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ENGLISH LANGUAGE PUBLISHING IN CHEMICAL ENGINEERING JOURNALS FROM AN INDIAN ACADEMIC'S POINT OF VIEW- A BROAD SCIENTIFIC PERSPECTIVE

By

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ABSTRACT

Scientific vision and scientific understanding in today's world are in the path of new glory. Chemical Engineering science is witnessing drastic and rapid changes. The metamorphosis of human civilization in this century is faced with vicious challenges. Progress of Chemical Engineering science, the vision of technology and the broad chemical engineering applications together will go a long way in the true emancipation of scientific publishing and scientific editing. The author as a Chemical Engineer deeply delves into the world of chemical engineering science and unfolds the vast and visionary domain of publishing and editing. The author with deep and cogent insight uncovers the various branches of chemical engineering subject, its vast and varied applications and the futuristic vision of publishing in Chemical Engineering Journals. Scientific writing in today's world is in the path of newer regeneration. Plagiarism issues are changing the face of global scientific writing. It is a burning as well as a vexing issue. The human scientific endeavour is in the state of a difficult crisis. The sole aim and objective of this treatise is to address the need of lucid and plagiarism-free scientific writing in India. The message of plagiarism free writing in India needs to be strong and far-reaching. In today's scientific perspective, the need for scientific writing, whether it is of Engineering or Medicine, is immense and also needs to be targeted to the common mass. Chemical engineering is also in the path of new regeneration and newer re-envisioning. The domain of chemical engineering is now diversifying into different areas of Bio-engineering, Biotechnology and Medicine. In a separate section, the author delineates the visionary scientific endeavours in scientific writing especially medical science writing. There is an immense need for Chemical Engineering writing as India moves into a new eon of scientific cognizance and greater scientific vision. Mankind's vision and scientific prowess will be emboldened as India moves into a new scientific era. The basic upshot of scientific writing with targets towards sustainable development needs to be re-envisioned. The author touches upon the wide world of interdisciplinary areas of chemical engineering particularly, biotechnology, bioengineering and rural development in India. These aim and objectives will open up newer future thoughts and newer future vision in the years to come.

Keywords: Chemical Engineering, Science, Vision, Writing, Bio-technology, Bio-engineering, Sustainability.

INTRODUCTION

Chemical Engineering science as a subject is vast and versatile. Today, chemical engineering has a diverse application such as Bio-engineering. Man's ultimate vision, the visionary targets of tomorrow and the civilisation's prowess are leading a long way in the true realization of the application of science and technology. The author tries to bring the scientific forefront of the immense glory and greatness of the science of chemical engineering and its varied applications. Scientific writing has immense challenges, difficulties and barriers. A non-English Language person has to struggle a lot in the true realization of scientific vision. English language writing in India is at its helm in today's world. In a similar vein, scientific writing in India has immense challenges and surpassing visionary frontiers. Engineering science is in the path of glory and greatness in India. Chemical engineering also in India stands on a visionary platform. The journey of Chemical Engineering education in India started in the early twentieth century at National Council

of Education, at the prestigious Jadavpur University, Kolkata, India. As a Chemical Engineer, the author relates and elucidates the prognosis and the immense path success of chemical engineering education in India. It was an arduous path. So the author tries to stress upon the drastic changes in the process of development and progress of Chemical Engineering education in India and the world of scientific writing of Chemical Engineering research in India.

1. Vision of the Present Treatise

The challenges, the vision and the urge to excel in the field of Chemical Engineering in India are vast and versatile. The metamorphosis of the advancement of Chemical Engineering science in India is wide, vast and visionary. Human scientific endeavour, man's vision and mankind's prowess together will lead a long and versatile way in the true emancipation and effective realization of application of engineering science in India. The author with deep and effective insight elucidates the deep difficulties in writing Chemical Engineering in an Indian professor's scientific perspective. It is a visionary as well as a vicious challenge. First, the author treads a weary path in the progress of Chemical Engineering education in India. Then, he elucidates upon the success in industrial development in India, particularly in the Chemical Engineering industry. In the third phase, he discusses about the present and future trends in writing in Chemical Engineering Journals in India. The greatness and glory of scientific endeavour in India and South Asia is in a new path and the future trends in Chemical Engineering are wide and bright. The futuristic vision of application of Chemical Engineering science in India is veritably opening up areas of deep and broad scientific innovation and scientific vision in the years to come.

2. Need for this Study

Indian scientific endeavour and the vision for tomorrow are moving towards a new era. Scientific frontiers are surpassed and technological vision realized at each step of scientific research pursuit. Science, technology and engineering in India today has reached unimaginable heights. In a similar vein, chemical engineering education and practice are gaining immense grounds. The challenge for the future lies in the hands of future scientific literature. This realization of the vision and the holistic sustainable development in India are the need and the backbone of this study. Scientific writing in India needs to be re-envisioned with the forays in the interdisciplinary areas of chemical engineering such as biotechnology, bioengineering and rural development. These unexplored and investigative interdisciplinary areas of chemical engineering will surely widen the vision of future scientific writing in India. The challenge and the vision are immense. The immediate need and the focal point of this study is plagiarism. The author with a challenging vision unfolds the scientific truth behind the application of chemical engineering in interdisciplinary areas such as rural development and sustainability. In scientific writing in India, these interdisciplinary areas of chemical engineering are unexplored. Thus the need and the vision of the study.

3. Rationale Behind this Study

The rationale behind this study is immense and far-reaching. Sustainable development in India is in a state of deep distress. Research in areas of energy and environmental sustainability is latent and at a dormant stage. Scientific writing in the areas of sustainability had never gained grounds. Here arises the rationale of the present study. Scientific endeavour, the progress of human civilization and the visionary urge to excel is the pallbearers of a greater vision of scientific writing in India. The author plunges into the depths of scientific vision and scientific sagacity. At such, a critical juncture of human scientific research pursuit, a deeper comprehension and a wider introspection is needed as a regards of the future of chemical engineering research, writing and education in India. Scientific validation and scientific scale-up are the other side of the coin in the advancement of chemical engineering research in India. Mankind's scientific forays needs to be re-envisioned at each step of scientific writing in India or South Asia as a whole. This need and the rationale are the pillars of a greater emancipation of chemical engineering science in India or South Asia.

4. The Present and Future of Chemical Engineering Education in India

The state of engineering education in India is grave and disastrous. Chemical engineering forms an integral part of engineering education in India. The engineering industry as well as chemical industry is growing and ground-breaking. Lack of proper teaching methodologies has been a devastating element in the future of chemical engineering education in India. Lack of faculties to teach such an advanced chemical engineering subject are denigrating the state of education in India. The author repeatedly stresses on the fact that, the disastrous scenario of engineering education is influencing publishing in reputed journals in India and abroad. Yet, the brilliant minds are shining. The diction and grammar in Chemical Engineering writing are lacking. The vision of sound research initiative and the sound report writing of chemical engineering advancement needs to be realized and reshaped [1], [2], [3], [4].

5. Chemical Engineering Education in India: Its Present Scenario and a Broad Perspective

Education in our global scenario means more than acquiring knowledge. It empowers people to develop personally and become politically and socially active. A changing scenario has evolved in the domain of chemical engineering education in India. India needs to strive hard and the impact of the nation's development and the improvement in the welfare of the society is needed so as to produce skilled engineers and conducting applied research on a large scale. Indian society needs to re-envision itself. Engineering education needs to be practically oriented [1].

Till date, India is a developing nation. There is a basic requirement to produce better engineers and efficient technologists. They should have excellent potentials and skills to cater to the needs of society and human mankind. Energy, oil, food, all non-oil and manufacturing sub-sector can be the basis and the platform for holistic development of the Indian nation. In such a crucial juxtaposition, there is a need for sound chemical engineering education [1], [3], [4].

6. Scientific Writing and Scientific Editing

Scientific writing and scientific editing in India and South Asia needs to be restructured and re-envisioned at every step of scientific research pursuit. Since English Language is the second language in India, challenges and vision are vast and versatile. The questions of grammatical mistakes in scientific writing in Indo-Anglican English has immense challenges. A scientist's vision as well as a Chemical Engineer's prowess are emboldened and enhanced at each step of vision of science and engineering in India. The Engineering industry in India is in the path of immense glory and vision. In the similar vein, application of Chemical Engineering science in Indian perspective is witnessing dramatic challenges [2], [5], [6], [7], [8].

7. Global Scientific Writing and the Relevant Scientific Endeavour

Global scientific writing in today's world is in the path of immense glory and far-reaching scientific forbearance. This section deals with the visionary paths in global scientific writing. Human scientific endeavour needs to be re-envisioned at each step of human civilization.

R. Shukla and R.N. Shukla (2016) [1] deeply comprehends the present scenario of chemical engineering education in India. This paper aims at changing the scenario in present engineering education in India. This is an extensive and well informed and well observed review. Future challenges of Indian chemical engineers and its definitive vision are the backbones and highlights of this paper. This paper replicates the impact of professional chemical engineers to nation's development and improvement in the welfare of the society and its people through producing skilled engineers and conducting applied and fundamental research. In the recent past, the study of engineering generally has received less attention. A number of innovative research shows that, socio-political factors such as the level of technology acceptance are not solely responsible. Students did not accept and envision studying the engineering subjects. The scenario has totally changed at present. Students are willfully accepting the engineering subjects to frame their career. Scientific endeavour in the field of Chemical Engineering in India today are garnering immense strides,

as India moves from one decade to the other. Indian Institutes of Technologies and Indian Institute of Science are the pallbearers and the hallmark of a resurgent Indian engineering and chemical engineering education [1].

Salager-Meyer (2008) showed the glorious path of the future of scientific publishing in the developing countries [3]. The author lucidly observes the center-periphery dichotomy in terms of scientific output, placing emphasis upon the connection that exists between science and technology development, on the one hand, and social and economic development, on the other. The author then analyzes the main problems faced by most peripheral journals and the definitive role that the nation plays in scientific activities in developing countries. The author relates about five pillars of scientific publishing and its scientific truth. They are (1) science itself, (2) publishers, (3) the role of nation states, (4) the world power structures, and (5) the researchers themselves. The research on these visionary concepts encompasses the entire treatise [3].

Kak (1994) lucidly observes the evolution of early writing in India. The Indus-Sarasvati tradition represents the beginning of the Indian civilization [5]. This tradition has been traced back to 7000 B.C. remains that have been uncovered in Mehrgarh and other sites. Its first urban phase was during the Harappan period of 2600-1900 B.C [5]. The writing used in this phase has 'hitherto' been called the 'Indus writing'. But it appears that it should be properly named the Sarasvati writing because most of the settlements in this period were along the Sarasvati river and because the Indian tradition associates Sarasvati with learning and literacy in its earliest phase. The authors begin with a brief review of the Indus-Sarasvati tradition [5]. The author rewrites history with the sole aim of projecting the Indus- Sarasvati tradition as the pioneers of Indian scientific writing tradition and the deep paradigm associated with it [5].

Thakur (2010) in an informative and deeply introspective treatise, delineates his experience on medical science writing in India. He devises the terminology as "responsible writing". With more than two decades of teaching experience in government and private medical colleges in India, the author again relates the concept of responsible writing with deep comprehension towards plagiarism [6]. The author discusses authentic writing as a sole support to responsive writing. According to the author, the quality indicators of any article such as Journal Impact Factor, Circulation Number, Indexation, Journal Citation Report, Web hits, Manuscript Acceptance Rate, Peer Review, etc., can involve and encompass a lot of manipulation. The fundamental rule of science writing, according to the author, is authenticity in its vision, [6].

Langdon-Neuner (2006) lucidly relates the role of English for medical translation and non-native English speakers. Historically, the variety of languages and the dispersion of mankind have been considered as a curse. The Bible (Gen. xi. 9) tells us that there was a single ancestral language. Linguists believe that, an ancient single language might have existed, but they are unable to agree on the date when it diversified. The author relates march of evolution as a torchbearer of a global language and its visionary future [9].

8. Scientific Writing Pursuit and the Vision For Tomorrow

Scientific writing pursuit in today's world is facing drastic and dramatic challenges. In a similar vein, Chemical Engineering writing in India is faced with deep comprehension and immense introspection. Scientific vision, scientific understanding and scientific cognizance of fundamental and advanced subjects of chemical engineering are paving the way for a visionary future. Interdisciplinary areas of chemical engineering, environmental engineering and sustainability will veritably open up new avenues of scientific introspection in the years to come. The scientific world needs to be re-envisioned and restructured as human civilization treads the weary mile towards a better scientific world and a visionary future.

9. The Challenge, the Vision and the Urge to Excel in Scientific Writing

The challenge, the vision, and the urge to excel in scientific writing in India is entering a new phase with engineering science diversifying into newer interdisciplinary areas. Chemical engineering has today diversified into bio-engineering, biotechnology and petroleum engineering. Sustainable development in

India is in a state of immense crisis. The need for addressing the issues of energy and environmental sustainability has urged mankind to move forward in the direction of holistic sustainable development. Mankind's prowess, civilisation's future and the scientific struggle are the torchbearers towards a greater emancipation of science and engineering. Scientific writing is opening up new endeavour and newer avenues as science crosses one hallmark over another.

10. Chemical Engineering and the Frontiers of Science and Technology

Chemical engineering industry, chemical engineering research and education are at the helm of engineering education throughout the world. In a similar vein, chemical engineering education has paved the way for scientific endeavour and scientific progress throughout the nation. The frontiers of science and technology are surpassed as India moves from one decade to another. The aim, vision and definitive objective of chemical engineering education in India is to move towards effective research and widen chemical engineering writing. Higher educational institutions such as Indian Institute of Technology are pursuing this world-wide dream-prolific writing in world-renowned Journals of repute. Science and Engineering has a vision of its own. The author lucidly enumerates the immense challenge of scientific fellowship. The progress of Indian nation today has an unsevered umbilical cord with the immense scientific endeavour of its educational institutions [3],[4].

11. Today's Chemical Engineering Research Pursuit and the Vision for the Future

Today's scientific world and scientific paradigm are faced with immense issues. The challenges to environmental engineering and chemical process engineering are excessively surmounting. The human scientific tenacity and scientific candour are changing the face of chemical process engineering. Today's chemical engineers are faced with surmounting difficulties. In India, the research targets of chemical engineering are towards an environmental engineering paradigm. Today India's scientific vision is wide and inspiring. Human needs are veritably changing the face of engineering science. One burning and an unsolvable issue which is raging in the scientific horizon is the groundwater contamination in India and South Asia. Arsenic groundwater remediation in West Bengal, India and Bangladesh needs to be scientifically re-addressed and re-envisioned.

Chemical engineering education in India is in the path of newer realm and the newer visionary era. Chemical engineers have a wide opportunity in India. The structure of application of engineering to the needs of human society in India needs to be reorganized. Human scientific vision in realization of energy and environmental sustainability is the need of the hour globally. In a similar vein, exploration into environmental engineering science in scientific writing is the need of the hour amongst India's scientists and technocrats. The concern and the metamorphosis is vastly imminent [3],[4].

12. Vision of Science, Progress of Engineering Science and the Versatile Scientific Frontiers

Science and technology are moving at a rapid pace in our present day human civilization. The question of scientific validation and improved scientific vision is the utmost need of the hour. Chemical engineering has also surpassed wide and vast visionary frontiers. The immediate question which lies at the utmost is the application areas of engineering science. India is a developing nation. Chemical engineering industry is latent yet growing. Human endeavour, scientific progress and the question of scientific validation stands as major issues in the advancement of science in India. A typical example which vexes the scientific horizon in India is the future of environmental engineering science and the question of ecological balance. The road to success is full of thorns, yet the challenge stands in the midst of scientific horizon. Engineering science and the wider world of chemical engineering science are ushering in a new era in engineering and technological publishing.

13. The Challenge of Publishing Engineering Content in India

Publishing in reputed world renowned Journals from India is in a new era. The challenge, the vision and the scientific progress and the world of scientific and technological vision in Indian context are ushering in a new eon in the

field of publishing in world-renowned Journals. Advancement of science and engineering in India is gearing towards a new dawn of human civilization. The challenge of human mankind in Indian science needs to be re-envisioned. History of science and technology in India is moving towards a visionary horizon. Non-English writing and Indo-Anglican writing is changing the face of scientific writing in India. Indian scientists and technologists are facing a worldwide challenge that is to write quality papers. In such a crucial juxtaposition, India today is far above other nations [10], [11], [12].

14. Publishing in Reputed Chemical Engineering Journals and the Author's Experience

Publishing in reputed scientific journals by Indian scientists and technocrats is witnessing a new path of glory and scientific vision. The author of this treatise is highly critical about lucid scientific writing. Writing without errors in grammar and a directed vision is the need. Vision of surrounding human needs such as environmental engineering and ecological balance needs to be re-addressed and re-structured. The author's experience and the future flow of thoughts are far-reaching. The author stresses on the point of merging chemical engineering with environmental engineering science in scientific writing. Scientific editing should be targeted in that direction. Man's vision, a scientist's prowess and human mankind's progress and the immediate vision for the future will all go a long way in the true emancipation and true realization of environmental and energy sustainability in India [13],[14].

15. The Challenge, the Vision and the Background for Chemical Engineering Publishing

The challenge and the vision for scientific writing and scientific editing in India is immense and ground-breaking. Science and engineering in Indian nation are moving towards a newer vision and a newer phenomenal era. The vision of Dr. C.V. Raman, Dr. Hargovinda Khorana and Dr. Chandrashekhar are framing the future of Indian science. Professor Amartya Sen, the renowned economist has repeated stressed upon the concept of emancipation and realization of ancient Indian science and thus the formation of Nalanda University in Rajgir, Bihar, India [2]. Scientific publishing is thus in the avenue of newer scientific understanding and forbearance [2],[3],[4],[10],[11],[12],[13],[14].

16. The Success of the Path of Science and Engineering in India and the Futuristic Vision

India and its scientific domain are in the midst of new scientific regeneration. Scientific vision in India stands in the midst of deep introspection and immense challenges. The distress phase of science in India is slowly obliterated. Human scientific endeavour, the deep and immense challenges and the futuristic road towards progress will go a long way in the true emancipation of science and engineering in India. The challenge, the purpose and the aim of science in India today are focused towards more application domain of engineering science.

17. Chemical Engineering Journals in India and the Quality of Publishing

Deep scientific understanding and sound engineering knowledge will veritably catapult Indian science to a newer visionary era of scientific understanding. The brilliance of science in India today is in a state of distress and challenges. Indian Institute of Technologies are publishing extensively in reputed journals in abroad in every stream of engineering science. This exemplifies the immense quality of Indian scientific writing.

18. The Author's Experience in Editing Chemical Engineering Manuscripts

Editing chemical engineering manuscripts is an arduous task and needs lot of scientific skills. Scientific diction and immense grammatical skills are the backbone of effective and diligent scientific editing. In India and South Asia, the world of challenges and immense engineering knowledge are the hallmarks of sound scientific editing. Human scientific research pursuit and the progress of global scientific and engineering paradigm are leading towards a visionary goal of effective scientific writing and editing.

19. Technological Visions and the Future Trends in English Language Publishing

Technological and scientific vision in today's global

scenario face the challenges that needs to be far-sighted. Indian engineering industry is at the helm of human civilisation's immense progress. Editing of reputed engineering and science journals by Indian scholars needs to be revisited with reference to diction, lucidity and grammar. In this manner, the world of challenges in scientific research pursuit can be veritably mitigated.

Conclusion

A scientist's vision, a civilisation's wide prowess and deep comprehension of science are the forerunners of the global scientific research pursuit. Human scientific endeavour is facing drastic challenges. The author lucidly enumerated the scientific truth and the deep scientific introspection in publishing and editing by Indian scholars. There is a greater challenge towards the scientific literature addressing basic human needs like drinking water treatment and environmental engineering science. In today's visionary world, chemical process engineering and environmental engineering science have an unsevered umbilical cord. Vision of science and vision of Indian scientific writing needs to be more pragmatic. In such a way , publishing and editing in India will see a new scientific realm and a greater paradigm.

Scientific validation in today's world stands as a major backbone to the progress of science and engineering in India. In a similar vein, the challenge of scientific writing in engineering journals is immense and versatile. The academic rigour needs to be re-envisioned at each step of scientific research pursuit. Academic progress, deep introspection into science and holistic sustainable development in every sphere of human life are the parameters of a greater visionary tomorrow. The author in this well-observed treatise delineates in details the answers to the varied questions of present scientific writing in India. Scientific vision and scientific fortitude are emboldened as the treatise establishes and addresses the state of scientific writing in India and its vision.

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