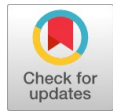


New Reforms in Indian Higher Education: Rethinking the Education Model

Shailaj Kumar Shrivastava, Chandan Shrivastava



Abstract: *The National Education Policy (NEP)-2020 will bring flexibility to the curriculum through a multidisciplinary and interdisciplinary approach, a new assessment process, resource empowerment, multiple exit options, and encouraging internationalization. Adopting an open curriculum with transdisciplinary course patterns, including flexibility in electives, has led to progress in skill development, holistic development, community engagement, technological integration, environmental education, and value-based education. Ranking and accreditation will have a significant impact on the quality of education and research. It is necessary to frame an education policy that will give better results in creativity, development of critical thinking, decision-making skills, and problem-solving abilities. The new reforms aim to enhance the quality and effectiveness of future-ready higher education institutions in India. In this paper, an attempt has been made to present various reforms in the Indian higher education system, its regulatory structure, and teaching pedagogy.*

Keywords: Higher Education, NEP-2020, Reforms, Sustainability.

I. INTRODUCTION

The urgent need for substantial reforms in the Indian education system is required to retain its talent and to ensure future generations contribute effectively to the country's growth and development. The government of India should align its educational standards and practices with global benchmarks, focusing on innovation, transformation, research, critical thinking, and holistic development. Education should be centralized, allowing uniform education standards and assessments across India. There is a need to revise the national curriculum on academics.

National Education Policy (NEP) 2020 is a visionary step towards transforming the educational landscape of the country, with the ambitious goal of achieving a 50% gross enrolment ratio (GER) in higher education in India by 2035 from 28.4% in 2021-22, 27.3% in 2020-21, 25.6% in 2019-20 and 24.9% in 2018-19. However, the current GER of 28.4% is still below global average of 36.4%. The target is to add 3.5 crore seats in higher education and to bring Indian universities into the global top 100 rankings.

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* Correspondence Author (s)

Dr. Shailaj Kumar Shrivastava,* Principal, K.L.S. College, Nawada. (A constituent unit of Magadh University, Bodh Gaya), Bihar, India. E-mail ID: shailajshri68@yahoo.com, ORCID ID: 0000-0003-1787-8568

Chandan Shrivastava, Applications Developer, Oracle India Pvt Ltd, Plot No. 18, Phase 2, HITEC City, Madhapur, Hyderabad, Telangana, India. E-mail ID: chandanshrivastava2002@gmail.com

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Only 15 higher education institutions from India are listed among the top 1000 despite the country having the second-largest higher education system in the world. India's gross domestic expenditure on research and development is 0.65 % of GDP which is much lower than that of the major developed and emerging economies such as China (2.4%), Germany (3.1%), South Korea (4.8%) and the United States (3.5%). The development of internationalization, regionalization, digitalization, and sustainability are now key factors shaping higher education and research strategies [1, 4]. Higher education institutions should reform degree programs, curriculum, and assessment methods. Universities should craft their reforms by promoting energy conservation inside and outside their campuses.

II. NEW HIGHER EDUCATION ACCREDITATION SYSTEM

The NAAC has initiated extensive changes in the accreditation process by introducing the binary accreditation system for the assessment of higher education institutions in the country. The binary accreditation system is different from the existing accreditation system where a grading system has been used starting from C to A++. The peer team visits the colleges and universities to assess self-study reports (SSR) sent by the institution online. The proposed accreditation system has 10 attributes including 59 matrices for universities, 56 for autonomous colleges, and 46 for affiliated colleges which will focus on process outcomes and impact rather than inputs. The new higher education accreditation system will include two components-binary accreditation systems and maturity-based graded accreditation (MBGA) system. The purpose of these reforms is to streamline the education system for accreditation and ranking of institutions.

The binary accreditation system will simply declare that the institution is "accredited" or "not accredited". The not accredited institution will be further divided into two categories "awaiting accreditation" which means that the institutions nearly meet the requirement but need some improvement, and "not accredited" will mean that they are far below the standards for accreditation.

A maturity-based graded accreditation (levels 1 to 5) will be introduced by the end of the year. The accredited institutions can continuously improve and elevate their standard to achieve the highest level of 5 will be accredited as "Institutions of global excellence for multidisciplinary research and education" and the institutions between levels 1 to 4 will be accredited as "institutions of national excellence" [2].



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The “One Nation, One Data” (ONOD) is an online platform where higher education institution can upload their data that are required by various regulatory bodies for periodic assessment, ranking, and grading. The NAAC will adopt AI technology to streamline and enhance the efficiency of its accreditation process which will assist in data collection, processing, and analysis. The college will perform self-assessment and the data submitted at NAAC will then be reviewed using AI technology and colleges will provide additional information if there is any discrepancy for more precise, transparent, and efficient accreditation.

The new reforms are aimed at strengthening quality assurance mechanisms in higher education, fostering a culture of continuous improvements and accountability among institutions. Active engagement of stakeholders within the educational ecosystem and its interaction with university administrators, faculty members, students, policymakers, and industry leaders will be directly affected by the NAAC reforms.

III. REFORMS IN REGULATORY STRUCTURE

A. National Institutional Ranking Framework (NIRF)

The National Institutional Ranking Framework (NIRF) system evaluates and ranks higher education institutions recognized by UGC or AICTE. NIRF ranking assesses institutions based on parameters like teaching learning and resources (30%), research and professional practices (30%), graduation outcome (20%), outreach and inclusivity (10%), and perception (10%). This framework aims to promote healthy competition and encourage universities and colleges to enhance their academic and research qualities [3].

B. National Credit Framework (NCrF)

The National Credit Framework (NCrF) accumulates credits earned from school education, higher education, vocational and skill education. NCrF allows students for multidisciplinary education and empowers them through the flexibility of choice of courses. This framework allows flexible pathways for students to enter and exit the education system at various stages. The credits are based on learning hours and the cumulative number of years of learning with assessment. For credit calculations under NCrF, one credit is equivalent to 30 national working hours [2]. Under the NCrF, every learning hour can be credited subject to assessment. The assessment is mandatory for earning credits for all types of learning. NCrF will encourage the internationalization of education through credit transfer provisions, thus enabling wider recognition and acceptance of Indian education and skilling by other countries. The challenge before NCrF is its implementation, standardization, acceptance and adoption.

C. Academic Bank of Credit (ABC)

For secure storage and efficient retrieval of credit, a suitable digital platform referred to as Academic Bank of Credit (ABC) has been established. ABC allows students to deposit credits earned from conventional university courses, internships, vocational training, and other similar educational pursuits [5]. The students will have unique User IDs and passwords, which will help them in tracking their credits.

An academic bank of credits is to be established to facilitate academic credits earned at various HEIs digitally so that they can be transferred and counted towards a final degree. Integrating NCrF and ABC creates a more expansive spectrum of learning experiences enriches their academic proficiency and cultivates skills and competencies. Thus, the integration of NCrF and ABC will serve as the foundational pillars for the multiple entry and exit system and multidisciplinary education.

D. The Higher Education Commission of India (HECI)

The Higher Education Commission of India will promote autonomy and will specify norms for learning outcomes, teaching and research standards, evaluation procedures, accreditations, etc. for higher education institutions. HECI aims to decrease the number of regulators and to decrease the interference of the government in the management of the education system and also to phase out the affiliation system in 15 years and a stage-by-stage procedure for providing colleges with graded autonomy will be formed. The proposed HECI structure will include the National Higher Education Regulatory Council (NHERC) for creating and implementing higher education regulation, the National Accreditation Council (NAC) for accreditation, the Higher Education Grant Council (HEGC) for funding, and the General Education Council (GEC) for setting academic Standards.

E. National Educational Technology Forum (NETF)

National Educational Technology Forum (NETF) will provide independent evidence-based advice to central and state government agencies on technology-based inventions. NETF focuses on maintaining virtual labs at various institutional and university levels as well as on the areas of teaching, learning, assessment, administration, and management systems.

F. National Research Foundation (NRF)

National Research Foundation (NRF) contributes to national development by supporting, promoting, and advancing research through funding. The NRF will promote research not only in natural sciences but also in humanities, social sciences, and arts. In 2024-25, the budget allocation for institutions of eminence will be 1800 crore and for research and innovation, the allocation will be 355 crore. NRF has to ensure that funding is distributed equitably across institutions in various geographic locations.

G. National Higher Education Qualification Framework (NHEQF)

National Higher Education Qualification Framework (NHEQF) provides the guidelines for the development and implementation of programs of study, such as the program's learning outcomes, the course learning outcomes, the curriculum design, the pedagogy, the assessment, and the feedback. It will characterize higher education qualifications leading to a degree/diploma certificate. NHEQF has to facilitate transparency and comparability of higher education qualifications at all levels.



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H. National Testing Agency (NTA)

National Testing Agency (NTA) will offer common aptitude tests as well as common subject exams at least twice a year which can be used for university admission ensuring equal opportunities for all, regardless of their background or location. NTA is essential to conduct nationwide common entrance examinations fairly and transparently for an increasing number of candidates.

IV. CURRICULUM DESIGN

The curricula are developed by taking national context, international context, professional body context, socioeconomic context, industry context, and disciplinary and student context into account. The curricula must be nationally and internationally recognized. Basic training in mental health, disaster response, and scientific explanations of the damaging effects of alcohol, tobacco, and other drugs will be included in the curriculum.

A. Course Structure

The curriculum consists of major stream courses, minor stream courses and courses from other disciplines, language courses, skill enhancement courses, and courses on environmental education, understanding India, digital and technological solutions, health and wellness, yoga education, and sports and fitness. Students are required to achieve competency in the Modern Indian language (MIL) and English language with special emphasis on language and communication skills. Skill enhancement courses are aimed at imparting practical skills, hands-on training, and soft skills to enhance the employability of students. Value-aided courses are designed to improve the talent and innovative capabilities of students to meet the challenges of today's professional life. The course on environmental science equips students to take appropriate actions for mitigating the effects of environmental degradation, climate change, and pollution. There is a great need for digital and technological-related courses such as artificial intelligence (AI), 3-D machining, big data analysis, machine learning, drone technologies, deep learning, and virtual reality [7]. Course components relating to health and wellness seek to promote the physical well-being of a person. Yoga education focuses on preparing the students physically and mentally and equipping them with basic knowledge about one's personality. The sports and fitness component of the courses will be on the improvement of physical fitness. Assessment and examination are departmental responsibilities of faculty members who are teaching the subject. Regular use of formative assessment provides ongoing feedback to students, helping them to understand their learning progress and areas needing improvement.

B. Credit Based Education

The concept of credits helps both students and educational institutions to systematically monitor and access academic advancement so that learning outcomes can be quantified

within a qualification framework. Student can decide their educational pathway if they transfer the credits earned across diverse institutions or programs. Multiple entry and exit options with appropriate certification in higher education will reduce the student dropout rate. The duration of the UG program is four years or eight semesters. Students who want to leave after the completion of the first or second year will be given a UG certificate or UG diploma respectively, provided they secure the prescribed number of credits. Students who exit with a UG certificate or UG diploma are permitted to re-enter within three years to complete the degree program. Students may be permitted to take a break from the study during the period of study but the total duration for completing the programme shall not exceed seven years.

C. Indian Knowledge System (IKS)

The NEP 2020 aims to restructure the educational framework of the nation by incorporating the Indian Knowledge System (IKS) in the curriculum [8]. The primary objective is to provide an educational framework that is influenced by the diverse linguistic, cultural, and creative heritage of India. The primary aim is to reduce undue Western influences. Through IKS we regain much knowledge of our heritage and demonstrate the Indian way of doing things to the world. IKS includes traditional medicine, astrology, yoga, Vedanta, Vedic science, meditation and other ancient knowledge. The NEP-2020 emphasizes the promotion and preservation of Indian language in higher education. IKS is the most emerging area of study and research in the traditional knowledge of India.

D. Industry Academic Collaboration

Colleges and universities with minimal research facilities can focus on short-term collaboration with local manufacturing companies facing technical problems in their production that need a quick resolution. Colleges or universities with good research facilities and faculty experience can partner with the industry for long-term research collaboration. Government policy is needed for instituting joint PhD programs in collaboration with industry. The most significant benefit of industry-academia partnerships is enhancing student employability in software development [9]. This initiative aims to reduce unemployment by aligning education with industry needs.

E. Internship

The internship involves working with local industry, government or private organizations, and business organizations to provide opportunities for students to actively engage in onsite experimental learning. The emphasis on practical training through internships and on-the-job training enhances student's employability. The focus on entrepreneurship education and close linkage with industries fosters innovation and economic growth.

F. Curriculum Flexibility

The students have the flexibility to choose any combination of courses.

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The flexibility of subjects in higher education curricula will enhance student mobility across institutions and programs and provide possibilities to pursue a well-rounded education. There will be no formal distinction between arts and sciences, curricular and extracurricular activities, or vocational and academic programs under NEP 2020.

G. Vocational Education

It is the need of the hour for every higher education institution to have a strong vocational education system. The quality of vocational education training is to be enhanced by identifying designing and developing vocational courses that meet the common norms and skills standards identified at the national level. There is a need to redefine the objective of vocational education, training, and skill development to align with the changing environment and industrial needs. NEP-2020 ensures that students have the flexibility to choose courses that suit their interests and career goals.

V. ADMISSION REFORMS

Reforms aimed at improving the fairness, transparency, and efficiency of the admission process.

A. Bi-annual Admission

The UGC's biannual admission process is designed to enhance flexibility and accessibility for students pursuing higher education and to make Indian institutions more competitive and attractive to international students. This decision will help students to join their degree programs without waiting for one full academic year.

Higher education institutions that offer programs in regular mode are allowed to admit students twice a year, either in Jan/Feb. or July/August. Only those universities or colleges with sufficient infrastructure such as classrooms, teaching faculties, and laboratories can offer biannual admissions. Therefore, universities need to evaluate their infrastructure, and offering biannual admission is not mandatory for them. Universities must prepare themselves for such transitions and obtain approval from academic councils and syndicates. The GER will increase in implementing biannual admission in higher education.

B. Ph.D. Admission

The total student enrolment currently pursuing PhDs in higher education is only 0.5%. To strengthen the research ecosystem, UGC has declared that Ph.D. students will be given admission based on their National Eligibility Test (NET) scores in place of the entrance test conducted by the different universities. The UGC's new guidelines for PhD admissions aim for single common entrance tests at all levels of higher education reducing the financial burden on students by replacing multiple entrance examinations. The student holding a four-year undergraduate degree with a minimum of 75% marks or equivalent grades on a point scale can pursue a PhD after qualifying NET examination. Those with less than 75% will have to do a one-year master's before taking NET. Three-year UG graduates can pursue a PhD after passing a year of master's and NET. The students with the highest NET scores will be eligible for the Junior Research Fellowship (JRF), an assistant professorship, and Ph.D. admission. Following that, students

with the highest percentage will be considered for assistant professorship and Ph.D. admissions without JRF. The students who passed the NET examination with a lower percentage are eligible for admission to a PhD program only without getting selected for JRF or being eligible for appointment as assistant professorship.

C. Two Academic Programmes Simultaneously

UGC has allowed students to pursue two academic programs simultaneously. Now, it is possible to pursue two bachelor's degrees at the same time like B.Sc (regular) and B.A. (distance learning) from different universities in India. This shall apply only to students pursuing academic programs other than Ph.D. programs.

A student can pursue two academic programs one in full-time physical mode and the other in open and distance learning (ODL) /online mode; or up to two ODL/online programs simultaneously. The issue of allowing students to pursue two academic programs simultaneously facilitates multiple pathways to learning involving both formal and non-formal education modes.

VI. FACULTY RESOURCES

A. Faculty Development Programme (FDP)

Faculty development program (FDP) prepares faculty members for contemporary teaching methodologies. It includes workshops, seminars, and conferences to enhance the intellectual and academic environment in institutions. The process of professional training, guidance, and coaching assists faculty members in enriching their teaching and research practices. The interaction between faculties is a key component to creating an environment for open discussion and sustainable progress. It has been recommended that proper care should be taken in the selection procedure of a teacher for the appointment of Assistant Professors and Professors as well as for their salaries. The most important duty is to maintain the highest standard of teaching and research. In research publications, the H-index score and number of citations per paper must be the only criteria for financial support to the faculty/department.

B. Faculty Diversity

Diversity in higher education starts with providing equal access to education for all regardless of their background or circumstances. By removing barriers and ensuring equal opportunities, educational institutions can create pathways for economically disadvantaged students, rural communities, and marginalized sections of society to access quality education. Diversity in higher education enriches the overall learning experience for students. When students from diverse backgrounds come together, they bring unique experiences, ideas, and knowledge. A diverse student body will attract international students, promoting cultural exchange and making India an attractive destination for education. Embracing diversity is crucial for creating inclusive learning environments, promoting social equality, fostering innovation, and enhancing global competitiveness.



Higher education institutions must actively work towards eliminating barriers to access, nurturing diversity, and creating inclusive policies and practices. There is still a shortage of 35% to 45% of faculties in various institutions.

C. The Faculty-Student Ratio

Primarily focuses on teacher management and has analyzed data about teacher recruitment, their deployment, salaries, the assigned tasks, extent of autonomy, and accountability. In higher education institutions, the faculty-student ratio is 1:30, which should be 1:20. Also, not more than 10% of the sanctioned posts of teachers should be vacant. There has been a fluctuation in the recruitment of teachers across the state.

VII. INFRASTRUCTURE

Centre and state governments will increase 6% of GDP regarding the education sector to improve the educational infrastructure. Comfortable classrooms should be equipped with mike and LCD projectors and have provision for the internet connection. All practical-based departments must have well-equipped laboratories and be kept up to date regularly, according to changing syllabi. The college should have "Central instrumental facilities" with several modern and scientific instruments. The colleges should have a central library or separate reading rooms enriched with reference and textbooks, periodicals, newspapers, etc., and should be equipped with e-resource management systems that contain thousands of e-resources with a wi-fi internet facility. Multipurpose Hall should be equipped with a suitable public address system and a big dais, well suited to conduct functions. Computing resources are mandatory needs of a college. The computer should be running all the latest software products with necessary licenses so that all features of the product can be used by the students. The software should support extracurricular activities. The wireless internet connectivity should work well in all the locations of the college including classrooms, canteen, halls, parks, etc. to get updated about the latest happenings around the world.

A. Divyangjan Facilities

Divyangjan policy will avoid discrimination, exploitation, and exclusion of disabled students and staff. A person with a disability must be given equal opportunities, have protection rights, and be allowed full participation in any activities. The infrastructure facilities at the institution are Divyangjan friendly to make the study environment more convenient for differently abled students. Special toilets, restrooms, ramps, and rails should be provided on the ground floor to facilitate the visits of differently abled students.

Wheelchairs and handsticks should be provided to the differently abled students for their transportation. Access should be provided to non-visual desktop screen reading software and free e-resources for differently abled students through a special portal created on the library website. The library should have a Braille Book Collection, soft copies of dictionaries of sign language, and subscribe to Braille Journal regularly. Motivational guest lectures awareness lectures and separate counseling sessions should be organized. The guidelines and regulations have been issued

to the examination department for the use of scribes in the exams. The extra time is allowed for disabled students for examinations. Admission policies of the institution offer 5% reservation for persons with disabilities in all courses offered by the institution.

B. National Digital University (NDU)

The national digital university provides students with world-class universal education. The National Digital University is India's first digital university that will help India towards the internationalization of higher education using digitalization. NDU offers unlimited seats in all courses. It focuses on skill development. The NDU is expected to offer degrees, diplomas, and certificate courses across various disciplines including engineering, management, humanities, and social science. If the student earns credit from multiple institutions and surpasses the credit threshold, then NDU will award the degree. The NDU will provide a range of innovative learning experiences such as virtual classrooms, online simulations, and interactive learning resources. The SWAYAM platform will provide digital content for various courses and the government Samarth Portal will provide IT and administrative services.

C. Internationalisation of Higher Education

The NEP-2020 encourages global collaboration between prestigious international institutions and Indian higher education institutions. For better quality and collaborative research, the government will also establish connections between national research laboratories and research centers of top institutions. The policy aims to allow top-world universities to open their campuses in India [6]. Integrating global perspective into the curriculum, fostering cross-cultural understanding, promoting language proficiency, providing experimental learning opportunities, leveraging technology, and developing skills can make students thrive in diverse and interconnected environments. Prioritizing internationalization in education becomes paramount to shaping informed, empathetic, and culturally competent global citizens.

VIII. SUSTAINABILITY (GREEN INITIATIVES)

Sustainable practices like imparting skills in sustainable agriculture, renewable energy, waste reduction, and eco-friendly construction techniques and knowledge about environmental degradation, climate change, social inequalities, and economic instability are essential for future generations.

A. Progressing Towards Net Zero

Solar energy technologies are used in the institution to promote renewable energy usage. The energy collected by solar panels can be used to produce hot water and battery storage solar lighting systems. The provision of on-grid solar rooftop panels in the building can produce an average solar energy of 10KW. A solar water heating system has been installed on the top floor of the building.

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Biogas consists of methane and carbon dioxide which are produced from agricultural waste, manure, municipal wastes, plant materials, sewages, green waste, and food waste. Therefore, a biogas plant should be installed in the college for waste management. The overhead water tank should be equipped with an automatic water level control sensor for energy conservation. The highly efficient LED bulbs with lower wattage should be used at various places in the college to achieve proper lighting. Energy-certified products should be installed in air conditioners, microwaves, refrigerators, ceiling fans, etc. Universities have an important role to play in net zero emissions initiatives by balancing their emission. The aim is to limit global warming to 1.5oC and pledge to halve carbon emissions by 2030 and global net zero carbon emission by early 2050.

B. Community Service

Community service offers opportunities for college students to develop leadership skills. Students can learn how to take initiative, organize and manage events, and inspire others to participate in community service activities. Community services allow college students to build professional networks. Awareness campaigns and community outreach programs will promote cleanliness and hygiene. Engaging in community service can help students develop important soft skills, such as leadership communication, and teamwork as well as gain practical experience in the field of study. NSS unit of college enables volunteers to understand and act on concepts like community mobilization, social justice, and service to the nation, etc. Swacchha Bharat Abhiyaan is one of the prominent activities of NSS. The NSS unit establishes a sense of social responsibility in the students inculcating the value of self-discipline and selfless dedication to the development of the community. NSS activities like blood donation camps, Voter awareness programs, special residential camps, tree plantations, health camps, and awareness drives on various social and economic issues are conducted every year [10]. The NSS unit participates in the fight against corruption and aims to raise public awareness regarding the detrimental consequences of corruption. The restoration of moral values and social relations among youths of our country is the need of hours [11]. Indian educational institutions should take steps to come forward and resolve the global issues of the environment and take measures to ensure that best practices are done concerning waste management in educational institutions. The institution should take various measures to handle paper, plastics, organic waste, and inorganic waste and use a small bin system for collection of waste, practice sorting, and 3R techniques as well then only their campus can become a zero waste campus [12]. Awareness programs should be conducted by universities for students, staff, and non-teaching staff members for best waste practices to make the campus green and the environment clean. College campus produces a large amount of waste, which might be solid, liquid, or e-waste. If the garbage is not adequately handled, it can lead to overcrowding in landfills and pollution in the environment. By raising awareness of optimal management practices, institutions can give opportunities to the staff and students to use innovative ideas in handling waste and

minimizing the global issues of waste management's easily. People worldwide lack safe drinking water due to poor water management strategies. A rainwater capture system that recovers rainwater and redirects it into storage tanks should be provided somewhere outside the building.

C. Green Audit

It is the responsibility of higher education institutions to contribute towards the reduction of global warming through carbon footprint reduction measures. The green audit aims to examine environmental practices within and outside the college campus that impact directly or indirectly on the atmosphere [13] [14] [15] [16] [17] [18]. The green audit focuses on the green campus, waste management, water management, air pollution, energy management, carbon footprint, etc. being implemented by the institution.

IX. CONCLUSION

The implementation of reforms will require concerted efforts from all stakeholders, including the government, educational institutions, the private sector, and civil society. We can build a stronger, more equitable future, where every individual has the opportunity to realize their full potential and contribute to the progress of our nation. Let us embrace core values in higher education, empowering generations to come and shaping a better tomorrow.

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

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AUTHORS PROFILE



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 Ph.D. degree in Physical Science from Delhi University in 2002. His research interest is directed toward superconductivity, thin films, and devices. Having a distinguished teaching career over more than 25 years he has to his credit around more than seventy research papers published in leading journals and conferences. He participated in several national and international conferences and seminars and presented papers in the areas of superconductivity and issues related to higher education. Three Scholars have been awarded Ph.D. degrees under his supervision. Besides being a member of several academic bodies of the university, he has more than 14 years of experience as a Principal in constituent colleges. Currently, he is the Principal at Kanhai Lal Sahu College, Nawada, Bihar (A constituent unit of Magadh University, Bodh Gaya). He has written a book entitled "Superconductivity: Materials and Applications". His academic profile is available on web search engines like Google Scholar, Orchid, Academia, and Vidwan. He got several awards including the 'Young Research Award'

at IUMRS-ICA-98 held at IISc Bangalore. Despite the busy schedule of administrative responsibilities, Dr. Shrivastava is still active in his academic pursuit.



Chandan Shrivastava has B.Tech, in computer science engineering from International Institute of Information Technology (IIIT), Hyderabad. Presently, he is working as an Applications Developer, at Oracle India Pvt Ltd, HITEC City, Hyderabad, Telangana, 500081, India. 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, and GraphQL languages along with expertise in React JS, React Native, Node JS, Express JS, Flutter, and Redux frameworks. He is using developer tools like Git, Docker, Bash, Firebase, etc. His journey in software development 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 six research papers in reputed Journals. He got the 'Technology Innovation Award-2022' at the 22nd Global Leadership Summit-2022 at Goa (India) by Global Leaders Foundation, New Delhi.

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