceedings of International Conference on Light and Light-based technologies, held at Tejpur University Tejpur, 26-28 November, 2016
99. Novel core-off set optical fiber sensor for concentration measurement, Akhilesh Kumar Pathak, Vanita Bhardwaj, Rahul Kumar Gangwar, Vinod Kumar Singh, Proceedings of International Conference on Light and Light-based technologies, held at Tejpur University Tejpur, 26-28 November, 2016
100. Highly non-linear Simple designed solid core photonic crystal fiber, Motusi De, Rahul K. Gangwar and Vinod K. Singh, Proceedings of 3<sup>rd</sup> International Conference on Opto-electronics and Applied Optics (Optronix 2016) held at University of Engineering and Management Kolkata, 18-20 August, 2016.
101. Triple point tapered PCF based refractive index sensor, Proceedings of International Conference on Recent trends in Mechanical, Material science, Manufacturing, Automobile, Aerospace Engineering & Applied Physics (AMAEAP-2016), held at JNU, New Delhi, 30 April, 2016  
Published in Journal of Basic & Applied Engineering (ISSN 2350-0255) 2016.
102. Design and fabrication of disposable plasmonic fiber probes for biosensing, P. Dhara, C. Fallauto, Andrea Braglia, M. Olivero, V. A. Popescu, N. N. Puscas, A. Vallan, V. K. Singh, G. Perrone, SPIE Proceedings Optical Fibers and Sensors for Medical Diagnostics and Treatment Applications XV, 2015 (<http://dx.doi.org/10.1117/12.2078157>)
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- 113 "Refractive Index Sensing by Photonic Crystal Fiber Mach- Zehnder Interferometer at 1550nm", Papiya Dhara and Vinod Kumar Singh, Proceedings of 3<sup>rd</sup> International conference on Advanced Nanomaterials and Nanotechnology (ICANN-2013), at IIT Guwahati, Dec. 1-3, 2013.
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**Institute’s work:**

1. Chairperson Admissions (PG-PhD), IIT(ISM) from November’21 to November’22
2. Vice- Chairman, GATE-JAM 2020 (IIT ISM) from September 2019 to October 2021
3. Member of a committee for short listing of recruitment of group C employee in 2019-2020
4. Warden of Diamond hostel and Amber hostel for five years (2010 to 2014)
5. Members M. Sc./ M. Sc. Tech Entrance examination for three years
6. Convener, student culturalfest- **SRIJAN’2018** and Joint Convener **SRIJAN** for three years (2015, 2016 and 2017)
7. Observer ISM entrance examination for centre out of ISM Dhanbad for three Years
8. Taken part to introduce new mess system in the institute during the period of Warden
9. Taken part as a one of the members for initial set up of swimming pool of student activity centre (SAC)

**As on 18.08.2023**

