

# Curriculum Vitae

## Personal Information



**Name** Dr. Gaurav Kumar Bharti

**Date of Birth** April 13, 1990

**Mobile** +91-9864084143

**Whatsapp** +91-9871479360

**Email** gauravkumarbharti7@gmail.com, gauravkumarbharti@tdtu.edu.vn

**Address** Head CoE- Galgotias Semiconductor Resear Lab (GSRL),  
Room no - C003, C - Block,  
Galgotias University, Plot No.-2, Sector-17A, Yamuna Expressway,  
Greater Noida, India-203201

**Personal/Research Weblink** <https://www.galgotiasuniversity.edu.in/p/research?id=301>

[www.apcpsresearchgroup.com](http://www.apcpsresearchgroup.com)

**Areas of Interest** Photonics, Quantum Computing, Cyber Physical Systems, Optical Sensors, Nonlinear Optics, Modelling and Simulation,

## Work Experience

Sep 2025 - Continue **Visiting Faculty**, Ton Duc Thang University, Ho Chi Minh City, Veitnam

May 2025 - Continue **Associate Professor (Research), & Head, CoE GSRL**

**Galgotias University, Greater Noida, UP, India**

- Teaching, and Supervising Research Students
- Writing & Publishing Research Articles
- Managing Funded Research Projects
- Organizing Workshops/Seminars/Short Term Courses/Conference
- **Established CoE-Galgotias Semiconductor Research Lab (GSRL)**

July 2023 - Feb. 2025 **Assistant Professor**

**Indian Institute of Information Technology Bhopal, MP, India**

- Teaching, and Supervising Engineering UG, PG, & Research Students
- Writing & Publishing Research Articles
- Managing Funded Research Project and Consultancy
- Organizing Workshops/Seminars/Short Term Courses/Conference
- **Established Reseach Lab -Advanced Photonics & Cyber Physical Systems Lab**

Fall Semester 2022-23 **Visiting Faculty**

İzmir Yüksek Teknoloji Enstitüsü, Turkey

Dec 2021 - July 2023 **Assistant Professor**

Chandigarh University, Punjab, India

Sep 2020 - Dec 2021 **Post-Doctoral Fellow**

IIT Guwahati, Assam, India

Oct 2019 - Sep 2020 **Research Manager**

ORC Electronics India Pvt. Ltd., Jabalpur, India

Jan 2017 - Oct 2019	<b>Academic (Teaching) Assistant</b> NIT Agartala
Aug 2016 - Jan 2017	<b>Assistant Professor</b> Bhagalpur College of Engineering, Bhagalpur
March 2014 - Sep 2014	<b>Research Officer</b> ORC Electronics India Pvt. Ltd., Jabalpur, India
Dec 2013 - Feb 2014	<b>Electrical Engineer</b> Bihar State Co-op Milk Producers Fed. Ltd. (Nalanda Diary Plant)
Feb 2013 - Dec 2013	<b>Production Manager</b> Saloni Electronics & Controls, Indore

## **Educational Qualification**

2020	<b>NIT Agartala, Agartala, Tripura (MoE, Govt. of India)</b> PhD   Class/CGPA: FIRST/8.0
2016	<b>NITTTR, Kolkata, WB (CFTI, MoE, Govt. of India)</b> M. Tech   Class/Percentage: FIRST/76.60
2014	<b>IASE University, Udaipur, Rajasthan</b> M.B.A. (Distance mode)   Class/Percentage: FIRST/62.64
2012	<b>RGPV, Bhopal, MP</b> B.E.   Class/Percentage: FIRST/68.19
2008	<b>St. Joseph's Public School, CBSE, Bihar</b> 12th (AISSCE)   Class/Percentage: FIRST/69.00
2006	<b>D.A.V. Public School, CBSE, Bihar</b> 10th (AISSE)   Class/Percentage: FIRST/74.40

## **Professional Qualification**

Aug 2014	Post Graduate Entrance Test, West Bengal with All India Rank (AIR)-45.
----------	--

## **Editorial Services/Academic-Outreach Responsibilities**

Associate Editor	<b>Journal of Recent Innovations in Computer Science and Technology (JRICST)</b>
Session Chair	<b>IEEE International Conference on Advances in Computing Research on Science Engineering and Technology (ACROSET 2025) at Acropolist Institutte of Technology and Research,Indore India on 27-28 Sep 2025.</b>
Session Chair	<b>2025 International Conference on Engineering Innovations and Technologies (ICoEIT), LNCT Group of Colleges Bhopal, Madhya Pradesh, 4-5 July, 2025</b>
Jury Member	<b>National level hackathon - HACKSAGON-2025 jointly organized by IIIT's, at ABV-IIITM Gwalior, India, 28 June, 2025</b>
Session Chair	<b>3rd IEEE International conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI) at ABV-IIITM Gwalior, India, 6-8 March, 2025</b>
Session Chair	<b>IEEE International Conference on Emerging Technologies and Applications 2025 ( IEEE MPSECICETA 2025) at ABV-IIITM Gwalior, India, 21-23 Feb 2025.</b>

Ambassador	<b>IEEE WIE International Leadership Summit at Chennai, Tamil Nadu, India, October 3-5, 2024</b>
Session Chair	<b>9th IEEE International Conference on Automatic Control and Intelligent at Shah Alam, Malaysia, 29 June 2024</b>
Session Chair	<b>3rd IEEE International Conference of Emerging Technology (INCET 2022), at Belgaum, India, 27-29 May 2022</b>
Member	<b>Technical Program Committee, 1st International Conference on Sensors and Microsystems, Manipal University Jaipur, 28-29 March 2024</b>
Member	<b>National Advisory Board, International Conference on Material Science, Technology &amp; Sustainable Environment, RPS Group of Colleges, Haryana, 18-19 Apr.2024</b>
Reviewer	<b>IEEE Photonics Journal, IEEE Transactions on Plasma Science, IEEE Sensors Letter, IEEE Access</b>
Reviewer	<b>ANRF (formerly SERB), DST, Government of India</b>
Reviewer	<b>11<sup>th</sup> International Conference on Electronics, Computing and Communication Technologies, IEEE CONNECT 2025 at Sterling's Mac Hotel, Bangalore.</b> <b>1st International Conference on Machine Learning Algorithms 2024, Chitkara University, H.P.,</b> <b>International (Virtual) Conference Recent Advances in Electrical, Electronics, Ubiquitous Communication and Computational Intelligence 2022</b> <b>International Conference on Computational Performance Evaluation (ComPE-2020), NEHU Shillong, India,</b> <b>International Conference on Industrial, Mechanical and Electrical Engineering (ICIMEE 2021),</b> <b>2025 IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT)</b>
Reviewer	<b>Journal of Optics (Springer), Results in Physics (Elsevier) Journal, Optical and Quantum Electronics (Springer) Journal, Silicon (Springer) Journal, Optical Engineering (SPIE) Journal, Journal of Nanophotonics (SPIE) Journal, Optoelectronics and Advanced Materials-Rapid Communications</b>
Reviewer	<b>OPTICA (formerly OSA) Nextgen Institute Siegman School, hosted by the University of Warsaw</b>
Reviewer/Organizing Committee Member	<b>International Conference on Physics and Networks (ICPN) 2020, Seoul, South Korea</b>
Reviewer	<b>6th International Conference for Convergence in Technology, Pune</b>
Mentor	<b>2023 IEEE Women in Engineering Project- Based Learning School Camp, Manav Rachna University, Haryana</b>
Mentor	<b>2022, IEEE Women in Engineering Project-Based Learning School Camp</b>
Proctor	<b>IEEEExtreme Programming Competition 14.0</b>
Outreach/Event Organizer	<b>Organized University Outreach Program on the occasion of International Day of Light by IEEE Photonics Society CUSB at IIT Ropar in 2023 and at PEC Chandigarh 2024</b>

## Professional Membership/Societies Membership

- Senior Member of **IEEE, IEEE Photonics Society, IEEE Sensor Council, IEEE Young Professional, IEEE Nanotechnology Council, IEEE Industrial Electronics Society** (Membership No. 93636773).
- Member of **OPTICA** (formerly OSA) (Membership No. 1768168)
- Member of **SPIE** (Membership No. 4142595)
- Member of **IE (India)** (Membership No. M1762944)

## Sponsored Project Details

2026- 2029	<b>Title:</b> An IoMT-Driven FBG System for Real-Time Monitoring of Critical Health Parameters <b>Funding Agency:</b> BILATERAL SCIENTIFIC AND TECHNOLOGICAL COOPERATION BETWEEN THE REPUBLIC OF TUNISIA AND THE REPUBLIC OF INDIA, DST, Government of India <b>Role:</b> Principal Investigator (PI) <b>Amount:</b> Rs. 41 Lac <b>Status:</b> Submitted
2026- 2028	<b>Title:</b> Fabrication and Experimental Validation of a Computationally Optimized SPR-Based Optical Sensor for Non-Invasive Glucose Detection for Different Health Care Conditions. <b>Funding Agency:</b> Council of Science and Technology, U.P <b>Role:</b> Co-Principal Investigator (Co-PI) <b>Amount:</b> Rs. 13.50 Lac <b>Status:</b> Submitted
2024- 2025	<b>Title:</b> Design and Development of a Wearable Fibre Bragg Grating based Goniometer for measuring joint angle movements in different physiotherapy applications <b>Funding Agency:</b> iHUB DivyaSampark-IIT Roorkee under National Mission on Interdisciplinary Cyber Physical System, Department of Science and Technology, Government of India <b>Role:</b> Principal Investigator (PI) <b>Amount:</b> Rs. 17.99 Lac <b>Status:</b> Ongoing
2023- 2025	<b>Title:</b> Design of FBG Assisted AI Based Planter Pressure Measuring Device for Clinical Applications <b>Funding Agency:</b> IITI DRISHTI Cyber Physical System Foundation (under National Mission on Interdisciplinary Cyber Physical System, Department of Science and Technology, Government of India) <b>Role:</b> Principal Investigator (PI) <b>Amount:</b> Rs. 10 Lac <b>Status:</b> Completed
2023- 2025	<b>Title:</b> Theoretical Investigation and Analysis of Different Architectures of Quantum Computing for Cyber Physical Systems <b>Funding Agency:</b> M.P. Council of Science and Technology <b>Role:</b> Co-Principal Investigator (Co-PI) <b>Amount:</b> Rs. 8.5 Lac <b>Status:</b> Completed

## **Sponsored Industrial Consultancy**

2024 - 2025 **Title:** Design and Development of Different Smart Sensor Modules

**Funding Agency:** Robotronix Engineering Tech. Private Limited, Indore

**Amount:** Rs. 0.5 Lac

**Status:** Completed

## **Training/FDP/Workshop/GiAN Course/Coordinator/Convenor**

- \*Organized Galgotias University Winter-Spring interdisciplinary exchange program during February 2026.
- Conducted one week hands on training on Ansys Lumerical and HFSS during 15-19 September 2025 as a coordinator.
- Conducted Training on COMSOL Multiphysics during 6-8 October 2025 at Galgotias University as a coordinator.
- Contributed as Faculty Coordinator for the five day on-campus training in VLSI circuit design using Cadence EDA at Galgotias University Conducted by Entuple Technologies Pvt. Ltd., from 24-11-25 to 28-11-25.
- Organized 5 days FDP "Frontiers of Electronics and Photonics Technologies for Next Generation Industrial Applications" from 20-05-2024 to 25-05-2024 at IIIT Bhopal as a convener.
- Organized Two weeks International Faculty Development Programme on "Advancement in Quantum Computing & Sensor Technology for Viksit Bharat @2047" from 15-04-2024 to 27-04-2024 at The Oxford College of Engineering, Bangalore as a Course Coordinator and Convenor.
- Organized 5 days FDP "Frontiers of Electronics and Optoelectronics Circuits" from 01-04-2024 to 05-04-2024 at The Oxford College of Engineering, Bangalore as a Convener.
- Coordinator of the two-day Nation-wide mega workshop on VEGA Processors jointly organized by CDAC Meity, and IEEE India Council from 15-16th Nov. 2023 at IIIT Bhopal.
- Coordinator and SPOC of Hack-O-Sprint 2.0, Internal Smart India Hackathon 2024, IIIT Bhopal.
- Coordinator and SPOC of Hack-O-Sprint 1.0, Internal Smart India Hackathon 2023, IIIT Bhopal.
- Successfully Coordinated "Robotics" event of Spandan-Techfest, MIT Indore, 22-27 Nov. 2010.

## **National / International Conference organized as Chairman/ Secretary**

21 - 23 Feb, 2025 **Event:** 1st IEEE International Conference on Emerging Technologies and Applications 2025 (IEEE MPSec ICETA 2025), a flagship conference of the IEEE Madhya Pradesh Section

**Role:** General Co-Chair

## **Invited Talks/Speakers/Seminars/Workshop/Expert Lectures**

12 - 14 March, 2026 **Event:** IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI-2026)  
**Topic:** Workshop on "FBG-BASED INTEGRATED PHOTONIC SENSORS FOR HEALTHCARE APPLICATIONS"  
**Role:** Organizer and Speaker

10 Jan, 2026 **Event:** Invited Talk at Jaypee Institute Of Information Technology, Noida Sec-128.  
**Topic:** Recent Developments in Computational Physics  
**Role:** Speaker

6 - 7 Sep, 2025	<b>Event:</b> International Congress on Artificial Intelligence, BUBT Bangladesh <b>Topic:</b> AI Assisted FBG Optical Sensors for Healthcare Application <b>Role:</b> Keynote Speaker
30 June, 2025	<b>Event:</b> Invited Talk at Chandigarh University, Mohali, Punjab <b>Topic:</b> AI Assisted optical sensors for next generation healthcare applications <b>Role:</b> Speaker
26 - 31 May, 2025	<b>Event:</b> Expert Talk at DST Rajasthan Sponsored 6 days workshop at Anand International College of Engineering, Jaipur <b>Topic:</b> Recent Trends in Mathematical Modeling of Biological Systems for Sustainable Development with hands-on Training by using MATLAB <b>Role:</b> Resource Person
28 Jun, 2024	<b>Event:</b> Invited Talk at Sunway University, Malaysia <b>Role:</b> Speaker
9 Jun, 2024	<b>Event:</b> Invited Talk at Ton Duc Thang University, Ho Chi Minh City, Vietnam <b>Role:</b> Speaker
19 Feb, 2024	<b>Event:</b> Workshop titled "Hands-on Session of Photonic Circuit Computing and Its Applications" at Chandigarh University, Mohali, Punjab <b>Topic:</b> Photonic Circuit Computing and Its Applications <b>Role:</b> Resource Person
7 - 9 Dec, 2023	<b>Event:</b> SERB sponsored National Seminar at Gyan Ganga Institute of Technology and Sciences, Jabalpur <b>Role:</b> Key Note Speaker
18 Sep, 2023	<b>Event:</b> Expert Talk organized by Department of ECE, Inderprastha Engineering College, Ghaziabad. <b>Topic:</b> Recent Trends in All-Optical Technologies <b>Role:</b> Resource Person
23 May, 2023	<b>Event:</b> Invited Talk organized by Department of Physics, RPS Degree College, Balana, Mahendragarh, Haryana <b>Topic:</b> An Introduction to Nonlinear Optics <b>Role:</b> Expert
2022	<b>Event:</b> Tech-A-Month 3.0 (A month-long IEEE CUSB flagship programme) organized by Chandigarh University <b>Role:</b> Speaker
7 - 11 March, 2022	<b>Event:</b> STTP organized by SKIT Jaipur <b>Topic:</b> Application of Artificial Intelligence in VLSI and Communication Technology <b>Role:</b> Expert

16 - 20 Feb, 2022	<b>Event:</b> DST sponsored workshop organized by MNIT Jaipur and BIAS Uttarakhand <b>Topic:</b> Advances in Solar Photovoltaic – Emerging Materials and Technologies <b>Role:</b> Expert
5 Feb, 2022	<b>Event:</b> One-day webinar organized by SPIE Student Chapter MNIT Jaipur <b>Topic:</b> Research-PhD and its Beyond <b>Role:</b> Speaker
25 - 29 Jan, 2022	<b>Event:</b> STTP organized by SKIT Jaipur <b>Topic:</b> Emerging Tools and Techniques in VLSI, MEMS and MOEMS (ETTVMM-2022) <b>Role:</b> Expert
25 Sep, 2021	<b>Event:</b> One-day webinar organized by IEEE Nanotechnology Council Student Chapter IIT Patna <b>Topic:</b> Modelling of nanophotonic devices using FDTD simulation <b>Role:</b> Speaker
6 - 7 Aug, 2021	<b>Event:</b> Workshop organized by OSA MNIT Student Chapter <b>Topic:</b> Familiarization of FDTD and the modelling of photonics components <b>Role:</b> Expert
15 - 19 Feb, 2021	<b>Event:</b> DST sponsored workshop organized by MNIT Jaipur and BIAS Uttarakhand <b>Topic:</b> Thin Film Photovoltaics - Enabling the Era of Next Generation Solar Cells <b>Role:</b> Expert
22 - 27 Jun, 2020	<b>Event:</b> FDP program organized by E&ICT Academy, NIT Patna <b>Topic:</b> Next-Generation Semiconductor Devices For High-End Applications <b>Role:</b> Expert
17 - 21 Jun, 2019	<b>Event:</b> 5-days AICTE Training and Learning (ATAL) Academy Workshop on “Robotics” organized at CSED, NIT Agartala <b>Topic:</b> Robotics <b>Role:</b> Speaker
18 Aug, 2018	<b>Event:</b> One-day workshop organized by ECE department of Tripura Institute of Technology, Narsingarh, Tripura <b>Topic:</b> Introduction of Robotic Circuit Design and Automation <b>Role:</b> Resource Person
24 Sep, 2016	<b>Event:</b> One-day workshop at Bhagalpur College of Engineering, Bhagalpur, Bihar <b>Topic:</b> EDA-Electronic Design and Automation <b>Role:</b> Speaker
3 Feb, 2016	<b>Event:</b> Seminar at Ganga Memorial College of Polytechnic, Harnaut, Bihar <b>Topic:</b> Digital Electronics <b>Role:</b> Speaker
30 Oct, 2015	<b>Event:</b> Seminar at St. Mary and Jesus School, Kolkata <b>Topic:</b> Basic Electronics & its Components <b>Role:</b> Speaker

## Training/FDP/Workshop/GiAN Course, Conference Attended

- Attended and Presented paper "Cyber-Physical System Based Secure Communication for E-Governance Using Quantum Kay Distribution" at 2025 IEEE 1<sup>st</sup> International Conference on Smart Innovations in Systems, Infrastructure, Mechanical, Power, Ai & Computing Technologies at SISTec RATIBAD on 28-29 Nov 2025.
- Attended IEEE Conference Leadership Workshop 2025, during 11-12 September 2025.
- Attended and Presented paper "Design and Development of an Optical Programmable Interface for Fiber Bragg Grating(FBG) Sensors in a Planter Pressure Measuring Device" at 10<sup>th</sup> International Conference on Advanced Engineering - Theory and Application 2025 at Ton Duc Thang University, Vietnam on 11-13 December 2025.
- Attended and Presented paper "Modelling of Fiber Bragg Grating for Biochemical Pressure Sensing" at 3<sup>rd</sup> IEEE International Conference on Interdisciplinary Approaaches in Technology and Management for Social Innovation (IEEE IATMSI-2025) at ABV-IIITM Gwalior, India on 6-8 March 2025.
- Attended and Presented paper "Theoretical Investigation of single - Qubit Hadamard Gate" at 3<sup>rd</sup> IEEE International Conference on Interdisciplinary Approaaches in Technology and Management for Social Innovation (IEEE IATMSI-2025) at ABV-IIITM Gwalior, India on 6-8 March 2025.
- Attended AIRSA-IRCON 2025 SHODH-SANGAM as Faculty on 20-22 November 2025, AIIMS, New Delhi.
- Coordinated the celebration of National Science Day 2024 as a program coordinator.
- Attended and Presented Paper "Programmable Quantum Gates for Classical Computing Applications" at 9<sup>th</sup> IEEE International Conference on Automatic Control and Intelligent Systems (12CACIS2024) at Mardhiyyah Hotel and Suites, Shah Alam, Malyasia on 29<sup>th</sup> June, 2024.
- Participated in AICTE recognized FDP on "Ansys-EM Software (in collaboration with Ansys" organized by NITTTR Chandigarh, from 27/02/2023 to 03/03/2023.
- Participated in AICTE recognized FDP on "Applications of AI in Electronics Design" organized by NITTTR Chandigarh, from 20/02/2023 to 24/02/2023.
- Participated in DST-SERB Sponsored "Recent Trends in Electromagnetics and Optics (RTEOp 2023)", organized by IEST Shibpur from 17th-20th Jan. 2023.
- Participated in five days FDP on "Research Trends in Optical Technologies and its Applications (RTOTA-2023)" organized by VIT Vellore, from 05th-09th Jan 2023.
- Attended TEQIP-III sponsored One-Week online FDP on "Indian Knowledge System & National Education Policy 2020" from 21.03.2022 to 25.03.2022.
- Attended one-week ATAL FDP on "Design Thinking" from 17th - 21st January 2022.
- Participated in one week FDP on "Research Essentials" from 31st Dec 2021- 5th Jan 2022 organized by Chandigarh University.
- Participated in five days FDP (GURU-DAKSHTA) on "Implementation of National Education Policy 2020: Role of Faculty in Higher Education Institution" from 20th - 24th Dec 2021 organized by Chandigarh University.
- Participated in Short-term course on "Photonics and Photovoltaics: Devices, Circuits, and Metrology" organized by IIT Guwahati from 1/12/20 to 24/12/20.
- Participated in Short-term course on "Optoelectronics and Nanophotonics" organized by IIT Guwahati from 06/11/20 and 07/11/20 to 09/11/20 and 12/11/20.
- Attended a webinar on "Photonic Integrated Circuits" Organized by DSATM and IEEE Photonics Society, Bangalore Chapter.
- Attended International Webinar on Optical Metamaterials Based on Broken Symmetries organized by OSA Student Chapter, MNIT, Jaipur
- Attended a webinar on "IEEE-ABET Webinar on Accreditation and Quality Engineering Education in South Asia" organized by IEEE India Council on 8<sup>th</sup> July 2020.
- Attended a webinar on "Marriage between Holography and Statistical Optics for Unconventional Computational Imaging: A Tutorial" organized by OSA Student Chapter, MNIT on 8th July 2020.
- Attended a webinar on "Cyber Forensics" organized by IEEE NITA Student Branch, NIT Agartala on 20<sup>th</sup> July 2020.
- Attended a webinar on "Structured Light Beams and their Applications" organized by OSA Student Chapter, MNIT on 30th June 2020.

- Participated in virtual symposium on “International Day of Light (IDL-2020)” organized by IEEE Photonics Society, SPIE Student Chapter and Department of Physics, IIT Guwahati on 16th May 2020.
- Attended and presented paper “Design of all Optical Polarization” in International Conference on Recent Trends in Electronics and Computer Science at National Institute of Technology Silchar on 18-19 March 2019.
- Participated in AICTE Training And Learning (ATAL) Academy workshop on “Artificial Intelligence” from 22/02/19 to 26/02/19 at NIT Agartala.
- Participated in Advanced Excel/Advanced Origin/ImageJ/Patent Writing and Copywriting workshop at Research Conclave'18 at IIT Guwahati on March 8-11, 2018.
- Participated and Presented Paper at Research Conclave'18 at IIT Guwahati on March 8-11, 2018.
- Attended and Presented paper “All-optical login And/Nand gates using two symmetric micro ring resonators and Design of All-Optical Combinational Circuits using a Cascaded Micro-Ring Resonator” at 2019 the International Conference on Optical and Photonic Engineering (icOPEN 2019) at Phuket, Thailand on 16-20 July 2019.
- Participated in National Conference on “Smart and Sustainable City Infrastructure” at NIT Agartala on 29th Nov. 2018, organized by BIS New Delhi, NIT Agartala, IEI Tripura State Centre, IBC Tripura Centre.
- Participated in regional workshop on “National Information System for Climate and Environment Studies (NICES), at NIT Agartala 5th Feb. 2018.
- Attended and Presented paper “Design of all Half-Adder/Subtractor using Two Cascaded Micro-ring Resonators” at International Conference on Advances in Optics and Photonics, Guru Jambheshwar University of Science and Technology Hisar India on 23-26 November, 2017.
- Attended and Presented Paper “All Optical logic ON/NOR gates using two symmetric micro-ring resonators” at National Conference on Information, Photonics and Communication (IPC'17) held at BPPIMT, Kolkata on 15-17 May 2017.
- Attended GiAN course on PT-symmetry and its realization in experimental systems: theory and application, at NIT Agartala, 13th-17th Feb. 2017.
- Attended STTP programme on “Role of Technical Education in Implementation of Community Development Programme” organized by NITTTR, Kolkata in BCE Bhagalpur, 9th-18th Nov. 2016.
- Attended and Presented Paper at National Conference on Emerging Trends in Electrical and Electronics Engineering at NITTTR Kolkata on 29-30 Jan 2016.
- Attended workshop on “LabVIEW based system design for multidisciplinary Engineering applications”, at MAKAUT, WB, 2nd-6th Nov. 2015.
- Undergone training on “Embedded System and Image Processing” at ORC Electronics India Pvt. Ltd., Jabalpur, MP, 12th- 27th Oct. 2015.
- Attended and Presented paper “Design and Hardware Implementation of Isolation of Rectifier Circuit Created By the Use of Opto-Coupler” at International Conference on Electrical, Electronics and Computer Science at Goa on 28<sup>th</sup> August 2012.
- Attended training on “PLC programming (Siemens/ABB)” at ESTC, MSME Nainital, 18th June-13th July 2012.
- Undergone training for “Monitoring and Control by Electronic Level Instruments” by Sapcon Instruments Pvt. Ltd., Indore, MP, 6th-21st July 2011.
- Under gone vocational training at “Satpura Thermal Power Station”, Sarni, MP, 5th Aug. - 4th Sep. 2010.
- Participated in workshop on “Basic Circuit Designing & Autonomous Robotics” in SATM, Indore 18th-20th June 2010.
- Attended “3 days PCB workshop” organized by LNCT, Indore, MP, 16th-18th 2010.
- Participated in the workshop based on “artificial intelligence-based robotics”, guided by ISRO.
- Attended and Presented paper on Yubanah 2010 at Lakshmi Narain College of Technology, Indore on 16-18 April 2010.
- Attended Robotics Event of Meteorics/Spandan at Malwa Institute of Technology Indore on 22-27 November 2010.

## Achievements/Scholarships & Fellowships/Grants

- Selected for Visiting Faculty in Tong Duc Thung University (TDTU) Vietnam from Sep 2025 - Aug 2026.
- Received Grant from MPCST for the celebration of National Science Day 2024 as a Program Coordinator.
- Received Outstanding Emerging Student Branch of the Year 2024 Award by IEEE India Council as a Founder Branch Counselor, IIIT Bhopal
- Received International Travel Grant from Science and Engineering Research Board (SERB), Department of Science and Technology, Government of India, GoI to present the research paper at 9th IEEE International Conference on Automatic Control and Intelligent at Shah Alam (29 June 2024), Malaysia.
- Coordinated the celebration of National Science Day 2024, and received the grant from MPCST under Science and Technology Popularization Scheme.
- Secured position among the top 2% of the scientists for the year 2023 (data released by Stanford University).
- Received Best “Chapter Advisor Award” of IEEE Photonics Society CUSB from Chandigarh University for the year 2022-2023.
- Received fellowship for “Visiting Faculty” at “Izmir Institute of Technology, Turkey” under International Faculty Fellowship Program (IFFP) 2022 from Chandigarh University, India
- Received “Transformative Researcher of the Department Award for the Year 2022” by Chandigarh University on 05/09/2022.
- Received best paper awards in two research papers at the 1st International Conference on Recent Developments in Electronics and Communication Systems (RDECS), 22-23 July 2022.
- Got IIT Guwahati Institute Post-Doctoral Fellowship for Post-Doctoral Research for session 2020-2021, 2021-2022.
- Selected for IEEE R10 SAC Membership Development and Leadership Training Fund 2019 for Accelerating Membership Development Drive and Leadership Training Programs at NIT Agartala.
- Best Poster award received on Research Scholars' Day, at NIT Agartala, 1st Feb. 2018
- Got MHRD scholarship for PhD in 2016-17, 2017-2018, 2018-19.
- Got “A+ grade” in the training of “PLC programming”, organized by ESTC, MSME, Nainital, July 2012.
- Selected for the player of under 19 “Association of Nalanda District Cricket” in the 2007-08 session.

## Administrative/Academic Experiences/Responsibilities

- Serving a Joint Secretary, Prakash Bharati (A Group of Photonics Professionals in India, Supported by IEEE Photonics Society) from January 2026.
- Serving as Head of Centre of Excellence- GSRL from Aug 2025 onwards.
- Served as the Head of Advanced Photonics and Cyber Physical System Research Lab IIIT Bhopal during 2023 to 2025.
- Successfully Coordinated the MoU of Galgotias University with Entuple Technologies Pvt. Ltd. in 2025.
- Successfully Coordinated the MoU of Galgotias University with E&ICT Academy, NIT Patna in 2025.
- Successfully Coordinated the MoU of Galgotias University with Ansys Inc. in 2025.
- Member of Anti-Ragging Committee of IIIT Bhopal for AY- 2023-24, 2024-24.
- Serving as a PG coordinator, ECE department of IIIT Bhopal.
- Founder Branch Counselor of IEEE IIIT Bhopal Student Branch from AY-2023 -24 to AY-2024-25.
- Successfully Coordinated the MoU of Galgotias University with EduPedia Technologies, Delhi (On behalf of COMSOL Multiphysics Private Ltd. Bangalore in 2025).
- Successfully Coordinated the MoU of Galgotias University with VLSI Society of India in 2024.
- PhD. Examiner at Chandigarh University, 2024.
- Question Paper Evaluator for Summative Examination- Digital University, Kerala, 2024.

- Chair, Social media, IEEE Madhya Pradesh Section Execom 2025-2026.
- Vice-Chair, Social media, IEEE Madhya Pradesh Section Execom 2024-25.
- Served as a Chief Information Security Officer, IIIT Bhopal.
- Successfully Coordinated the MoU of IIIT Bhopal with CSIR-CRRI, New Delhi in 2024.
- Successfully Coordinated the MoU of IIIT Bhopal with PHN Technology Pvt. Ltd. Pune in 2024.
- Member of Anti-Ragging Committee of IIIT Bhopal for AY- 2023-24, 2024-24.
- Serving as a PG coordinator, ECE department of IIIT Bhopal.
- Founder Branch Counselor of IEEE IIIT Bhopal Student Branch from AY-2023-24 to AY-2024-25.
- Faculty coordinator, ECE 3rd Year, IIIT Bhopal, from July 2023 onwards.
- Lab Coordinator, ECE Lab, IIIT Bhopal, from July 2023 onwards.
- Served as a “Visiting Faculty” at the EED of Izmir Institute of Technology, Izmir, Turkey in between the Fall Semester (Oct 22 – Jan 2023) under the International Faculty Fellowship Programme of Chandigarh University.
- Member of Departmental Research Committee (DRC) of EED, Chandigarh University (AY- 2022-23).
- Member of Discipline cum Anti-Ragging Squad of Department of Student Affairs, Chandigarh University (AY-2022-23).
- Served as a Chapter Advisor of IEEE Photonics Society Chandigarh University Student Branch Chapter from 07th March 2022 to 07th March 2023.
- Founder and the Past Chairman of IEEE Student Branch of NIT Agartala from 23/03/2019 – 22/03/2020.
- Member of the mess committee of RNT Hostel of NIT Agartala during Even Semester 2018-19.
- Taken various laboratory classes as a Teaching Assistant during PhD and Post Doctoral Research tenure.
- Member of anti-ragging squads of BCE, Bhagalpur for odd-semester from Aug.-Dec. 2016

## Establishment of New Lab(s)

- Name(s) of lab established- Centre of Excellence (CoE) - Galgotias Semiconductor Research Lab (GSRL) Academic Year- 2025-26, Department Concerned-Galgotias University, India
- Name(s) of lab established-Advanced Photonics and Cyber Physical Systems (APCPS) Lab, IIIT Bhopal, Academic Year- 2024-25, Department Concerned-Electronics and Communication Engineering, No. of experiments-10

## Projects Undergone

(UG) B.E. Opto-coupler based isolation circuit for three phase-controlled converter

(PG) M.Tech Design and Development of Robot for Video Streaming

(Doctoral) PhD. Modelling of Silicon Micro-Ring Resonator Based All-Optical Logic Circuits And Their Applications

## PhD Thesis (Supervised - 2, Ongoing 0)

Thesis Title Numerical Investigation of Photonic Crystal Structure For Sensing Applications

Name of Scholar Mr. Rohit Kumar (UID -20YEE1001)

Year of Award March 2024

Role Co-Supervisor

Thesis Title Design And Performance Analysis Of An Efficient And Heterojunction Based Multilayer Photo-Detector

Name of Scholar Ms. Gazia Manzoor (UID -20YEE1002)

Year of Award Feb 2024

Role Co-Supervisor

## Intern Supervision (Supervised - 7, Ongoing 0)

Name of Scholar	Title	Theoretical Modelling and Analysis of Quantum Phase Gates
	Year	2025
Name of Scholar	Title	2D Photonic Crystal Based Biosensor For Pancreatic Cancer Detection
	Year	2025
Name of Scholar	Title	Cyber Physical System Based Distributed Real Time Draining System for Smart Cities
	Year	2025
Name of Scholar	Title	Cyber Physical System Based Wearable Health Monitoring Device For Defense Applications
	Year	2024
Name of Scholar	Title	Mr. Avishek Golder
	Year	2024
Name of Scholar	Title	Mr. Anubhav Kumar Pandey
	Year	2024
Name of Scholar	Title	Development of Programmable Interface for FBG Sensors Assisted Plantar Pressure Measuring Device
	Year	2024
Name of Scholar	Title	Mr. Tarak Khurana
	Year	2024
Name of Scholar	Title	Theoretical Investigation and Comparison of Different Plantar Pressure Measuring Devices
Name of Scholar	Title	Mr. Ramandeep Singh
	Year	2024
Name of Scholar	Title	Programmable Swap Gate for Quantum Computing Applications
Name of Scholar	Title	Mr. Kabir Gaba
	Year	2024

## PG Dissertation/Project Guided (Supervised - 2, Ongoing - 0)

Name of Scholar	Thesis Title	Modelling and Performance Analysis of Lab on Chip 2D Photonic Crystal for detection of diseases
	Year of Award	2023
	Role	Supervisor
Name of Scholar	Thesis Title	Ms. Rupinder Kaur (UID - 21MEC1016)
	Year of Award	2023
	Role	Supervisor
Name of Scholar	Thesis Title	Modelling and Numerical Investigation of Graphene Assisted SIW Patch Antenna for Different Applications in X-band
	Year of Award	2023
	Role	Supervisor
Name of Scholar	Thesis Title	Mr. Mainpal (UID- 21MSP1062)
	Year of Award	2023
	Role	Supervisor

## UG Dissertation/Project Guided (Supervised - 45, Ongoing - 0)

Title **Cyber-Physical System Based Secure Communication for e-Governance Using Quantam Key Distribution**

Name Arya Sharma, Anushka Sinha, Anish Kumar Singh

Role Supervisor

Title **Decentralized Voting Using Ethereum Blockchain**

Name Abdur Rafay, Jayant Singh, Sahil Phulwani, Rudra Bhagat

Role Supervisor

Title **Design and Development of Minebot**

Name Neeraj Kumar Das, Inderjeet Singh, Tarun Garg

Role Supervisor

Title **Design and Development of Home Automation System Using Arduino and Bluetooth**

Name Manasvi, Pranav Gupta

Role Supervisor

Title **Sign Language Recognition Using Python**

Name Amaan Ullah Siddiqui, Saloni Chaudhary

Role Supervisor

Title **Theoretical Study and Designing of Quantum Gates**

Name Manmeet

Role Supervisor

Title **Disease Prediction with 1D-Photonic Sensor Using Machine Learning**

Name Vaibhav Singh, Akshay Rahangdale, Yasho Vardhan Gweley, Heeran Kumawat

Role Supervisor

Title **Image to Pencil Sketch**

Name Shubham Tripathi, Shivam Kumar Singh, Mayank Sardana

Role Supervisor

Title **Emotion Based Music Player**

Name Aman Kumar Ghosh, Asad Amanullah, Debdulal Das, Harsh Kumar Gupta, Himanshu Affaria

Role Supervisor

Title	<b>Weather Forecasting App</b>
Name	Anshul Bharat, Abhijeet Ranjan, Suraj Yadav
Role	Supervisor
Title	<b>A Cloud-Based Real Time Weather Reporting System Using IoT</b>
Name	Aisheek Mazumder
Role	Supervisor
Title	<b>Customer Support Bot</b>
Name	Bhavya Singh, Himanshu Kumar, Suraj Kumar, Aman Prakash Sharma
Role	Supervisor
Title	<b>AI Virtual Mouse</b>
Name	Aditya Kumar Singh, Arjun Singh Chandel, Harsh Gupta, Tushar Kathuria
Role	Supervisor
Title	<b>Stock Price Prediction</b>
Name	Jlex Laimayum
Role	Supervisor
Title	<b>Face Detection</b>
Name	Pranshu Mishra
Role	Supervisor
Title	<b>Greenhouse Monitoring System</b>
Name	Anurag Aditya, Kanchan Kumari, Neha Yadav
Role	Supervisor

## List of accepted/published journal papers

2026 [31] I. J. M. Aslam, G. N. Nirala, A. Sahoo, Y. K. Awasthi, A. Patel, **G. K. Bharti**, S. Kumar, "Modelling and Experimental Development of FBG based Plantar Pressure Platform for Biomedical Clinical Applications", IEEE Photonics Journal (under review)

2026 [30] P. Sah, A. Ranjan, R. Kumar, K. Kumar, R. Ranjan, N. Kumar, B. Neole, **G. K. Bharti**, "High-Q Optical Filter in Silicon-On-Insulator Waveguide Using Distributed Bragg Gratings", Optical Engineering (under review)

2026 [29] I. J. M. Aslam, S. Goel, P. Sah, Y. K. Awasthi, **G. K. Bharti** "FBG Sensors Assisted Programmable Device for Plantar Pressure Measurement", IEEE TRANSACTIONS ON PLASMA SCIENCE (Accepted)

2026 [28] G Saxena, H Singh, YK Awasthi, **G. K. Bharti**, "Compact Circularly Polarized 4-Element X-Band MIMO Antenna with High Absorbance SWB Single Layer Metasurface: Enabling High Gain and Low RCS" Journal of Electronic Materials, 55, pages 2258–2273, (2026).

2026 [27] S. Devendran, , V. Janarthanan, S. Santhosh, S. M. Basha, S. Roychoudri, J. K. Rakshit, **G. K. Bharti**, M. Hossain, "Modelling and Theoretical Investigation of Microring Resonator Assisted Reversible Logic Circuits for All-Optical Data Transmission", Brazilian Journal of Physics., 56 (2026)

2025 [26] S. Tiwari, **G. K. Bharti**, A. S. Abdullah "Numerical Analysis of Polarization-Driven Single Qubit Pauli Gate Operations", Optoelectronics and Advanced Materials - Rapid Communications, 19 (9-10), 2025.

2024 [25] P. Sah, Pushpalata, M. Kumar, P. Mirajkar, B. Neole, A. Srivastav, **G. K. Bharti**, "Compact broadband optical filter with perturbed Bragg gratings in silicon-on-insulator waveguide," Optical Engineering, 63 (9), (2024).

2024 [24] P. Sah, D. Kumar, P. R. Yashaswini, A. Srivastava, B. Kumar, A. Amphawan, **G. K. Bharti**, "Integrated optical ring resonator-based comb filter in silicon-on-insulator with through-to-add port feedback path showing larger free spectral range," Journal of Nanophotonics, 18 (2), (2024).

2024 [23] J. Yadav, S. K. Tripathy, **G. K. Bharti**, N. Kumar, "Numerical Investigation of Novel 2D Photonic Structure for Cancerous Cell Detection," Compact Broadband Optical Filter with Perturbed Bragg Gratings in SOI Waveguide, The European Physical Journal Plus, 308 (2024).

2022 [22] G. Manzoor, K. K. Sharma, **G. K. Bharti**, D. Nath, "Modelling and Performance Analysis of CuPc and C60 based Bilayer Organic Photodetector," International Journal of Electrical and Electronics Research, 10 (4), (2022).

2022 [21] R. Kumar, **G. K. Bharti**, R. Bindal, "Modeling and Simulation of an Optical Sensor for Cancer Cell Detection," International Journal of Electrical and Electronics Research, 10 (4), (2022).

2022 [20] R. Kumar, **G. K. Bharti**, R. Bindal, "Detection and Analysis of Bacterial Water using Photonic Crystal," Ring-Resonator Based Refractive-index Sensor on SOI Platform, *International Journal of Electrical and Electronics Research*, 10 (4), (2022).

2022 [19] K. K. Choure, **G. K. Bharti**, A. Saharia, N. Mudgal, A. Bhatnagar, G. Singh, "Design and Simulation of All-Optical Swap and Fredkin gates using Mode-Rotation based Race-Track Ring Resonator," *Optical and Quantum Electronics*, 54, 276 (2022).

2022 [18] **G. K. Bharti**, R. K. Sonkar, "Design and performance analysis of all-optical D and T flip-flop in a polarization rotation based micro-ring resonator," *Optical and Quantum Electronics*, 54, 176 (2022).

2021 [17] **G. K. Bharti**, R. K. Sonkar, "Implementation of polarization rotation using microring resonator and its application to design all-optical switch," *Optical Engineering*, 60 (8), 085109 (2021).

2021 [16] **G. K. Bharti**, R. K. Sonkar, "Implementation of polarization rotation using microring resonator and its application to design all-optical switch," *Optical Engineering*, 60 (8), 085109 (2021).

2021 [15] **G. K. Bharti**, J. K. Rakshit, "Design of all-optical logical mode-switching using micro-ring resonator," *Optical Engineering*, 60 (3), 035103 (2021).

2021 [14] J. K. Rakshit, K.E. Zoiros, **G. K. Bharti**, "Proposal for ultrafast all-optical pseudo random binary sequence generator using micro ring resonator-based switches," *Journal of Computational Electronics*, 20 (2021).

2021 [13] U. Biswas, J. K. Rakshit, J. Das, **G. K. Bharti**, B. Suthar, A. Amphawan, M. Najjar, "Design of an ultra-compact and highly-sensitive temperature sensor using photonic crystal based single micro-ring resonator and cascaded micro-ring resonator," *Silicon*, 13, (2021).

2020 [12] A. E. Arumona, I. S. Amiri, S. Punthawanunt, K. Ray, G. Singh, **G. K. Bharti**, P. Yupapin, "3D-quantum interferometer using silicon microring-embedded gold grating circuit," *Microscopy Research and Technique*, 83 (10) (2020).

2020 [11] A. Garhwal, K. Ray, A. E. Arumona, **G. K. Bharti**, I. S. Amiri, P. Yupapin, "Spin wave generation using MZI embedded plasmonic antennas for quantum communications," *Optical and Quantum Electronics*, 52(5) (2020).

2020 [10] **G. K. Bharti**, M. P. Singh, J. K. Rakshit, "Design and Modeling of Polarization-Conversion Based all- Optical Basic Logic Gates in a Single Silicon Ring Resonator," *Silicon*, 12, (2020).

2020 [8] U. Biswas, J. K. Rakshit, **G. K. Bharti**, "Design of photonic crystal microring resonator based all-optical refractive-index sensor for analyzing different milk constituents," *Optical and Quantum Electronics*, 52 (19), (2020).

2019 [8] **G. K. Bharti**, U. Biswas, J. K. Rakshit, "Design of micro-ring resonator based all optical universal reconfigurable logic circuit," *Optoelectronics And Advanced Materials – Rapid Communications*, 13 (7-8), 2019.

2019 [7] **G. K. Bharti**, J. K. Rakshit, M. P. Singh, P. Yupapin, "Design of all-optical universal logic gates using mode-conversion in single silicon microring resonator," *Journal of Nanophotonics*, 13 (3), 2019.

2019 [6] **G. K. Bharti**, J. K. Rakshit, "Micro-ring resonator based all optical reversible logic gates and its applications," *Optoelectronics And Advanced Materials – Rapid Communications*, 13 (1-2), 2019.

2019 [5] **G. K. Bharti**, J. K. Rakshit, S. S. Pal, "Design and modeling of mode-conversion in ring resonator and its application in all-optical switching," *Microsystem Technologies*, 25 (1), 2019.

2018 [4] **G. K. Bharti**, J. K. Rakshit, "Design and Performance Analysis of High Speed Optical Binary Code Converter using Micro-Ring Resonator," *Fiber and Integrated Optics*, 37(2), 2018.

2018 [3] **G. K. Bharti**, J. K. Rakshit, "Design of all-optical JK, SR and T flip-flops using micro-ring resonator-based optical switch," *Photonic Network Communications*, 35(3), 2018.

2016 [2] K. Sagar, **G. K. Bharti**, "Solarization of Petrol Pumps in India: An Environmental-Friendly Alternative and its Role in Creating Awareness," *International Journal of Science and Research*, 5(8), 2016.

2016 [1] K. Sagar, **G. K. Bharti**, "Tiny Particles & Macro Challenges: Evaluating the Rational Debate of Social and Ethical Issues in Nanotechnology," *Journal of Basic and Applied Engineering Research*, 3(12), 2016.

## List of accepted/published Conference Papers

2025 [35] A. Rafay, J. Singh, S. Phulwani, R. Bhagat, **G. K. Bharti**, Decentralized Voting System Implementation Using Ethereum Blockchain: A Comprehensive Analysis and Implementation Framework, IEEE International Conference on Smart Innovations in Systems, Infrastructure, Mechanical, Power, AI and Computing Technologies, SISTec Bhopal, 28-29 Nov, 2025 (Accepted)

2025 [34] A. Sharma, A. Sinha, A. Singh, **G. K. Bharti**, Cyber-Physical System Based Secure Communication for E-Governance Using Quantum Key Distribution, IEEE International Conference on Smart Innovations in Systems, Infrastructure, Mechanical, Power, AI and Computing Technologies, SISTec Bhopal, 28-29 Nov, 2025 (Accepted)

2025 [33] T. Khurana, N. Chaubey, I. J. M. Aslam, **G. K. Bharti**, Design and Development of Programmable Interface of FBG Sensors for Plantar Pressure Measuring Device, IEEE International Conference on Emerging Engineering Technologies and Applications (IC-EETA), Medi-caps University Indore, 6-8 Nov, 2025 (Accepted)

2025 [32] A. Golder, S. Kaur, K. Sharma, **G. K. Bharti**, Cyber Physical System Based Distributed Real Time Draining System for Smart Cities, IEEE International Conference on Emerging Engineering Technologies and Applications (IC-EETA) 2025, Medi-caps University Indore, 6-8 Nov, 2025 (Accepted)

2025 [31] R. Singh, D. Shekhawat, I. J. M. Aslam, **G. K. Bharti**, Theoretical Investigation and Comparison of Different Plantar Pressure Measuring Devices, International Conference on Smart Generation Communication ,Computing and Networking, (SMARTGEN 2025), Bali, Indonesia, 10-12 Oct, 2025 (Accepted)

2025 [30] N. Faujdar, P. Goswami, S. Kumar, **G. K. Bharti**, I. J. M. Aslam, Design and Development of Four Leg Walker using IOT, IEEE International Conference on Compute, Control, Network & Photonics, TOCE Bangalore, 18-19 Sep, 2025 .

2025 [29] M. Gogoi, P. Goswami, S. Kumar, **G. K. Bharti**, I. J. K. Aslam NeuroSonoNet: A Deep Learning Enhanced Ultrasound Nerve Segmentation Systems, IEEE International Conference on Compute, Control, Network & Photonics, TOCE Bangalore, 18-19 Sep, 2025.

2025 [28] I. J. M. Aslam, A. Yadav, **G. K. Bharti**, D. S. Bhat, G. R. S. Kumar, J. B. Shreesha, A. Amphawan, Design and Analysis of D-shaped Optical Fiber Biosensor for Human Teeth Disease Detection, International Conference on Computer, Information Technology and Intelligent Computing 2025 (CITIC 2025), Multimedia University, Malyasia, 21-23 July

2025 [27] I. J. M. Aslam, S. Jamuna, G. K. Bharti, R. Kavya, Khushi, S. A. Ibrahim, A. Amphawan, Design and Simulation of Radiation-Hardened Conductive-Bridge RAM Cell Towards Durable Artificial Intelligence Chips, Multimedia University Engineering Conference 2025 (MECON 2025), Multimedia University, Malyasia, 21-23 July

2025 [26] I. J. M. Aslam, R. V. Honnungar, **G. K. Bharti**, S. Suresh, S. Setlur, A. Amphawan, "Design and Development of a Wearable Device for Knee Joint Health Monitoring"International Conference on Computer, Information Technology and Intelligent Computing 2025 (CITIC 2025), Multimedia University, Malyasia, 21-23 July

20225 [25] K. Gaba, S. Tiwari, K. Sharma, **G. K. Bharti**, "Programmable Swap Gate for Quantum Computing Applications." 6<sup>th</sup> International Conference for Emerging Techonology (INCENT), Karnataka, India, May 23-24, 2025

2025 [24] A. P. Narayan, I. Jahan Mohammed Aslam and G. K. Bharti, "Modelling of Fiber Bragg Grating for Biomechanical Pressure Sensing," 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI), Gwalior, India, 6-8 March, 2025.

2025 [23] S. Tiwari, G. K. Bharti and M. K. Chhipa, "Theoretical Investigation of Single-Qubit Hadamard Gate," 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI), Gwalior, India, 6-8 March, 2025

2025 [22] A. K. Pandey, S. Kaur, **G. K. Bharti**, "Cyber Physical System Based Wearable Health Monitoring Device For Defense Applications" IEEE International Conference on Emerging Technologies 2025, ABV-IIITM Gwalior, India, Feb 21 - 23, 2025

2024 [21] A. Shankarpurkar, M. Meet, V. Chatterjee, M. Khairnar, **G. K. Bharti**, "Programmable Quantum Gates for Classical Computing Applications," 9th IEEE International Conference on Automatic Control and Intelligent Systems (I2CACIS 2024), June 29, 2024.

2024 [20] A. Rahangdale, V. Singh, H. Kumawat, Y. V. Gwaley, G. N. Nirala, **G. K. Bharti**, "Design And Modelling of Machine Learning Based Photonic Sensor For Different Disease Detection," 9th International Conference on Integrated Circuits, Design, and Verification (ICDV 2024), June 6-8, 2024.

2023 [19] Mainpal, **G. K. Bharti**, "Modelling and Numerical Investigation of Graphene Assisted SIW Patch Antenna for Different Applications in X-band," 3rd Asian Conference on Innovation in Technology (ASIANCON), 2023.

2023 [18] K. K. Choure, **G. K. Bharti**, A. Saharia, N. Mugdal, G. Singh, "Modelling of SWAP Gate Using Compact Ring Resonator," International Conference on Optical and Wireless Technologies, Springer, Singapore, 2023.

2023 [17] R. Kaur, **G. K. Bharti**, A. Tripathi, "Modeling of 2D Photonic Crystal Based Sensor for the Detection of Tuberculosis Disease," 2023 IEEE 8th International Conference for Convergence in Technology (I2CT), Lonavla, India, pp. 1-4, 2023.

2023 [16] G. Manzoor, K. K. Sharma, **G. K. Bharti**, "Modeling and Simulation of Heterojunction Based Multilayer High-Speed Vertical CIGS Photodetector," 2023 International Conference for Advancement in Technology (ICONAT), Goa, India, 2023.

2022 [15] R. Kumar, **G. K. Bharti**, R. Bindal, "Optimization and Comparative Analysis of PhCRR Based Sensor with Distinct Structures," 2022 International Conference on Futuristic Technologies (INCOFT), Belgaum, India, 2022.

2022 [14] G. Manzoor, K. K. Sharma, **G. K. Bharti**, "Enhanced Wideband Photoresponse and Detectivity in In2S3/CIGS Heterojunction Based Photodetector," 2022 International Conference on Smart Generation Computing, Communication and Networking (SMART GENCON), 2022.

2022 [13] R. Kumar, **G. K. Bharti**, R. K. Bindal, "Modeling, Optimization and Performance Analysis of Different Chemical and Biochemical Sensors for Distinct Analytes," 3rd Global Conference for Advancement in Technology (GCAT), 2022.

2022 [12] R. Kaur, **G. K. Bharti**, A. Tripathi, "Modelling Of 2D Photonic Crystal Based Micro Ring Resonator Sensor For The Detection Of Malaria," 2nd Asian Conference On Innovation In Technology (2nd Asiancon 2022), 26-28 August 2022.

2022 [11] N. Saurabh, P. Jain, R. Katoch, S. Pandey, V. Nikam, A. Behal, **G. K. Bharti**, "Efficient Face Mask Detection For Different Surveillance Applications Using Python," 2nd Asian Conference On Innovation In Technology (2nd Asiancon 2022), 26-28 August 2022.

2022 [10] **G. K. Bharti**, A. Ranjan, A. Bharat, S. Yadav, "Design and Development of an Efficient and Intelligent Weather Forecasting App," 1st International Conference on Recent Developments in Electronics and Communication Systems (RDECS-22), 22-23 July 2022.

2022 [9] P. Mishra, **G. K. Bharti**, "Efficient Face Detection for Distinct Multimedia using Object-Oriented Programming," 1st International Conference on Recent Developments in Electronics and Communication Systems (RDECS-22), 22-23 July 2022.

2022 [8] A. Mazumder, **G. K. Bharti**, "A cloud-based real-time weather reporting system using IoT," 1st International Conference on Recent Developments in Electronics and Communication Systems (RDECS-22), 22-23 July 2022.

2021 [7] **G. K. Bharti**, R. K. Sonkar, "Modeling of Polarization Rotation Based All Optical Logic Switch Using Ring Resonator," 10th IEEE CPMT Symposium Japan 2021 (ICSJ 2021), 10-12 November 2021.

2021 [6] **G. K. Bharti**, R. K. Sonkar, "Modeling of polarization-rotation based photonic D flip-flop using a compact micro-ring resonator," 21st International Conference on Numerical Simulation of Optoelectronic Devices (NUSOD 2021), 13-17 September 2021.

2020 [5] M. P. Singh, J. K. Rakshit, U. Biswas, **G. K. Bharti**, A. Tiwari, "Design of all-optical OR/AND logic gates using conversion of polarized states in single-waveguide coupled ring-resonator," IEEE International Conference on Computational Performance Evaluation (ComPE 2020), 02-04 July 2020.

2019 [4] M. P. Singh, **G. K. Bharti**, J. K. Rakshit, U. Biswas, "Design of polarization switch in a single micro-ring resonator and its application to design all-optical logic OR/NOR gates using FDTD," International Conference on Electrical, Electronics and Computer Engineering (UPCON 2019), 08-10 November 2019.

2019 [3] U. Biswas, **G. K. Bharti**, J. K. Rakshit, "Design of photonic crystal based sensor for analyzing water content in milk," International Conference on Innovation in Modern Science and Technology (ICIMSAT 2019), 20-21 September 2019.

2019 [2] **G. K. Bharti**, J. K. Rakshit, "All-optical logic AND/NAND gates using two symmetric micro-ring resonators," International Conference in Optical and Photonic Engineering (icOPEN 2019), 16-20 July 2019.

2018 [1] S. S. Pal, **G. K. Bharti**, J. K. Rakshit, U. Biswas, "Implementation of polarization-conversion in ring-resonator and its application to design all-optical NOT logic gate," International Conference for Convergence in Technology (I2CT 2018), 06-08 April 2018.

## **BOOK/CHAPTERS (Textbook/Reference) - Authorship**

### **Book-Light and Intelligence as Bridges: An Introduction to Photonics and Cyber-Physical Systems**

Gaurav Kumar Bharti, Anandita Goswami

ISBN: 978-93-47494-26-0, Verses Kindler Publications, India

### **Book-Quantum Photonics and Artificial Intelligence: Transforming Healthcare with Machine Learning**

Gaurav Kumar Bharti, Rajeev Ranjan, Ibrar Jahan M A, Santosh Kumar, Angela Amphawan  
(Submitted)

### **Book-Intelligent Photonic Systems: AI-Powered Advances in Computing, Sensing and Communication.**

Archana Yadav, Ibrar Jahan M A, Gaurav Kumar Bharti  
(Accepted)

### **Book-45 days Kokborok Speaking Course (in press)**

Ajita Tripura, Gaurav Kumar Bharti  
Directorate of Kokborok & Other Minority Languages

### **Book-Fundamentals of Semiconductors Devices**

Gaurav Kumar Bharti, Nudrat Sufiyan, P.R. Yashaswini, Ibrar Jahan M A  
Scientific International Publishing House (SIPH), India  
ISBN:978-93-5757-488-4; Year-2023

### **Book- Flexible and Wearable Electronics for Future Technology Using AI**

### **Chapter- SPR-based Intelligent Biosensors: Design, Development, and Applications**

Archana Yadav, Ibrar Jahan M A, Sarita S, Srujana R, Gaurav Kumar Bharti

Bentham Science Publishers.

(Accepted)

### **Book- Qubits Beyond Earth: Quantum Computing for Satellite and Space Innovations**

### **Chapter- Quantum Key Distribution (QKD) Technique for Secure Communication**

Ibrar Jahan M A, Gaurav Kumar Bharti, Nirmala M A, Rajini V Honnungar

Springer

(Accepted)

### **Book- Qubits Beyond Earth: Quantum Computing for Satellite and Space Innovations**

### **Chapter- Fundamentals of quantum computing, Qubits entanglement and superposition, gates and algorithms**

Archana Yadav, Ibrar Jahan M A, Sarita S, Srujana R, Gaurav Kumar Bharti

Springer

(Accepted)

### **Book- Advanced Optical Sensors for Aerospace Applications**

### **Chapter- FBG Sensor Applications in Aerospace Engineering**

VR Balaji, MA Ibrar Jahan, G.K. Bharti, A. Yadav, Srujana, R. V. Honnungar

978-981-95-1626-1, vol 37. Springer, Singapore. [https://doi.org/10.1007/978-981-95-1626-1\\_4](https://doi.org/10.1007/978-981-95-1626-1_4)

## **Book- AI-Driven IoT Systems for Industry 4.0**

### **Chapter- Implementation of Intelligent CPS for Integrating the Industry and Manufacturing Process**

T. Rajasanthosh Kumar, Mahesh. M. Kawade, **Gaurav Kumar Bharti**, G. Laxmaiah

Taylor and Francis Group, CRC Press

ISBN:978-10-0343-231-9; Year-2024

## **Book-Contemporary Developments in High-Frequency Photonic Devices**

### **Chapter-All optical switching and logic gates design using mode (polarization)- conversion in micro-ring resonator**

Jayanta Kumar Rakshit, **Gaurav Kumar Bharti**

IGI Global Publishers

ISBN 978-15-2258-533-6; Year-2019

## **Book/Chapter (Textbook/Reference)-Editorship**

### **Book-Crypto Currency and Block Chain Technology**

Gaurav Kumar Bharti, Mukta Sandhu, Ganesh Gupta, T. Venkata Satya Vivek

Scientific International Publishing House (SIPH), India

ISBN: 978-93-5757-308-5; Year-2023

### **Book-Leveraging Artificial Intelligence in Quantum Photonics and Electronics for Urban Development (Submitted)**

Gaurav Kumar Bharti, Rajeev Ranjan, Anandita Goswami, Angela Amphawan

Taylor and Francis Group, CRC Press

(Submitted)

## **Patents**

### **Device and Method of Measurement of Planter Pressure Of A User**

**Application Number- 202521034439**

Gaurav Kumar Bharti, Ibrar Jahan M. A. , Anand Prakash Narayan

Published by Indian Patent Office, India on 11/07/2025, *Grant under examination*

### **Wireless Laptop Charger Cum Cooling Pad**

**Application Number- 385882-001**

Soumya Ranjan Jena, Subhajit Roy, Narendra Nath Jana, Rishabh Dev Shukla, **Gaurav Kumar Bharti**, Narendra Kumar

Published by Indian Patent Office, India on 14/07/2023

### **Automated Auditing System For Data Integrity And Verification Using Blockchain Technology**

**Application Number - 202311034198**

Devender Kumar, Aman Gupta, Ajit Kaswan, Tumma Srinivasarao, **Gaurav Kumar Bharti**, Sanju Das

Published by Indian Patent Office, India on 23/06/2023

**Large FSR Ring Resonator in Silicon-on-Insulator with Through-to-ADD Port Feedback Path**  
**Application Number-202331053160**

Parimal Sah, Pushpalata, P. R. Yashaswini PR, Gaurav Kumar Bharti, Ranjan Kumar, Abhinav Kumar

Published by Indian Patent Office, India on 14/07/2025, Grant under examination

## **Copyright(s)**

**An Innovative Approach for Detecting cyber-physical attacks in Cyber Manufacturing systems :  
A Deep Transfer Learning Mode.**

S. S. Sivasankari, M. Soni, M. A. Rusho, N. Marathe, K. S. Yogi, G. K. Bharti

Canadian Copyright, Ref. no. 1214447, June 2024

## **Past/Ongoing Research Collaborations**

<b>Prof. Angela Amphawan</b>	Professor and Head, Smart Photonics Lab, Sunway University, Malaysia Former Deputy Vice-Chancellor and Professor of University Malaysia of Computer Science & Engineering (UNIMY), Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, 02139 Massachusetts, USA
<b>Prof. Monia Najjar</b>	Managing Director and Professor, Higher Institute of Computer Science, University of Tunis El Manar, Tunisia
<b>Prof. KIVILCIM YÜKSEL</b>	Professor Electronics Engineering Department. Izmir Institute of Technology, TR-35430 Urla, Izmir, Türkiye
<b>Prof. Tran Thanh Phuong</b>	Dean of Faculty of Electrical and Electronics Engineering, Head of Department of Electronics and Telecommunications Engineering Ton Duc Thang University, HCM City, Vietnam
<b>Prof. Ahmad S Abdullah</b>	Professor University of Diyala, Iraq

## References

<b>Prof. Jayanta Kumar Rakshit</b>	Associate Professor, Electronics & Instrumentation Engineering Department, NIT Agartala
<b>Prof. Ramesh Kumar Sonkar</b>	Professor, Department of Electronics and Electrical Engineering, IIT Guwahati
<b>Prof. Ghanshyam Singh</b>	Professor, Department of ECE, MNIT Jaipur
<b>Prof. T Srinivas</b>	Professor, Department of ECE, IISc Bangalore
<b>Prof. Saurabh Kumar Pandey</b>	Associate Professor, EEE Deptt., IIT Patna
<b>Mr. Deepak Mathur</b>	Board Member, MGA and Former Vice President, MGA, IEEE

I hereby declare that the information given above is true and best of my knowledge.

**Date:** .....

**Sign** .....

**Place** .....

**Name :** Dr. Gaurav Kumar Bharti