

Review Article

The Contribution of South Asian Visionaries in the Advancements of Science and Technology Post-Independence Era- A Far-Reaching Review

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Abstract: Swami Vivekananda was a South Asian visionary and a futuristic thinker of Indian civilization. Science, technology, engineering and medicine in today's human mankind needs to be re-envisioned and re-organized with the passage of Indian history and the visionary timeframe. Swami Vivekananda always thought of the youth of India. In this article, the author deeply elucidates on Swami Vivekananda's teaching and its relevance to the futuristic vision of education in free India. Today man and mankind are in the crossroads and crevices of a deep environmental engineering crisis and socio-economic crisis of immense proportions. The author deeply elucidates on the true path of Swami Vivekananda's teaching in global society and the futuristic vision of the value system of India in post-independence era. The author deeply with cogent and lucid insight elucidates the various stages of development and the progress of free India post-independence India. Surely and veritably a new era in the vast scientific firmament of India will emerge if students, teachers, scientists and policy makers across the globe takes effective steps in the proper application of Global and United Nations Sustainable Development Goals.

Keywords: Vision, science, technology, independence, era, epoch, united nations, science, technology.

1.0 INTRODUCTION

Science, technology, engineering and medicine are today in the process of newer scientific regeneration and surpassing one visionary frontier over another in the global scientific and engineering landscape. India as a nation is today in the similar vision moving from one visionary boundary over another. Swami Vivekananda was a visionary and statesman of immense proportion. Since coming into contact with Lord Ramkrishna Paramahansa, he was very much optimistic about the education system and the value system of future India. Man, mankind, science and vision today are in the path of newer scientific and technological and scientific ingenuity. After India's independence in 1947, India fell into deep distress and catastrophe as poverty, hunger, and illiteracy reigned supreme. Free India's space science programme and nuclear science programme similarly proliferated with the contribution of Dr Satyendranath Bose and Dr. Meghnad Saha. Besides them, Dr. Homi Bhabha and Dr. Vikram Sarabhai spearheaded India's space programme and nuclear engineering programme in post-independence era. The author deeply with scientific and engineering introspection elucidates the need of Swami Vivekananda's teachings towards futuristic vision of modern India. This article deeply elucidates on the needs of a comprehensive value system in the futuristic vision and emancipation of India's education scenario.

2.0 Teachings, knowledge prowess and the futuristic vision of free-India's space and nuclear science research and development initiatives:

Swami Vivekananda's teachings and futuristic vision surpassed one scientific frontier over another. Space science and nuclear science in post-independence era stands in the midst of deep scientific ingenuity, comprehension and vast introspection. Indian science is today in the crossroads of vast and varied knowledge prowess and engineering and technological steadfastness. Engineering science and technology in the similar vision are in the path of newer ingenuity. A newer day is emerging in the field of engineering science and technology in this twenty-first century. The vision of Swami Vivekananda is everlasting and replete with deep forbearance and fortitude. Free India's space and nuclear energy

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programme today stands in the middle of deep scientific comprehension and deep engineering acuity. Provision of clean drinking water, proper sanitation, environmental engineering and public health engineering are today pillars of United Nations Sustainable Development Goals. The vast vision and scientific stance of integrated water resource management and integrated wastewater management needs to be re-envisioned, re-organized and reframed as civilization, mankind and science moves forward. There are today lots of contributions of South Asian visionaries in the reframing and re-organizing of South Asian economy. The science of drinking water treatment and industrial wastewater treatment in South Asian perspective needs also to be re-envisioned and replete with scientific triumph and scientific re-imagination with the path of human civilization. The author in this article deeply reiterates the needs of scientific introspection and engineering ingenuity in mitigating global sustainability issues. Arsenic and heavy metal groundwater contamination are ravaging the Indian subcontinent. This article deeply elucidates the immediate needs of vision, capability and purpose in the success of applications of environmental engineering science, chemical process engineering and the holistic domain of nanotechnology [1-7].

3.0 Scientific forbearance, scientific revelation and the vast vision for the future:

Scientific forbearance, scientific revelation and engineering provenance in the field of nanotechnology and nano-engineering are the absolute needs of the hour. The scientific and engineering ingenuity of water science and technology needs to be replete with vision, discernment and scientific breakthrough. Twenty-first century today stands in the crossroads of ability, success, hope and intellect. South Asian nations are in the brink of newer scientific and engineering prowess. The visionaries of South Asia had always searched for scientific truth and scientific divination. Water remediation and climate resilience are the needs of human habitat in south Asia. The pillars of United Nations and Global Sustainable Development Goals needs to be implemented with vision, lucid insight and alacrity at the utmost. Global research and development initiatives in drinking water treatment, space technology and application of nuclear energy will go a long and visionary way in unfurling the needs of human race and society today. The large vision of economic resilience and economic progress are the two opposite sides of the visionary coin as regards South Asian countries. Truly, a newer dawn of human civilization will emerge if science, engineering, man and mankind moves towards zero-emission and zero-carbon emissions in the near future. Carbon sequestration is a pillar of Global Sustainable Development Goals today. South Asian countries need to tread forward towards a newer visionary era in environmental and energy resources sustainability.

4.0 The vision of Dr. Homi Bhabha and Dr. Vikram Sarabhai towards the economic progress of India:

The vision and the contribution of Dr Homi Bhabha and Dr. Vikram Sarabhai in the scientific and economic progress of India is absolutely unquestionable. South Asia today stands in the middle of a deep nuclear energy disaster. The vision of science and technology in the Indian context needs to be reframed with the passage of scientific history and time. Today, the challenges and ardor lies in the application of United Nations Sustainable Development Goals in South Asian countries. Nuclear non-proliferation is the absolute needs of the hour. The author deeply elucidates the absolute needs, necessities and dictum of the application of water sustainability, green sustainability and environmental remediation. Green chemistry, green engineering and green nanotechnology are the pillars and colossus of global scientific research initiatives today. Nanotechnology and nano-engineering needs to be merged with sustainable development today. A newer epoch in the field of nanotechnology will surely evolve if scientists, engineers, policy makers and civil society takes sound and positive steps in ensuring proper implementation of United Nations Sustainable Development Goals [8-14].

5.0 Swami Vivekananda and other visionaries teaching as regards India's research and development initiatives:

Swami Vivekananda's teachings are the path breaking efforts of human civilization today. India's and South Asia's research and development initiatives depends on the vision, purpose and capabilities of visionaries and eminent scientists in the Indian sub-continent. Today India's research and development initiatives depends on the futuristic vision of saints and visionaries in the yesteryears. The present day human civilization is a technology driven society. The pillars of human civilization are today the United Nations Sustainable Development Goals. The futuristic vision of Swami Vivekananda and other South Asian visionaries have created an indelible impact towards the future of South Asia's progress. Today is a visionary era in India's economy and social progress. Research and development initiatives in the global scientific and engineering firmament lies today in the deep crevice of scientific ingenuity and scientific alacrity. The author deeply stresses on the needs of space science and nuclear technology towards the progress of South Asian nations. Green nanotechnology, environmental remediation and bioremediation are the pillars of science and engineering today. This article deeply stresses on the needs of proliferation of science and engineering in the economic progress of the Indian sub-continent. Truly a newer epoch in the field of water technology, environmental remediation and industrialization will emerge if nations and scientists across the world takes positive initiatives in the successful stance of vision and science [8-14].

6.0 United Nations Sustainable Development Goals and the scientific discoveries in South Asia:

Environmental sustainability, energy resources sustainability and water sustainability are the utmost needs of the hour. South Asia stands in the midst of a serious drinking water crisis that is arsenic and heavy metal groundwater contamination. Provision of clean drinking water and clean and affordable energy are the pillars of United Nations

Sustainable Development Goals. Public health engineering stands in the midst of deep scientific comprehension and engineering vision. The contribution of visionaries in these areas of scientific research pursuit are immense and commendable. A concerted effort from scientists, policy makers and governments across the globe will surely open new windows of innovation in environmental engineering and water remediation in decades to come.

7.0 The vision of sustainability and the mitigation of poverty:

The vision of sustainability and the mitigation of poverty are the needs and dictums of human race today. Civilization, science and engineering vision stands in the middle of deep scientific introspection and contemplation. Mitigation of poverty, hardship and human struggle in the similar vision stands in the midst of a deep abyss of deep vision and comprehension. Water and wastewater treatment are the needs of the hour today. Provision of clean drinking water, proper sanitation and public health engineering are some of the cornerstones of United Nations Sustainable Development Goals. The author deeply reiterates the immediate needs of the application of Sustainable Development Goals and the ushering in of Fourth Industrial Revolution.

8.0 Drinking water treatment, industrial wastewater treatment and the vast vision for the future:

Drinking water treatment and industrial wastewater treatment are the visionary areas of global research and development initiatives today. Science and technology has practically no answers to arsenic and heavy metal groundwater contamination. The futuristic vision lies in the hands of scientists, governments and civil society across the world. The author deeply reiterates the immediate needs of green technology, green chemistry and green nanotechnology in the futuristic path of human civilization. The vast vision for the future needs to be envisioned as regards application of Sustainable Development Goals. This article deeply targets the immediate needs of sustainable nanotechnology and sustainable nano-engineering in the futuristic path of human civilization. Surely a new dawn in the human mankind will emerge if scientific and engineering research initiatives moves and treads towards a carbon-zero era and an epoch of carbon sequestration. There are today vast and visionary needs of clean and affordable energy. The author also stresses these areas of global sustainability issues and the contribution of visionaries in South Asia [11-14].

9.0 Futuristic outlook and futuristic flow of thoughts in the advancements of science and technology in the twenty first century:

The futuristic outlook and the futuristic flow of scientific thoughts needs to be reframed with the passage of scientific history and time. Human civilization is in the crossroads of Fourth Industrial Revolution and Internet 3.0. Science and technology has today no answers to the intricate questions of environmental remediation and groundwater arsenic contamination in South Asia. Bio-remediation, biotechnology and biological engineering are the pinnacles of global research and development initiatives today. Urban sustainability is today the order of the day. This article deeply stresses the need of water technology and water engineering in the futuristic emancipation of science and engineering globally. Discoveries and inventions in chemical process engineering, environmental engineering science and nanotechnology needs to be reframed and re-organized with the treading of science and civilization. There are immediate needs of water and wastewater treatment. Human society's immense scientific triumph will surely go a long and visionary way in unfurling the scientific truth of environmental engineering science and nanotechnology [13, 14].

10.0 Conclusion and scientific perspectives:

Science, civilization and mankind are today in the midst of deep scientific regeneration and deep scientific rejuvenation. Drinking water heavy metal contamination is a marauding issue in South Asia particularly India and Bangladesh. The scientific and technological perspectives needs to be reorganized with strong scientific reimagination. Space science, nuclear science and the holistic world of nanotechnology needs to be integrated to each another. Drinking water treatment and industrial wastewater treatment are the pillars of global sustainability initiatives today. The engineering vision of science and technology of space science and nuclear science in South Asia needs to be re-organized as civilization treads forward. A strong scientific and engineering initiative is the immediate need of the hour. A newer world of vision, capability and purpose will emerge if nations across the globe trudge forward towards a newer epoch in the field of nanotechnology.

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