



सत्यमेव जयते

75  
Azadi Ka  
Amrit Mahotsav

# NATIONAL INSTITUTE OF BIOLOGICALS NEWSLETTER



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Image Courtesy: [mkgandhi.org/gallery.htm](http://mkgandhi.org/gallery.htm)

*“Your beliefs become your thoughts. Your thoughts become your words. Your words become your actions. Your actions become your habits. Your habits become your values. Your values become your destiny.”*

— M. K. Gandhi.

## Director's Desk



Azadi ka Amrit Mahotsav 2022 has created a milestone for the nation by dedicating to the people of India who have not only been instrumental in bringing India thus far in its evolutionary journey but also hold within them the power and potential to enable Hon'ble Prime Minister Shri. Narendra Modi's vision of activating India 2.0, fuelled by the spirit of Aatmanirbhar Bharat.

History is witness that a thread of Khadi became the force of freedom movement and breaks the chains of slavery.

Bapu instilled the spirit of self-belief that a teacher, lawyer, doctor, scientist, in whatever they were doing, they were contributing to India's freedom struggle. His photograph of looking into the microscope more than sums up his conviction and interest in Science. If one studies his thoughts, actions and writings, one would find that he analysed and investigated his own life in the same microscopic manner, going to the minutest of details.

Mahatma Gandhi called Hindi the language of the masses as it ties the nation in a thread of unity and has a unifying force even during freedom struggle to hasten India's journey to independence. September 14<sup>th</sup> is celebrated as Hindi Diwas every year to further strengthen and spread this public consciousness across the country. NIB also celebrated Hindi Pakhwada from 14.09.2022 to 29.09.2022 to showcase the importance of the day and the language.

Continuing with the tradition of training under the National Skill Development programme on Quality Control of Biologicals, NIB trained about 30 M.Sc. Biotechnology Students of Himachal Pradesh University, Summer Hill, Shimla & Shaheed Mahendra Karma Vishwavidyalaya, Bastar, Chhattisgarh. NIB also commemorated structured training courses for manufacturers and students.

I wish Good Luck to All!!

Anup Anvikar  
Director

*"My Life is My Message."*

— *M. K. Gandhi.*

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## MAHATMA GANDHI – “AN UNKNOWN SCIENTIST”

Y. Madhu, Scientist-III & Editor.

***“Ahimsa is a science. The word 'failure' has no place in the vocabulary of science”.***

**- Mahatma Gandhi**



On the occasion of Mahatma Gandhi's 153<sup>rd</sup> Birth Anniversary and on the occasion of celebrations of 75 years of India's Independence as 'Azadi Ka Amrit Mahotsav', we, thought to look into the unknown facet of Mahatma Gandhi's mesmerizing personality. By reading extensive literature on Mahatma Gandhi we hardly find mention about his interest in Science and his contribution in the area of Science. We all know Mahatma Gandhi in relevance to Non-Violence, Satyagraha, Freedom Movement, Charkha, Truth and Disobedience, but not as a Scientist. In the literature there are insufficient attention to his contribution to the intellectual history, the sociology of knowledge, particularly his views on Science and Technology for the development of a country. In this article, we have attempted to throw light on some of the information about his views on science focusing on his Collected Works (1888 – 1948). This effort will place Gandhiji's position to the Science and Technology at a different level as well as influence the modern population and their mind particularly, the students.

When we look at the name of his autobiography “My Experiments with Truth”, we definitely connect with Gandhiji's scientific approach towards leading his life, as he tells & talks about experiments, practice (practical) and results and then he focuses on implementation and refinement. He perform experiments on his own life with truth. *“I simply want to tell the story of my numerous experiments with truth and as my life consists of nothing but those experiments.....I claim for them nothing more than does a scientist, who, though he conducts experiments with utmost accuracy, forethought and minuteness, never claims any finality about his conclusion, but keeps an open mind regarding them – Gandhi, an Autobiography or the Story of My Experiments with Truth.”*

Gandhiji's views on science have often been seen as presumed upon his views on machinery, the machine age and modern civilisation. *“I believe that Independent India can only discharge her duty towards a groaning world by adopting a simple but ennobled life by developing her thousands of cottage (industries) and living at peace with the world. All the graces of life are possible only when we learn the art of living nobly – Gandhi, Alternative to Industrialism; August 25, 1946, CWMG.”*

He believed in his eleven vows, namely “Non-violence, Truth, Control over palate (taste) (practising self-restraint of the senses), Celibacy, Physical work, Non-stealing, Non-possession, Fearlessness, Removal of caste barrier, Equality in religion, Swadeshi or self-reliance”. He experimented almost all these vows on his life.

Mr. Visvanathan, in one of his publications described him as one of the great and most inventive scientists of the swadeshi era. To escape the modern west, Gandhiji had to subvert or transform science, playfully and politically. According to him Gandhiji's was a fluid science of resistance. In Gandhiji's altered organisation of science, science would need money the least and that there would be instead of big laboratories, ashrams and gurukuls of science (1997; 212-44). Gandhiji's keen interest in improvements in machinery and various kinds of hand tools for spinning is evident from his correspondence with many inventors.

There is enough literature of Gandhiji expressing himself directly on the subject in many of his writings. On Khadi and Education, and almost throughout his Collected Works, in letters to his co-workers and speeches, Gandhiji regularly uses the term 'science'. He often uses the term 'science of khadi' and 'science of the spinning wheel' and he envisaged the community worker as a scientist. The charkha to Gandhiji was also a grand and noble science.

Gandhi was never opposed to any science, technology or scientific work. He always opinioned that the outcome of science and technology should help poor and should be the reason for country's progress towards self-sustainability. Scientists should aim their work for the health and welfare of their country's needy and its results should reach till its villages. He view the motivation for scientific activity should come from one purpose

– human welfare. This view is reflected very clearly when he states: “I would prize every invention of Science made for the benefit of all (Hingorani, A.T.(ed), 1966, pp73,79) or “Take the case of Singer’s Sewing Machine. It is one of the few useful things ever invented (Gandhi M.K., Hind Swaraj, 1938, pp. 8, 59, 61, 62)

In one of the recent publications “Health file of Mahatma Gandhi – his experiments with Dietetics and Nature Cure” (Dr. Balram Bhargava & Dr. Rajni Kant, Indian J Med Res.149 (Supplement), January 2019, pp. 5-23), it is mentioned that, though Gandhiji believed in all systems of medicine, he was particularly drawn to nature cure and believed in preventive techniques for disease management.

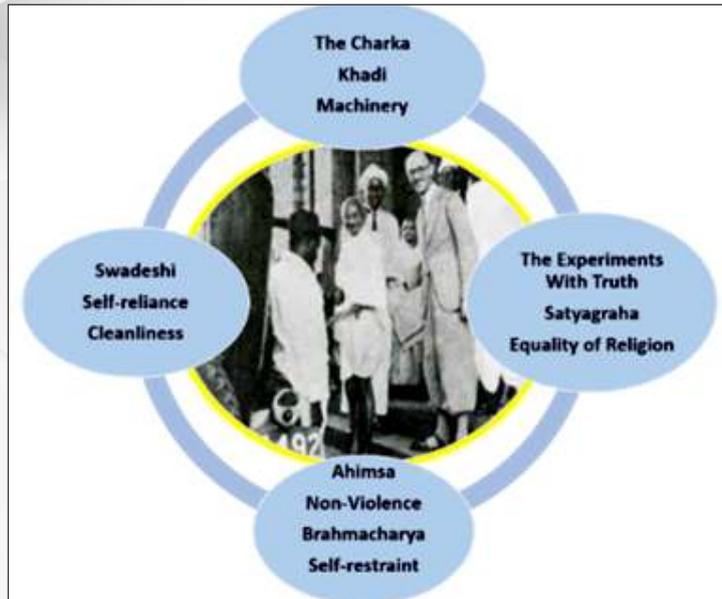


Fig.A : 12<sup>th</sup> of July 1927, Mahatma Gandhiji visited Indian Institute of Science campus, Bengaluru & Eleven Vows of Mahatma

He was a strong believer in nature cure, the Ayurvedic system of medicine and learnt yoga as well. When it comes to his own health, he would treat himself through nature cure or by fasting and experimenting with dietetics. He used to do experiments like earth and water treatment, fasting etc. for his various health conditions. He even followed his firm conviction for “No to Milk” experiments on his life. Most of these experiments were tried while he was in South Africa and he learnt from experience that these experiments involved certain risks. He also said that these experiments were not meant to simply demonstrate success, and that all experiments cannot claim complete success. While observing “Ekadashi” and other fasting, he said that fasting could be a powerful weapon of indulgence as well as of restraint.

While inaugurating a medical college in Delhi in 1921 at the request of Hakim Ajmal Khan, he said, “I would like to pay my tribute to the spirit of research that fires modern scientists”. He was delighted that new hospitals also had a western wing along with Ayurveda and Unani, and highlighted that the union of the three systems would result in harmonious blend of all the disciplines. Later while speaking in Madras and in Kolkatta, he emphasized that Ayurvedic physicians should learn about better diagnostics and treatment like the western systems as he was impressed with the inventions and discoveries made by western physicians and surgeons. Once sceptical of modern medicine, Gandhiji came to appreciate modern medicine later in his life.

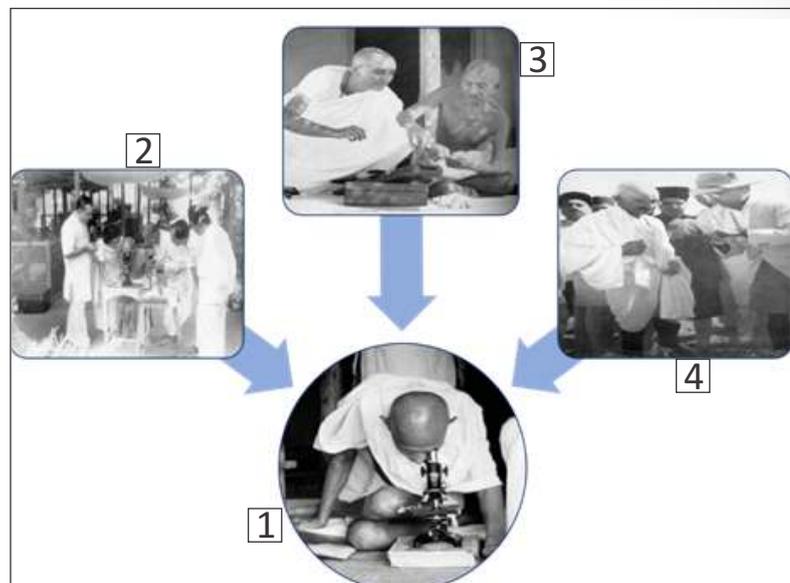


Fig.B : 1. Gandhiji Studying Leprosy germs, Segaon, December 1939  
 2. Gandhiji inspecting the 'hook worms' through microscope during his convalesce at Jehangir Patel's hut in Juhu, Bombay. May 1944.  
 3. Miraben helping Gandhiji repair his Charkha, Wardha, 1936.  
 4. Gandhi studying compost system at the Institute of Plant Industry, Indore, Apr.1935.

Gandhiji was a keen observer of physical fitness and has a great passion for walking. In 1947, he said that people engaged in intellectual work should also take on physical work, as that would improve the quality of their intellectual output.

Another important area in which Gandhiji contributed and taught a lot is hygiene and cleanliness. He conducted experiments in Sevagram with different types of latrines to make the cleaning process free of offensive smell and to use then as night soil for fertilizing farms. This make the process hygiene, economically productive as well socially important.

The above information available from different sources of literature on Mahatma Gandhi, reveals the research scientist in him while observing his personality, attitude, his approach towards various tasks and experiments he perform on his life rather than a mere mass leader or a politician. This information is compilation of a very few published articles on Mahatma Gandhi and science. If we go through the vast literature available it will definitely make us to view Mahatma as a Scientist in addition to his popular tag of Great Mass Leader or Politician.

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**Images Courtesy:**

1. [mkgandhi.org/gallery.htm](http://mkgandhi.org/gallery.htm)
2. <http://www.facebook.com/iiscbagalore/photos>.

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1. Gandhi MK, The Story of My Experiments with Truth: An Autobiography; Navajivan Publishing House, Ahmedabad; 1927.
2. Collected Works of Mahatma Gandhi (1888 – 1948).
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7. Shafneed CH. Gandhi & Health: Award-Winning Essay. Indian J Med Res. 2019 Jan;149(Suppl):S153-S157. doi: 10.4103/0971-5916.251673. PMID: 31070193; PMCID: PMC6515726.

**PROFICIENCY TESTING (PT) /  
EXTERNAL QUALITY ASSURANCE SCHEME (EQAS)**

- Biochemical Kit Laboratory is enrolled on the Association of Clinical Biochemists of India/ Christian Medical College (ACBI/CMC) External Quality Assessment Scheme (EQAS) - 2022 for Chemistry II (Glucose, Cholesterol & Triglycerides), conducted by the Department of Clinical Biochemistry, Christian Medical College, Vellore. The test was put up on 11.07.2022, 10.08.2022 & 15.9.2022 for Chemistry II for the month of July, August & September 2022 and the generated results were uploaded on the CMC-EQAS website.
- Blood Reagent Laboratory successfully participated in Proficiency Testing (PT) with IRCS, New Delhi for Anti-H (Lectin), BSA, Anti-A1 (Lectin), & Anti-A1 (Lectin) (04 Samples). The results were 100% concordant and the performance of all the analysts of the concerned lab was 100% satisfactory.

**TECHNICAL EXPERT COMMITTEE MEETINGS:**

- Dr. Gauri Misra, Scientist-II & Head CKTL, participated as an expert in the First Hub Meeting to facilitate the innovators in their product development and entrepreneurship journey held on 8.7.2022 organised by BIRAC on virtual platform.
- Dr. Meena Kumari, Scientist-II & Head BPL, nominated as a member of "Expert Working Group-Blood and Blood-Related Products" of Indian Pharmacopoeia by Indian Pharmacopoeia Commission (IPC), Ghaziabad.

- Dr. Akanksha Bisht, Scientist-II & Head HvPI was the resource person for The National Workshop on Blood Safety Roadmap for Blood Transfusion Services in India, organized by the Directorate General of Health Services (DGHS), with the support of the WHO Country Office and NIB held on 14-15 July 2022 at NIB, NOIDA. She delivered a talk on “Haemovigilance Programme of India” in the said workshop.
- A team of Senior Officials of DPSRU and NIB had a meeting on 10.08.2022, to discuss and finalize the modalities on various aspects for “Certificate programme on Quality Control of Biopharmaceuticals”.
- Dr. Meena Kumari, Scientist-II & Head, BPL, along with Scientist Grade-III of the laboratory participated (on virtual platform) in the 6<sup>th</sup> Meeting of the Expert Working Group- Blood and Blood-Related Products held on 17.08.2022, organized by the IPC, Ghaziabad.
- Dr. Ratnesh Kumar Sharma Scientist-II & Head TAL, participated in the “Management development program on administrative vigilance role of enquiry officer/presenting officer” from 22<sup>nd</sup> August to 26<sup>th</sup> August 2022 at Shillong, Meghalaya
- Dr Suresh Kumar, Scientist Grade III, participated as an external expert to revise and reframe the regulations under the purview of Minimum Standard of Veterinary Education Degree Course Curriculum - B.V.Sc. & A.H Regulations for Veterinary College in the context of Laboratory Animal Science and Medicine organised by Veterinary Council of India (VCI) on 30.08.2022.
- Ms. Shalini Tewari, Scientist III & Head QMU, participated in Webinar on NABCB Accreditation for Inspection Bodies, and its Benefits to Industry & Government Bodies held on 30.08.2022 organised by National Accreditation Board for Certification Bodies, Quality Council of India, New Delhi.
- Dr. Gauri Misra, Scientist Grade-II & Head CKTL participated as an expert in the First Hub Meeting of BIRAC held on 1.9.2022 to examine the revised NAT specifications based on the comments received from Global Advisory Panel.
- Dr. Gauri Misra, Scientist Grade-II & Head CKTL participated as an expert in the First Hub Meeting of BIRAC held on 2.9.2022 for facilitating the queries of innovators/ start-ups of BIRAC.

## **INVITED TALK/ LECTURES**

- Dr. Gauri Misra, Scientist-II & Head CKTL presented a talk in “Therapeutic natural compounds Enzastaurin and Palbociclib inhibit MASTL kinase activity preventing breast cancer cell proliferation” in Global Conference on Cell and Gene Therapy held from 04-05, July 2022 as a Webinar in World Cell Therapy-2022.
- Dr. Suresh Yadav, Scientist III, presented talk on “Evaluation of the effect of IRAK 1/4 kinase inhibitors in Imiquimod induced Psoriasis model in mice” in the 48<sup>th</sup> Annual conference of Indian Immunology Society at Banaras Hindu University, Varanasi held from 8<sup>th</sup> – 9<sup>th</sup> July, 2022.
- Dr. Shikha Yadav, Scientist Grade- II & Head, In Vivo Bioassay Laboratory & Animal Facility delivered lecture on “Ethical Evaluation- International Perspective, Severity Classification, humane endpoints and search for alternatives” as a faculty at the Federation of European Laboratory Animal Science Association’s (FELASA) Accredited training program on “Certificate Course in Laboratory Animal Science” at Tamil Nadu University of Veterinary and Animal Sciences (TANUVAS), Chennai held on 15<sup>th</sup> July 2022.
- Dr Harish Chander, Deputy Director (QC) delivered lecture (on virtual platform) on “Recent Issues of National Lot Release” for the seventh WPR NCL workshop held on 06.09.2022 organised by Global Bio Conference, Ministry of Food and Drug Safety, South Korea.
- Dr. Richa Baranwal, Scientist III, delivered a talk on “Performance evaluation/ Clinical Evaluation of In-vitro Diagnostic Kits” on 26.09.2022 during three days training program on “Preparedness for Transition to licensing under medical Devices Rules (MDR) for Drug Inspectors/ Medical devices officers organized by National Institute of Health and Family Welfare (NIHFW) in collaboration with Central Drugs Standard Control Organization at New, Delhi.

## TRAININGS & VISITS:

Five days “Short-term training course on RT-PCR including RNA extraction” was conducted from 04<sup>th</sup>–08<sup>th</sup> July 2022 under Structured Training Courses. 1 medical professional from Gov. Bundelkhand Medical College, Sagar, M.P participated in this training course.



Five days training course on “Cell Culture-based Techniques for evaluation of Biologicals and Vaccines” was conducted from 04<sup>th</sup>–08<sup>th</sup> July 2022 under Structured Training Courses. Two Ph.D Scholars & one under graduate student from different universities participated in this training course.



NIB hosted a visit to 38 B. Pharm students along with 04 Faculty members from the College of Pharmaceutical Sciences, (Govt. Medical College Kottayam, Kerala) on 13.07.2022 The students were given a basic overview of NIB and organized tour to various Laboratories and interacted with senior Scientists of the institute.

Five days training on “Quality Control of Blood Products using Atomic Absorption Spectrometry” was conducted from 22<sup>nd</sup>–26<sup>th</sup> August 2022 under Structured Training Courses. Laboratory Imparted Hands-on training to two industry personnel from Samarth Life sciences Pvt Ltd, Tumkur, Karnataka and one student from Chhatrapati Sahu Ji Maharaj University Kanpur Nagar, U.P.



Five days training on “Internal Quality Control and Method Validation Basics” was conducted from 5<sup>th</sup>–9<sup>th</sup> September 2022 under Structured

Training Courses. One MD student of Bundelkhand Medical College, Sagar, Madhya Pradesh attended the programme.



Under National Skill Development Programme Training organised on Quality Control of Biologicals to 30 M. Sc. Biotechnology Students from

Himachal Pradesh University, Summer Hill, Shimla & Shaheed Mahendra Karma Vishwavidyalaya, Bastar, Chhattisgarh from 12<sup>th</sup>–23<sup>rd</sup> September, 2022.



47 Officials from NABL- Gurugam visited NIB testing facility on 16.09.2022 as a technical tour to understand the testing activities of biological products undertaken at NIB. NABL officials interacted with NIB scientists during the visit to various laboratories.

## PUBLICATIONS

- Rashmi Shrivastava. Proactive regulators key to safe biopharmaceuticals. 27.07.2022. <https://360info.org/proactive-regulators-key-to-safe-biopharmaceuticals/> (360 info supplies content to other publishers via our newswire service).
- S Chand, KN Mihooliya, DK Sahoo, JP Prasad, G Sharma. L-asparaginase from Bacillus flexus strain SS: Isolation, Screening, Production Process Optimization, Purification, and Anticancer Activity. Applied Biochemistry and Microbiology. 2022: 58(4): 416-427.
- Anoop Kumar, Praveen Rai, Recent advances and strategies in vaccine development against HPV, Immunodiagnosis Treatment of HPV induced Malignancies, Academic Press 2022, ISBN: 9780323917971.

## CELEBRATIONS OF HINDI PAKHWADA 2022:

- NIB celebrated Hindi Diwas and Hindi Pakhwad from 14.09.2022 to 29.09.2022. Various competitions have been organised to encourage the use of Hindi language in routine office practices.



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