International Journal of Innovative Technology and Exploring Engineering (IJITEE)
ISSN: 2278-3075 (Online), Volume-15 Issue-1, December 2025

Recent Trends and Innovations in Laser Technologies

Shailaj Kumar Shrivastava, Chandan Shrivastava

Abstract: ***The facility for laser technology offers significant research opportunities for scientists and researchers working in fibre lasers, quantum lasers, ultrafast lasers, 3D laser printing, miniaturisation, and laser-related two-dimensional materials. The field of research using lasers encompasses holography, optical information/data storage, processing, telecommunications, manufacturing, health care, space exploration, and computing, among others. The introduction of intelligent software solutions and emerging technologies into laser systems enhances real-time process optimisation, predictive maintenance, and monitoring, thereby improving accuracy, efficiency, and quality. The role of emerging software like artificial intelligence (AI), machine learning (ML), augmented reality (AR) interface, and digital twins, with the emergence of innovative technologies like robotics, computer-aided design (CAD), and smart sensors in laser processing and advanced modelling and simulation techniques driven by these technologies, will be given special attention.***

Keywords: Laser Materials, Laser Processing, Artificial Intelligence, Machine Learning, Simulation, Quantum Laser.

Nomenclature:
AI: Artificial Intelligence
ML: Machine Learning
TMDs: Transition Metal Dichalcogenides
IoT: Internet of Things
GGG: Gadolinium Gallium Garnet
FEM: Finite Element Method
MD: Molecular Dynamics
OCT: Optical Coherence Tomography
GE: General Electric
AR: Augmented Reality
CAD: Computer-Aided Design
TMDs: Transition Metal Dichalcogenides

I. INTRODUCTION

Lasers (light amplification by stimulated emission of radiation) are electromagnetic radiation whose photons are in phase, have equal frequencies, and constructively interfere, and are characterised by unique properties such as spatial coherence, high monochromaticity, directionality, and high intensity. Laser operation requires control over parameters such as the laser power, beam shape, energy distribution, and beam trajectory. The integration of laser processing with artificial intelligence (AI) and machine learning (ML) techniques into the laser manufacturing process enables enhanced defect detection, real-time error correction, adaptive control strategies, real-time process monitors, non-invasive safety, and feedback mechanisms [1].

Computational techniques, including sophisticated algorithms, digital twins, and advanced simulation systems, can enhance the precision, adaptability, optimisation, efficiency, and performance of laser operations, leading to rapid advancements in automation, precision engineering, and smart manufacturing. Lasers are used for autonomous pest control, in agriculture, laser headlights in automobiles, wireless power transmission, and optical data storage. High-power lasers support isotope separation and nanoparticle creation, whereas hybrid lasers combine CO_2 and fibre lasers in a single system for greater versatility. Ultrafast lasers offer submicron accuracy and non-thermal material removal for delicate thin films, polymers, and semiconductor wafers. Laser equipment with high efficiency, low energy consumption, and environmental characteristics that are noise- and pollution-free is now becoming a preferred technology across various processing sectors.

II. LASER-RELATED MATERIALS

Some solid state laser materials are $Y_3Al_5O_{12}$:Nd^{3+}(Nd:YAG), $LiYF_4$:Nd^{3+} (Nd:YLF); $Gd_3Sc_2Ga_3O_{12}$:$Cr^{3+}Nd^{3+}$(Cr,Nd:GSGG); Al_2O_3:Ti^{3+} (Ti:Sapphire); Alexandrite ($BeAl_2O_4$:Cr^{3+}); $Y_3Al_5O_{12}$: Cr^{3+},Tm^{3+},Ho^{3+} (Cr,Tm,Ho:YAG);Er^{3+}-doped silicates (Er:glass); Yb^{3+}-doped SiO_2 fiber (Yb:SiO_2); ZnSe:Cr^{2+}(Cr:ZnSe) etc. The electro optic materials are $LiNbO_3$, MgO: $LiNbO_3$, Fe: $LiNbO_3KNbO_3$, $AgGaS_2$, $AgGeSe_2$. Relatively new materials for single-frequency lasers are Er: YAG, Yb: YAG, Nd: YVO_4, Tb: YAG, Nd: $GdVO_4$, Nd:Cr: GSGG, and variants of yttrium aluminium garnet (YAG) and gadolinium scandium gallium garnet (GSGG) doped with Er, Tb, and Nd. The crystal/ materials Nd: YAG, Nd: KGW, Nd: YAP, Nd:Cr: GSGG, $LiNbO_3$, Fe: $LiNbO_3$, Gadolinium gallium garnet (GGG), Potassium dihydrogen phosphate (KDP), ADP, $Bi_4Si_3O_{12}$(BSO), HgCdTe are developed. A new laser material, Neodymium-doped Alumina crystals, offers 24 times greater thermal shock resistance than traditional Nd: YAG. A series of novel vanadate crystals, including Nd^{3+} and Yb^{3+}, doped materials such as Nd: $GdVO_4$ and Nd: $LuVO_4$, has been developed and is used in medical equipment and laser radars. Polycrystalline ceramic materials, such as Yb: YAG

Manuscript received on 26 November 2025 | First Revised Manuscript received on 29 November 2025 | Second Revised Manuscript received on 05 December 2025 | Manuscript Accepted on 15 December 2025 | Manuscript published on 30 December 2025.

*Correspondence Author(s)
Prof. (Dr.) Shailaj Kumar Shrivastava*, Department of Physics, K. L. S. College, Nawada, Magadh University, Patna (Bihar), India. Email ID: shailajshri68@yahoo.com, ORCID ID: 0000-0003-1787-8568
Chandan Shrivastava, Department of Application Developer, Oracle India Pvt. Ltd, Hyderabad (Telangana), India. Email ID: chandanshrivastava2002@gmail.com

© The Authors. Published by Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP). This is an open-access article under the CC-BY-NC-ND license http://creativecommons.org/licenses/by-nc-nd/4.0/

and Yb: Sc_2O_3, offer advantages for large-scale fabrication. The discovery and development of two-dimensional materials like graphene, black phosphorus, hexagonal boron nitride, and transition metal dichalcogenides (TMDs), which have exceptional properties for laser-optics devices, are being processed using ultrafast lasers.

III. LASER IN SCIENTIFIC RESEARCH

The primary research activities include high-resolution laser spectroscopy, nonlinear optics, laser-plasma studies, photonic devices, electro-optic materials, laser-electron acceleration in dense plasmas, real-time optical processing, laser Raman and photoluminescence, and millimetre-wave free-electron and quantum-well lasers. Work is going on in the area atomic spectroscopy (like interaction of intense laser fields with nuclear systems, wave mixing, spectroscopy of ions and short lived isotopes.), molecular spectroscopy(resonance and time resolved Raman spectroscopic studies on biological molecules, dynamic of excited states, laser photoelectron spectroscopy), laser analytical spectroscopy, laser optogalvanic spectroscopy, multiphoton ionization spectroscopy, laser optoaccoustic, laser-induced fluorescent spectroscopy, laser spectroscopy techniques for trace analysis etc. Techniques like user-induced breakdown spectroscopy and Raman spectroscopy analyse the composition of materials. Lasers are used for high-precision laser ablation and photolithographic fabrication to create nanostructures. Intense laser pulses can be used to study phase transitions and the behaviour of matter under extreme conditions. Laser light can cool and trap atoms and molecules, allowing scientists to study quantum phenomena and to create exotic states of matter, such as Bose-Einstein condensates. The research activities include quantum computation & quantum information, quantum optics, optical resonators, and optical fibres. Laser-based spectroscopic techniques such as photoacoustic, optogalvanic, thermal lensing, and photoionisation spectroscopy have been used in laser Raman spectroscopy, stimulated Raman scattering, photoacoustic spectroscopy, gain spectroscopy, and photoisomerism studies. Pico- and femtosecond spectroscopy has been enabled primarily by short-pulsed lasers and by dramatic advances in detection electronics and sensors. Lasers and heavy-ion beams from accelerators are increasingly used to understand processes in astrophysical and plasma environments. High-power lasers are used to heat and compress fuel pellets to achieve conditions needed for nuclear fusion, both for energy research and simulating atomic weapons. Lasers are used to generate and detect the ultrasonic waves in our universe, and for non-destructive testing of composite materials. Shearography is a non-destructive testing method that is used to analyse materials by illuminating surfaces with highly concentrated laser light. A high-power laser with 10 petawatts of emitted light is used to study extreme plasmas and the relationship between energy and matter. Lasers are used in confocal and super-resolution microscopy to visualise cellular and subcellular structures with high resolution. Laser technology enables imaging techniques such as fluorescence imaging and magnetic-field mapping in materials.

IV. EMERGING LASER TECHNOLOGIES

The integration of emerging technologies such as artificial intelligence (AI) and machine learning (ML) into laser systems enables advanced process optimisation, predictive maintenance, and real-time monitoring, thereby improving accuracy, precision, and adaptability and reducing the risk of downtime [2].

By collecting and analysing data from sensors and other real-time sources, digital twins predict and prevent defects, minimise manual intervention, enable precise adjustment of processing parameters, and contribute to the development of new materials and processes.

ML algorithms can recognise patterns in sensor data that indicate potential failures or performance degradation within a laser system, enabling preventive maintenance and avoiding costly downtime. ML can analyse complex data generated during laser-material interactions, such as cutting, welding, ablation, and material processing. ML can be used to create complex laser pulse shapes for specific applications, such as shaping pulses for precise laser surgery and proton acceleration [3]. The incorporation of machine learning algorithms in laser manufacturing processes further optimizes process parameters and enables real-time defect detection, thereby improving overall process efficiency and quality control. AI will significantly enhance the precision of laser-material interaction models, allowing the design and fabrication of highly intricate structures with superior performance characteristics [4]. A robot can be equipped with lasers to remove surface contaminants and rust, and to create precise holes and intricate patterns in materials for subsequent treatments. Internet of Things (IoT) connectivity allows communication between the laser system and innovative manufacturing processes, and provides real-time data for analysis and control. IoT-enabled systems remotely check performance, diagnose problems, and plan predictive maintenance. Innovations in high-power lasers are used in defence and nuclear fusion research. Quantum laser systems are enabling ultraprecise measurements, secure communication channels, and high-resolution imaging.

V. LASER MODELLING AND SIMULATIONS

The open-source software packages OpenFOAM (Open Field Operation and Manipulation) and COMSOL have been used to model and simulate laser material processing, such as deep-penetration welding, remote cutting, and drilling. The computer-generated complex models employ algorithms that mimic the physical interaction between a laser beam and materials, facilitating the optimisation of processing parameters such as laser power, pulse duration, scanning speed, energy distribution, beam trajectory, and laser beam shape to achieve desired processing characteristics while avoiding overheating or deformation of the material. The integration of advanced techniques like AI and ML algorithms further enhances simulation capabilities, offering both accuracy and efficiency in

© Copyright: All rights reserved.

manufacturing processes. Digital models and simulations are used to accurately predict and optimise temperature gradients in laser material processing, preventing overheating and unwanted deformations and ensuring the desired material properties. Computer models and simulations in laser material processing are crucial for understanding thermal effects, material interactions, and process dynamics, thereby reducing the need for costly physical experiments by enabling virtual testing of process parameters such as laser power and speed. This allows the design of precise and efficient laser processes, including cutting, welding, and additive manufacturing. The finite element method (FEM) and molecular dynamics (MD) are used to model laser processing, enabling optimal results. FEM is used to model thermal and mechanical phenomena during laser processing, while MD simulates material behaviour at the atomic level. The laser additive manufacturing model reveals relationships between process parameters and internal variables, including grain morphology, precipitate evolution, and phase transformation. Modelling and simulation of the laser beam machining process can be done by implementing analytical, numerical, experimental, and artificial intelligence methods. Using simulations, various processing scenarios can be pretested, significantly reducing the need for costly, time-consuming physical experiments. In the processing of composite or multilayer materials, simulation can calculate the optimal parameters in advance, minimising the risk of layer damage or undesirable structural changes. Integrating a laser system with AI and IoT, along with robotic arms and an automated workflow, can reach difficult angles and process complex 3D profiles and shapes. Laser marking software integrated with AI algorithms focuses on surface modification to optimise laser marking parameters and controls the laser's interaction with the material surface [5].

VI. ULTRAFAST LASERS

Ultrafast lasers (femtosecond and picosecond pulse durations) are growing in popularity due to their ability to deliver high precision and high material adaptability, with minimal thermal damage in micro- and nano-fabrication. These are crucial for delicate operations such as micromachining in electronics, bioimaging, and minimally invasive surgeries (e.g., LASIK and Cataract removal). The use of ultrafast lasers in remote sensing, microscopy, and spectroscopy offers new perspectives and tools for fields such as environmental monitoring, biomedicine, and materials science [6].

VII. QUANTUM LASERS

Quantum lasers will play a central role in expanding computational power and enhancing security through more efficient, faster data communication networks. The quantum laser faces challenges such as complex fabrication processes, limited material availability, and difficulties in achieving spectral stability and thermal management at compact scales. A quantum cascade laser is a special type of semiconductor laser that emits mid- to long-wave infrared light (4 to 25 μm) used for detecting and analysing gases (gas sensing), environmental monitoring, and creating highly stable, narrow-linewidth light sources for secure, high-speed internet communications. This laser enables ultra-precise measurements, enhanced data transmission, and high-resolution imaging and manipulates quantum states (qubits) in quantum computers.

VIII. SUSTAINABLE LASER

Sustainable laser minimises energy consumption, reduces waste, and eliminates the need for harmful chemicals used in traditional methods. The laser cleaning systems focus on automation, using robots and ultrafast lasers for precision cleaning. Fibre laser systems with robotic arms reduce operating costs and support environmental conservation efforts. Eco-conscious manufacturing is driving laser technology toward greater efficiency and cleanliness by using a closed-loop cooling system.

IX. MEDICAL DIAGNOSTICS

Laser technology, when integrated with advanced imaging, AI algorithms, and robotics, can enhance surgical precision, diagnostic accuracy, and automate complex procedures, enabling minimally invasive procedures that could minimise patient discomfort. Laser-based diagnostic systems generate large amounts of data, and software is used for analysis and visualisation to aid diagnosis and monitoring. Laser coupled with specialised software from advanced diagnostic tools, such as super resolution microscopy and optical coherence tomography (OCT), to create detailed 3D images of tissues and identify disease at a microscopic level. For selective cancer treatment, software can control laser-assisted drug-delivery systems using nanotechnology to activate sensitising drugs in specific cells, which are then destroyed by laser light. The most revolutionary applications of lasers in medical science include dermatologic, neurosurgical, oncological, ophthalmologic, and oral surgery, among others. Laser surgery removes excess prostate tissue by ablation and enucleation. For smooth, hair-free skin, laser treatment targets the hair root without harming the surrounding skin. CO_2 lasers for surgery and nitrogen lasers for tuberculosis treatment involve inserting a needle from the back of the patient into the cavity, then irradiating it with the nitrogen laser beam, which is transmitted through an optical fibre inserted through the needle. Exposing the burn wounds to the nitrogen laser results in complete healing. Quasi-elastic laser light scattering and laser Doppler velocimetry are used to obtain information about the size and motion of microorganisms, cells, organelles, and molecules.

X. LASER CUTTING

Advancements in automation and robotics are enabling more complex and intricate cutting patterns, improving productivity and precision. Software algorithms and real-time monitoring systems optimise cutting paths, enabling faster cutting speeds with minimal errors, reducing processing times, maximising material utilization, and reducing material waste. Integration of automation technologies such as robotic arms and AI-driven systems

Published By:
Blue Eyes Intelligence Engineering
and Sciences Publication (BEIESP)
© Copyright: All rights reserved.

has streamlined workflow processes, minimising manual intervention and maximising production efficiency. Mazak, a manufacturer of machine tools, has begun using AI-powered systems in its laser cutting machines. Inkscape, a laser cutting software, is used to create designs for laser cutting and engraving. To increase productivity and accuracy in laser cutting, artificial intelligence (AI) algorithms can adjust laser parameters in real time based on material properties. Fibre lasers, with high energy efficiency, are more compatible with materials such as mild steel, stainless steel, copper, brass, and aluminium.CO2 lasers are more compatible with non-metals (acrylic woods, plastics). Fibre lasers integrate easily with software, robotic arms, and IoT dashboards. The cutting machine must work seamlessly with design software (AutoCAD, CorelDRAW, Illustrator), Nesting software (Sigma NEST, Lantek, Expert Cut), and CNC control software (Ruida, Backh off, FSCUT).

XI. 3D PRINTING

The CAD software for laser-assisted 3D printing is essential for creating, modifying, and optimizing digital models that can be transformed into physical objects. The comprehensive cloud-based platform Autodesk Fusion 3600 provides a tool for the entire product development process from design to print preparation. A tool based on Tinker CAD can be used to design and create 3D models. SolidWorks CAD and slicer software slice the 3D model into layers for specific printing technologies, such as laser stereolithography. The laser heats the plastic layers, improving the bond strength between the fibre and plastic and enhancing the strength and rigidity of the final product. Companies such as General Electric (GE), Rolls-Royce, and Boeing are extensively using laser-based 3D printing technology. GE's aviation division uses direct metal laser sintering to produce complex, lightweight metal parts for jet engines. The aerospace and automotive industries use laser 3D printing to create complex designs and strong, lightweight parts faster and more affordably.

XII. LASER MARKING

AI-powered laser marking can automatically adjust settings based on real-time feedback, ensuring constant and precise markings across various materials and surfaces. Laser control software for creating and engraving logos, serial numbers, barcodes, and QR codes is EzCAD and Light Burn. The software generates a barcode and QR code image and sends the code data to the laser, controlling its movement and power for precise engraving onto a material. Laser GRBL is open-source software for Windows that can load any image, picture, or logo onto the laser. The packaging and labelling sectors are experiencing a notable increase in demand for laser marking and coding technologies. Quantum dots are tiny semiconductor particles that emit specific colours when excited by a laser. This technology has the potential to create high-resolution, multicoloured branding markings.

XIII. LASER SYSTEM IN DEFENCE

Pointing and tracking software and algorithms analyse data from integrated sensors to guide the laser beam to its target with extreme precision. The software integrates with broader command and control networks, providing optimal power levels for different targets, determines the appropriate sequence and timing for engaging targets, and enhances overall situational awareness. Software in systems like the MK-II (A) and 3000-kilowatt "Surya" enables the system to precisely neutralise fixed-wing aircraft, swarm drones, and even missiles. The software is critical to the effectiveness of laser weapon systems, allowing them to operate at the required speed and precision to counter a widening array of advanced aerial threats and become a key component of future defence capabilities. The US Army's DEM-SHORAD uses software to control its high-energy laser for defeating drones and Mortars. India's laser DEW MK–II (A) utilizes software for targeting and neutralizing aerial threats. Laser and their associated software can be used to detect and monitor radioactive materials. Software is used in laser-based repair and restoration processes for valuable defence industry components. Software enables a regenerative payload on a satellite that can process and route data across multiple laser links within a network, reducing reliance on a ground station. Adaptive software is crucial for managing and optimising the laser communication process, which involves pointing lasers, locking onto ground signals, and adapting to changing conditions.

XIV. LASER SHOW

Laser show software enables the design and control of complex laser displays for events and concerts by allowing the creation of custom graphics, text, and effects synchronised with music. Pangolin Quick Show and Show Editor are laser show control software that provide timeline programming and live laser show control features. AI stage laser light control software technology allows laser lights to automatically adjust colour, intensity, speed, and effects based on inputs such as the scene environment and sound. The control software for the stage laser lights can be selected based on different needs and scenarios. Laser World Show Editor is a powerful laser control software that supports controlling multiple laser lights and has preset laser animations and special effects, as well as custom laser animation editing functions. *Show* Editor is a laser show control software that provides timeline-based programming and live laser show control features.

XV. LiDAR

LiDAR (Light Detection and Ranging) uses laser systems in self-driving cars, drones, and surveying for real-time mapping and in detecting hidden threats, tracking enemy movement, and obstacle detection. In autonomous vehicles, LiDAR uses lasers to generate 3D maps by measuring distances to objects for safe navigation. A typical LiDAR system detection range varies from 150m to 350m. Long-range LiDARs initially use 1550nm high-power fibre lasers [7]. It provides critical data for

Retrieval Number: 100.1/ijitee.A1204150112225
DOI: 10.35940/ijitee.A1204.15011225
Journal Website: www.ijitee.org

Published By:
Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP)
© Copyright: All rights reserved.

climate monitoring, atmospheric studies, and topographic mapping. LiDAR can provide comprehensive data on atmospheric cloud cover, density, and composition for climate research, disaster relief, and urban planning. LiDAR and advanced laser sensors equipped with autonomous systems are broadening the boundaries of unmanned operations by expanding surveillance capabilities at minimal risk to human personnel.

XVI. CONCLUSION

As technology advances, innovations and software offering solutions are expected to undergo several significant changes in the laser processing techniques in the near future. Laser systems paired with robotic arms for automated material handling are expected to streamline manufacturing processes and reduce human intervention. The future of laser technology lies in Integration with AI, ML, and IoT, with laser devices offering unprecedented precision, efficiency, and outcomes that enable more intelligent and adaptive manufacturing processes. AI-driven automation, quantum lasers, and nanowire lasers are opening new possibilities in fields such as miniaturisation, manufacturing, healthcare, quantum computing, aerospace, and autonomous navigation.

DECLARATION STATEMENT

After aggregating input from all authors, I must verify the accuracy of the following information as the article's author.

- **Conflicts of Interest/ Competing Interests:** Based on my understanding, this article has no conflicts of interest.
- **Funding Support:** This article has not been funded by any organizations or agencies. This independence ensures that the research is conducted with objectivity and without any external influence.
- **Ethical Approval and Consent to Participate:** The content of this article does not necessitate ethical approval or consent to participate with supporting documentation.
- **Data Access Statement and Material Availability:** The adequate resources of this article are publicly accessible.
- **Author's Contributions:** The authorship of this article is contributed equally to all participating individuals.

REFERENCES

1. Zhang, X., Zhou, L., Feng, G. et al., "Laser Technologies in manufacturing functional materials and applications in machine learning assisted design and fabrication". Adv. Compos Hybrid Mater 2025. 8, 76 DOI: https://doi.org/10.1007/s42114-024-01154-4
2. Serguei P. Murzin. "Computer science integrations with laser processing for advanced solutions". Photonics. 2024, 11(11), 1082. DOI: https:// doi.org/10.3390/photonics11111082
3. S. Elhamali, H. Musbah, L.Zawi, A. Shuwehdi, H. Faris, A. Mahdawe. "Artificial intelligence meets laser technology: A review of recent advances". Results in Surfaces and Interfaces. May 2025, 19, 100484. DOI: https://doi.org/10.1016/j.rsurfi.2025.100484.
4. Zhang, X., Zhou, L., Feng, G. et al. "Laser technologies in manufacturing functional materials and applications of machine learning-assisted design and fabrication". *Adv Compos Hybrid Mater*. 2025. 8, 76. DOI: https://doi.org/10.1007/s42114-024-01154-4
5. Shrivastava Shailaj Kumar, Shrivastava Chandan. "Integration of emerging software and innovative technologies with the laser system". International Journal of Creative Research Thoughts (IJCRT), *Oct. 2025.13(10), a299-a304.* DOI: https://doi.org/10.56975/ijcrt.v13i10.294543
6. Sibo Niu, Wenwen Wang, Pan Liu, Yiheng Zhang, Xiaoming Zhao, Jibo Li, Maosen-Xiao, Yuzhi Wang, Jing Li, and Xiaopeng Shao, "Recent Advances in Applications of Ultrafast lasers", 2024. *Photonics,* 11(9),857. DOI: https://doi.org/10.3390/photonics11090857
7. Liang, D., Zhang, C., Zhang, P., et al. "Evolution of laser technology for automotive LiDAR, an industrial viewpoint". Nat Commun, 2024 15, 7660 DOI: https://doi.org/10.1038/s41467-024-51975-6

AUTHOR'S PROFILE



Prof. (Dr.) Shailaj Kumar Shrivastava holds a first-class Master's Degree (second topper) in Physics (advanced electronics) from Patna University. He has worked as a Research Fellow at the National Physical Laboratory, New Delhi, and obtained his PhD in Physical Sciences from Delhi University in 2002. His research interests are in superconductivity, thin films, and devices. With more than 28 years of distinguished teaching experience, he has published more than 75 research papers in leading national and international journals. He participated in more than 125 national and international conferences and seminars in India and abroad. He presented his papers on superconductivity and higher education issues. He is the editor-in-chief and an editorial board member of journals. Three Scholars have been awarded PhD degrees under his supervision. Besides being a member of several academic bodies of the university, he has over 15 years of experience as a principal in constituent colleges of L.N. Mithila University and Magadh University. Currently, he is the Principal at Kanhai Lal Sahu College, Nawada, Bihar (A constituent unit of Magadh University, Bodh Gaya). He has written two books, entitled "Superconductivity: Materials and Applications" and "Reforms in Indian Higher Education". He got several awards from different organisations, including the 'Young Research Award' at IUMRS-ICA-98 held at IISc Bangalore. Despite his busy administrative schedule, Prof. Shrivastava remains active in his academic pursuits.



Chandan Shrivastava is a B.Tech in Computer Science Engineering from the International Institute of Information Technology (IIIT), Hyderabad, and is interested in software development and technology. He is currently working as an Application Developer at Oracle India Pvt. Ltd., Hyderabad. He has experience in various software development and application development internships at different organizations. He possesses skills in C, C++, Python, SQL, JavaScript, Dart, HTML/CSS, GraphQL, and expertise in React JS, React Native, Node JS, Express JS, Flutter, and Redux. His journey in software technology has been a dynamic blend of learning, innovation, and impactful projects. He has completed various projects assigned to him individually and in groups. He published eight research papers in reputable journals. He received the 'Technology Innovation Award-2022' at the 22nd Global Leadership Summit-2022 in Goa (India) from the Global Leaders Foundation, New Delhi.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of the Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP)/ journal and/or the editor(s). The Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP) and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.

© Copyright: All rights reserved.