

EU- Research Newsletter

(Quarterly)

EU-Research Newsletter is a Quarterly Newsletter framed under Sponsored Research and Industrial Consultancy (SRIC)

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Dr. Puneet Negi

Mr. Muthukumaran



Baba Iqbal Singh Ji
President, The Kalgidhar Trust; Chancellor, Eternal University
Baru Sahib



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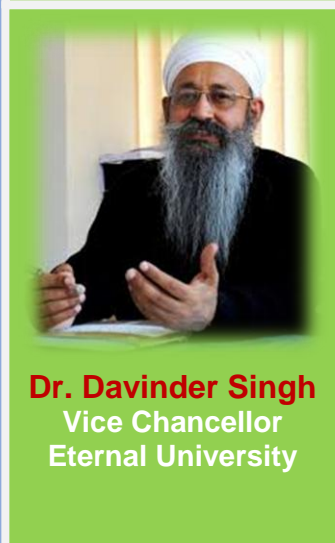
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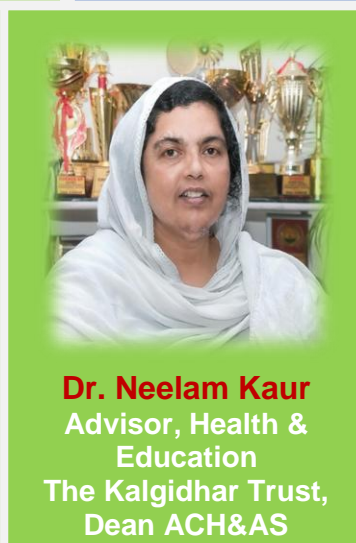
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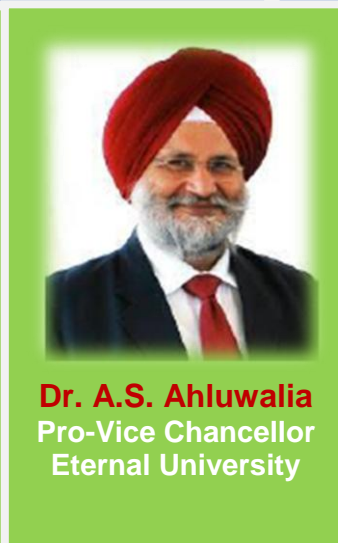
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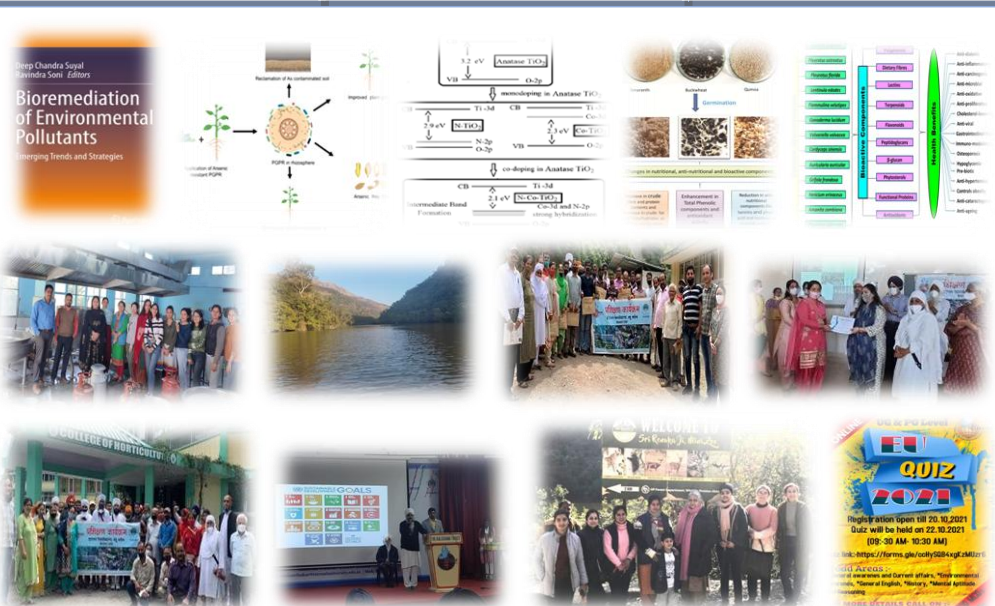
Dr. Davinder Singh
Vice Chancellor
Eternal University



Dr. Neelam Kaur
Advisor, Health & Education
The Kalgidhar Trust,
Dean ACH&AS



Dr. A.S. Ahluwalia
Pro-Vice Chancellor
Eternal University



Messages



Dr. Davinder Singh
Vice Chancellor
Eternal University

Research is an essential element for internal quality assurance of any institution. Research should be for mankind and for sustainable world. University research activities have vital importance for dynamic teaching and learning progression. *EU- Research Newsletter* is a great initiative by SRIC Committee to encourage the faculty members for their research contributions to nurture the University profile not only in India but all over the world. I wish good luck to the team SRIC for future activities regarding research and development for nourishing the University Profile.



Dr. Neelam Kaur
Advisor, Health & Education,
The Kalgidhar Trust
Member, Governing Body,
Akal University and Eternal
University

The role of research in an academic institution is very much significant for the innovative knowledge driven sustainable development. *EU- Research Newsletter* going to be launched by SRIC committee will help to build up a strong research culture among our EU scientists and stimulate their research efforts. I hope to see Eternal University as a centre of excellence for innovation and new knowledge with visibility of research outputs in the nearby regions and worldwide. All the best to the team SRIC for their wholesome efforts.



Dr. Amrik Singh Ahluwalia
Pro- Vice Chancellor
Eternal University

We are proud that research is continuously evolving at Eternal University because of collective efforts made by our researchers and members of the SRIC committee with the support of Kalgidhar Trust Society, Baru Sahib; the managing and governing body of EU. At present, we have dedicated research labs across the EU campus having ample opportunities to access the research facilities to conduct sophisticated research work. *EU- Research Newsletter* is a good online platform for communicating the university research and development activities globally.

Sponsored Research & Industrial Consultancy (SRIC)

Eternal University pleased to reconstitute a committee comprising the following members for the Sponsored Research & Industrial Consultancy Letter Ref: EU/VCO/23/40 dated 07/12/2021.

1. Dr. NP Singh, Dean Research - Chairman
2. Mr. SC Ghosh, Director, UCRC - Member
3. Dr. Neelam Thakur, Assistant Professor - Member
4. Dr. Imran, Assistant Professor - Member
5. Dr. Deep Chandra Suyal, Assistant Professor - Member
6. Mr. Muthukumaran T, Assistant Professor - Member
7. Dr. Puneet Negi, Assistant Professor - Member Secretary

The Responsibilities of the Committee are as follows:-

- i. To promote research at university, local, national and international level.
- ii. To explore research collaboration and funding at various level
- iii. To conduct various researches related activities viz workshop/ seminars etc.
- iv. To oversee, compile and keep a repository of all the research proposals
- v. To revise/ frame research promotion policies for the EU.
- vi. To bring out quarterly e –EU Research Proceedings.

Research Publications

Research Articles

Tailoring of structural, optical and electrical properties of anatase TiO₂ via doping of cobalt and nitrogen ions. Sharma A, Negi P, Konwarb RJ, Kumar H, Verma Y, Shailja, Sati PC, Rajyagurue B, Dadhiche H, Shahe NA, Solankie PS (2022) *J Mater Sci Technol* 111: 287-297.

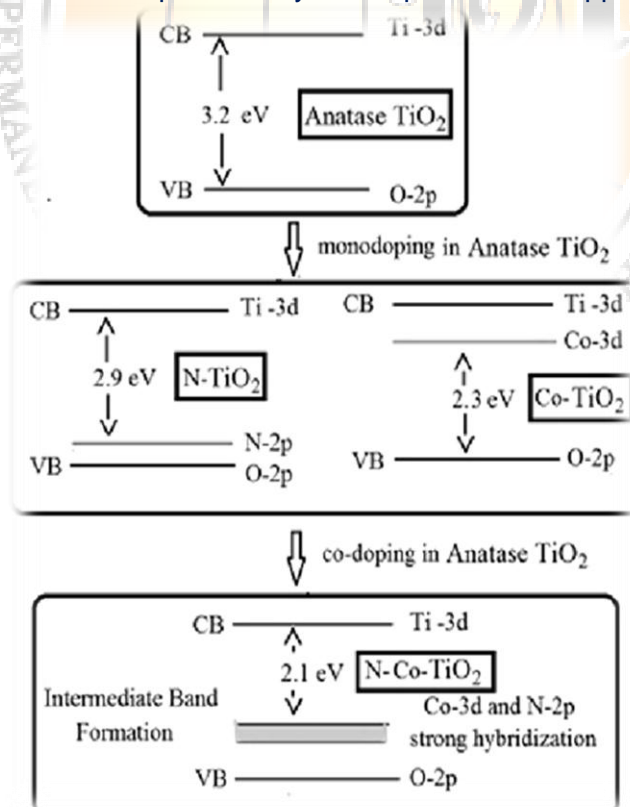
DOI: 10.1016/j.jmst.2021.09.014 (<https://doi.org/10.1016/j.jmst.2021.09.014>)

Impact Factor (Thomson Reuters): 8.067

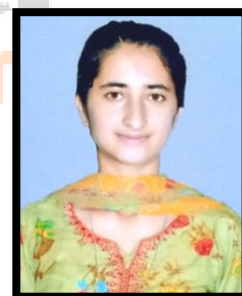
Publisher: Elsevier; **Available Online:** 01 December 2021

Department: Physics

Abstract: Pure (pristine) anatase and mono-doped and co-doped derivatives of TiO₂ having nitrogen (N) and cobalt (Co) as dopants with respective fixed doping concentrations of 0.7 mol.% and 1.0 mol.% were synthesized using auto-combustion sol-gel technique. The doping effects at corresponding non-metal and transition metal sites of TiO₂ on the basis of the structural, optical and electrical properties have been investigated. X-ray diffraction (XRD) measurement confirms the formation of pure anatase phase of TiO₂ for all samples having I₄₁/amd space group of tetragonal structure which has been also verified by the Raman spectroscopy measurement. Various crystallographic parameters have been calculated by performing Rietveld refinement of XRD data including average crystallite size that has been observed in the range of 10–15 nm. Pure anatase phase indicates the incorporation of Co²⁺ into TiO₂ lattice which assists the substitution of N in place of oxygen in co-doped TiO₂. The band gap tuning towards the visible region from 3.2 to 2.1 eV has been achieved with mono-doping and co-doping of the N and Co in TiO₂ lattice. This can be described in terms of the formation of localized levels of N-2p and Co-3d states in mono-doping and an isolated intermediate band formation in co-doping case. Electrical properties have been investigated in details and explained as the synergetic effects of structural and inherent ionic characters of various dopants. The observed band gaps of all doped samples lie within the visible region which makes them pertinent as the solar energy harnessing materials for photocatalytic and photovoltaic applications.



Dr. Puneet Negi



Anchal Sharma



Yogita Verma



Shailja

Review Articles

Edible Mushrooms: A Comprehensive Review on Bioactive Compounds with Health Benefits and Processing Aspects. Kumar K, Mehra R, Guiné RPF, Lima MJ, Kumar N, Kaushik R, Ahmed N, Yadav AN, Kumar H (2021) *Foods* 10: 2996.

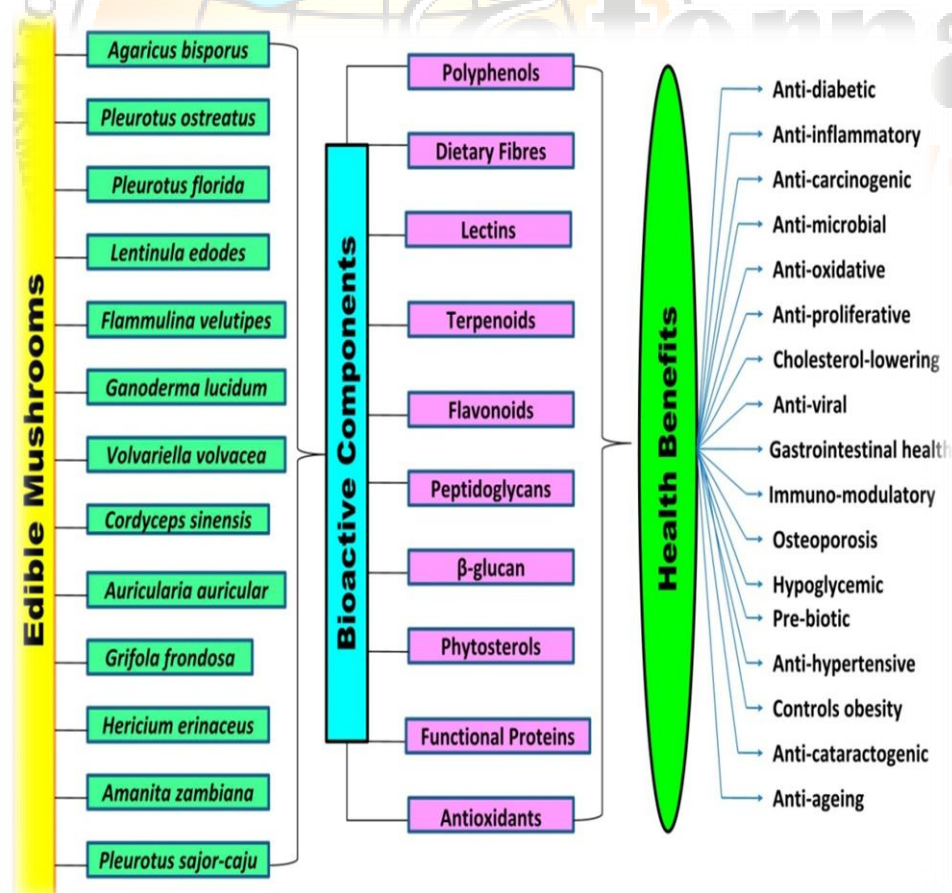
DOI: 10.3390/foods10122996 (<https://doi.org/10.3390/foods10122996>)

Impact Factor (Thomson Reuters): 4.350

Publisher: MDPI ; Available Online: 04 December 2021

Department: Food Technology, Biotechnology

Abstract: Mushrooms are well-known functional foods due to the presence of a huge quantity of nutraceutical components. These are well recognized for their nutritional importance such as high protein, low fat, and low energy contents. These are rich in minerals such as iron, phosphorus, as well as in vitamins like riboflavin, thiamine, ergosterol, niacin, and ascorbic acid. They also contain bioactive constituents like secondary metabolites (terpenoids, acids, alkaloids, sesquiterpenes, polyphenolic compounds, lactones, sterols, nucleotide analogues, vitamins, and metal chelating agents) and polysaccharides chiefly β -glucans and glycoproteins. Due to the occurrence of biologically active substances, mushrooms can serve as hepatoprotective, immune-potentiating, anti-cancer, anti-viral, and hypocholesterolemic agents. They have great potential to prevent cardiovascular diseases due to their low fat and high fiber contents, as well as being foremost sources of natural antioxidants useful in reducing oxidative damages. However, mushrooms remained underutilized, despite their wide nutritional and bioactive potential. Novel green techniques are being explored for the extraction of bioactive components from edible mushrooms. The current review is intended to deliberate the nutraceutical potential of mushrooms, therapeutic properties, bioactive compounds, health benefits, and processing aspects of edible mushrooms for maintenance, and promotion of a healthy lifestyle.



Dr. Krishan Kumar



Dr. Naseer Ahmed



Dr. Ajar Nath Yadav

Effect of soaking and germination treatments on nutritional, anti-nutritional, and bioactive properties of amaranth (*Amaranthus hypochondriacus* L.), quinoa (*Chenopodium quinoa* L.), and buckwheat (*Fagopyrum esculentum* L.). Patyal P, Kumar K, Ahmed N, Chauhan D, Rizvi QUEH, Jan S, Singh TP, Dhaliwal HS (2021) *Current Research in Food Science* 4: 917-925.

DOI: 10.1016/j.crfs.2021.11.019 (<https://doi.org/10.1016/j.crfs.2021.11.019>)

Impact Factor (Thomson Reuters): -

Publisher: Elsevier; Available Online: 01 December 2021

Department: Food Technology, Biotechnology

Abstract: Pseudocereals have attracted the attention of nutritionists and food technologists due to their high nutritional value. In addition to their richness in nutritional and bioactive components, these are deficient in gluten and can serve as valuable food for persons suffering from gluten allergies. Processing treatments are considered an effective way to enhance the quality of food grains. Soaking and germination are traditional and most effective treatments for enhancing the nutritional and bioactive potential as well as reducing the anti-nutritional components in food grains. This study reflects the effect of soaking and germination treatments on nutritional, bioactive, and anti-nutritional characteristics of pseudocereals. There was a significant ($p \leq 0.05$) increase in nutritional and bioactive components such as crude fiber, crude protein, phenolic components, antioxidant activity, and mineral content but reduced the anti-nutrients such as tannin and phytic acid. In amaranth, there was a significant increase ($p \leq 0.05$) of 7.01, 74.67, 126.62, and 87.47% in crude protein, crude fiber, phenolic content, and antioxidant activity but significant ($p \leq 0.05$) reduction of 32.30% and 29.57% in tannin and phytic acid contents, respectively. Similar changes in values of crude proteins, crude fiber, phenolic content, and antioxidant activity were observed in buckwheat and quinoa. While the anti-nutritional components such as tannin and phytic acid decreased by 59.91 and 17.42%, in buckwheat and 27.08% and 47.57%, in quinoa, respectively. Therefore, soaking and germination proved to be excellent techniques to minimize the anti-nutritional component and enhance the nutritional, bioactive, and antioxidant potential of these underutilized grains.



Dr. Krishan Kumar



Dr. Naseer Ahmed



Dr. Tajender Pal Singh



Prof. Harcharan Singh Dhaliwal

Leveraging arsenic resistant plant growth-promoting rhizobacteria for arsenic abatement in crops. Kumar S, Choudhary AK, **Suyal DC**, Makarana G and Goel R (2022) *J Hazard Mater* 425: 127965.

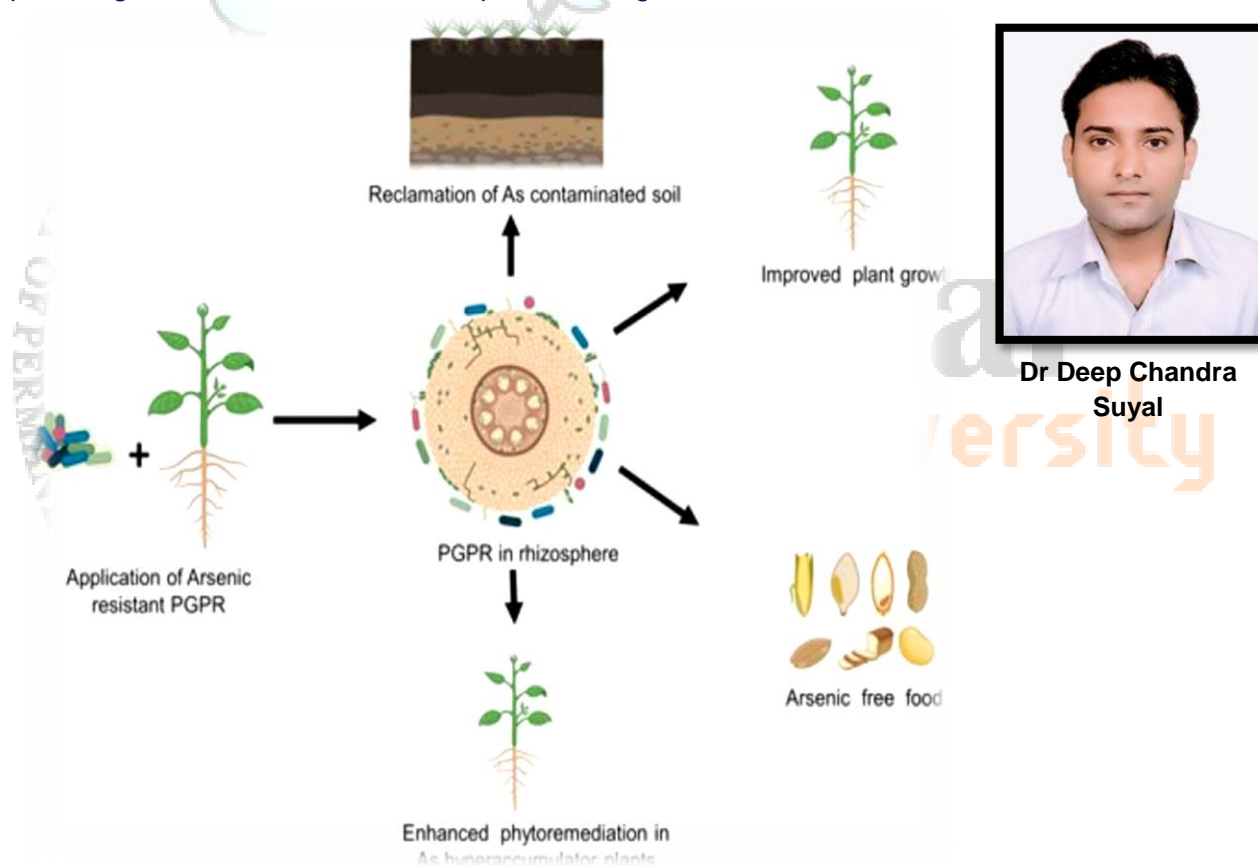
DOI: 10.1016/j.jhazmat.2021.127965 (<https://doi.org/10.1016/j.jhazmat.2021.127965>)

Impact Factor (Thomson Reuters): 10.588

Publisher: Elsevier; Available Online: 01 December 2021

Department: Microbiology

Abstract: Arsenic is a toxic metalloid categorized under class 1 carcinogen and is detrimental to both plants and animals. Agricultural land in several countries is contaminated with arsenic, resulting in its accumulation in food grains. Increasing global food demand has made it essential to explore neglected lands like arsenic-contaminated lands for crop production. This has posed a severe threat to both food safety and security. Exploration of arsenic-resistant plant growth-promoting rhizobacteria (PGPR) is an environment-friendly approach that holds promise for both plant growth promotion and arsenic amelioration in food grains. However, their real-time performance is dependent upon several biotic and abiotic factors. Therefore, a detailed analysis of associated mechanisms and constraints becomes inevitable to explore the full potential of available arsenic-resistant PGPR germplasm. Authors in this review have highlighted the role and constraints of arsenic-resistant PGPR in reducing the arsenic toxicity in food crops, besides providing the details of arsenic transport in food grains.



Book Chapters

Role of Biochar in Wastewater Treatment and Sustainability. Sahu B, Srivastava A, **Suyal DC**, Kumar R, Soni R (2022) In: Suyal DC, Soni R (eds) Bioremediation of Environmental Pollutants. Springer, Cham, pp 339-349.

DOI: 10.1007/978-3-030-86169-8_15;

https://link.springer.com/chapter/10.1007/978-3-030-86169-8_15

Publisher: Springer; **Available Online:** 12 December 2021

Department: Microbiology

Abstract: In recent years, the increase in urbanization and fast growth of industrialization seriously threatened the ecological environment and human health, by the addition of different organic and inorganic pollutants including heavy metals viz. As (III), Cu (II), Cr (VI), Hg (II), Pb (II), etc. in the wastewater. Adsorption is an effective and economically viable way to remove pollutants from wastewater. Biochar, a class of famous carbon material, incredible potential, widely available, eco-friendly, and low-cost material shows an efficient elimination of the contaminants by adsorption method. This paper summarizes the different sources of biochar, application of biochar, and potential of biochar in the reclamation of wastewater by removing TOC and CECs. This review also summarizes the removal mechanism of organic and inorganic pollutants. Recommendations for future aspects on biochar as an excellent source to get rid of organic and inorganic contaminants are made.



**Dr Deep Chandra
Suyal**

Perspective of Agro-Based Bioenergy for Environmental Sustainability and Economic Development. Singh D, Singh M, Sharma IP, **Gabba D**, **Gola U**, **Suyal N**, **Singh N**, **Negi P**, Kumar N, Giri K, Soni R, **Suyal DC** (2021) In: Kumar N, Singh H, Kumar A (Eds). Renewable Energy and Green Technology: Principles and Practices. CRC Press, Taylor & Francis, pp 55-64.

DOI: 10.1201/9781003175926

<https://doi.org/10.1201/9781003175926>

Publisher: CRC Press, Taylor & Francis; **Available Online:** 09 December 2021

Departments: Microbiology, Physics

Abstract: The energy sector holds a great role in the prosperity and economic development of both developed and developing countries. The increasing population has created tremendous pressure on non-renewable energy resources. Intensive exploitation of these energy resources hampers the environmental quality and development of human society on one hand and economic growth on the other. Indiscriminate use of non-renewable energy resources has also largely contributed to greenhouse gas emissions and global climate change. The unprecedented change in global climate has become a critical challenge and one of the global environmental issues of the 21st century. Bioenergy is a promising alternative energy resource able to fulfil the fuel requirements to a certain extent. In recent years, the bioenergy sector has gained massive attention as an alternative source to cope with the increasing demand and prices of non-renewable energy resources. The agricultural sector plays a central role in bioenergy production through crops, residues, and agro-industrial wastes. However, these resources' economic viability may prove to be the greatest challenge in producing truly renewable energy on farms. Moreover, technologies, scale effects, integration, and competition are the critical economic factors that enhance the competitiveness among bioenergy and fossil-fuel-based energies. In the present

scenario, significant quantities of bioenergy can be generated without compromising the integrity of the biological pyramids and nutrient recycling processes, provided simultaneous improvements in their efficiency are ensured. Considering the rising demand and prices of non-renewable energy resources, socio-economic impacts, and climate change, focus on the development of bio-green energy is the need of the hour. This chapter will emphasize on prospects of agro-based bioenergy production as a promising alternative to depleting fossil fuel-based energy resources.



Deepika Gabba



Upasana Gola



Dr. Nasib Singh



Dr. Puneet Negi



Dr. DC Suyal

Engineering Fructan Biosynthesis Against Abiotic Stress. Choudhir G, Vasistha NK (2021)
In: Wani SH, Gangola MP, Ramadoss BR (eds) Compatible Solutes Engineering for Crop Plants Facing Climate Change. Springer, Cham, pp 145-170.

DOI: 10.1007/978-3-030-80674-3_6;

https://link.springer.com/chapter/10.1007/978-3-030-80674-3_6

Publisher: Springer; **Available Online:** 31 October 2021

Department: Genetics-Plant Breeding and Biotechnology

Abstract: Many plant species contain a human health beneficial component called fructans. Fructans are fructose-based polymers sugar and synthesized from sucrose by an enzyme called as fructosyltransferases (FTs). Enhancement in the level of fructan molecules in engineering plants is one of the most critical areas of research. Several studies have been conducted to correlate the fructans content with various abiotic stresses like heat drought, chilling, etc. It has been confirmed that fructans may work as cryoprotectants and stabilize the plasma membranes during the dehydration after the incorporation of polysaccharide into the lipid headgroup region of the membrane. This mechanism maintains the water level and protects the plant tissues from leakage during abiotic stresses. The level of fructans in certain plant species cannot be easily improved using conventional methods of breeding due to the low genetic diversity of this trait in the germplasm of certain species. However, fructans levels in plants can be enhanced using the biotechnological tools for the biosynthesis of fructans against the abiotic stresses. The abiotic stress tolerance is a complex mechanism of plants, and engineering fructans biosynthesis may protect the plant from stresses incorporation with some other genetic factors. Due to the importance of high fructans content in plants for potential physiological benefits during the stresses, this trait should be taken into mainstream breeding programs at a large-scale for developing abiotic stress tolerance and nutritionally improved crop varieties.



Dr Neeraj Kumar
Vasistha

Books

Bioremediation of Environmental Pollutants. Emerging Trends and Strategies. Suyal DC, Soni R (2022) Springer, Cham. ISBN: 978-3-030-86169-8.

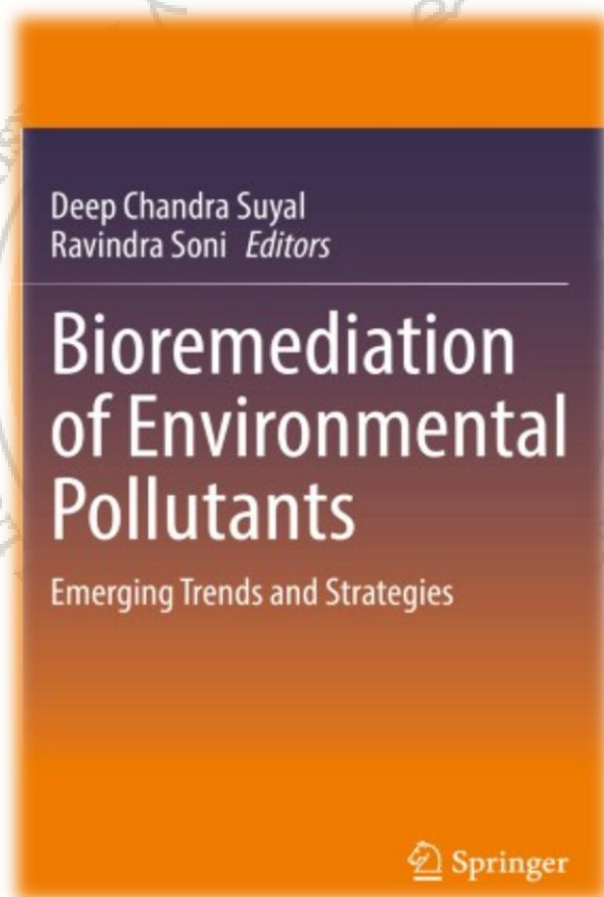
DOI: 10.1007/978-3-030-86169-8

<https://link.springer.com/book/10.1007/978-3-030-86169-8?noAccess=true>

Publisher: Springer; **Available Online:** 12 December 2021

Department: Microbiology

Introduction: This book collates the latest trends and technological advancements in bioremediation, especially for its monitoring and assessment. Divided into 18 chapters, the book summarizes basic concepts of waste management and bioremediation, describes advancements of the existing technologies, and highlights the role of modern instrumentation and analytical methods, for environmental clean-up and sustainability. The chapters cover topics such as the role of microbial fuel cells in waste management, microbial biosensors for real-time monitoring of bioremediation processes, genetically modified microorganisms for bioremediation, application of immobilized enzyme reactors, spectroscopic techniques, and in-silico approaches in bioremediation monitoring and assessment. The book will be advantageous not only to researchers and scholars interested in bioremediation and sustainability but also to professionals and policymakers.



Dr Deep Chandra Suyal

Research and Extension Activities



On-campus Training Programme



Exposure visit to UHF, Nauni



Dr. Neelam Thakur (Coordinator)



Valedictory Ceremony

5-days training program was organised at the premises of Eternal University under the NABARD sponsored project entitled "Integrated Farming System with Allied Sectors for Socio-economic Upliftment of Rural Farmer Families of Himachal Pradesh". In this program demonstration was given to the farmers on Integrated Farming Model (IFS) at University farm on October 4-8, 2021



Department of Physics visited to the "Concentrated Solar Thermal (CST) Based Cooking System" installed at Eternal University Baru Sahib Campus on 23-10-2021 and Dr. Puneet Negi explained to the students about the working of the system.



Educational trip to Renuka wetland and wildlife sanctuary on 27th December, 2021

SDG Related Activities



A lecture on Sustainable Development Goals: Awareness was delivered by Dr. N.P. Singh, Dean Research, Eternal University and Chairman SRIC on 10/12/2021 in the University Auditorium at 4:00 PM. This lecture was aimed at sensitizing the students towards the 17 Sustainable Development Goals (SDGs) and their implementation in the University as well as the campus including hostel. The Chairman of the SDG committee Dr. Pritesh Vyas urged the students to maintain cleanliness and hygiene in the hostel and conserve water. Honorable Vice-Chancellor, Dr. Davinder Singh appreciated to all those are associated with the SDG related activities. He motivated to all to work on all 17 SDGs to make Eternal University as a benchmark for the same among the top universities of the world.

ਗੁਡ ਨ्यूਜ਼ | **ਇਟਰਨਲ ਯੂਨਿਵਰਸਿਟੀ ਬੜ੍ਹ ਸਾਹਿਬ ਵਿਭਵਿਦਾਲਯ ਨੇਸ਼ਨਲ ਟੈਸਟਿੰਗ ਏਜੰਸੀ ਦੀ ਸੂਚੀ ਮੇਂ ਸ਼ਾਮਿਲ**

ਅਬ ਸਰਕਾਰੀ ਕ੍ਰਿਥਿ ਕਾਲੇਜੋਂ ਮੇਂ ਆਸਾਨੀ ਸੇ ਮਿਲੇਗਾ ਦਾਖਿਲਾ

ਨਿੱਜੀ ਸੰਗਟਦਾਤਾ-ਰਾਜਗੜ੍ਹ

ਇਟਰਨਲ ਯੂਨਿਵਰਸਿਟੀ ਬੜ੍ਹ ਸਾਹਿਬ ਸੇ ਐਸਐਸੀ ਏਜੰਸੀ ਟੈਸਟਿੰਗ ਪ੍ਰੋਗਰਾਮ ਮੇਂ ਆਸਾਨੀ ਸੇ ਦਾਖਿਲਾ ਪਾ ਸਕੇਗੇ। ਇਸਦੇ ਪਹਿਲੇ ਦਰਜੋਂ ਨਿੱਜੀ ਵਿਭਵਿਦਾਲਯੋਂ ਕੇ ਪਾਸ ਆਈਐਸੀਏਆਰ ਦੀ ਮਾਨਯਤਾ ਨਹੀਂ ਥੀ। ਆਪੀ ਭੀ ਬਹੁਤ ਸਾਰੇ ਨਿੱਜੀ ਕਾਲੇਜ਼ ਆਈਐਸੀਏਆਰ ਦੀ ਮਾਨਯਤਾ ਨਹੀਂ ਹੈ। ਇਸਦੀ ਵਜਹ ਸੇ ਸਰਕਾਰੀ ਕ੍ਰਿਥਿ ਕਾਲੇਜ਼ ਮੇਂ ਆਸਾਨੀ ਸੇ ਦਾਖਿਲਾ ਹੋ ਸਕੇਗੇ। ਏਸੇ ਸਰਕਾਰੀ ਵਿਭਵਿਦਾਲਯੋਂ ਦੀ ਦਲੀਲ ਹੋਤੀ ਥੀ, ਕਿੰ ਬਿਨਾ ਆਈਐਸੀਏਆਰ ਤਨਕੇ ਸਰਕਾਰੀ ਕਾਲੇਜ਼ੋਂ ਵਿਭਵਿਦਾਲਯੋਂ ਮੇਂ ਦਾਖਿਲਾ ਨਹੀਂ ਮਿਲੇਗਾ, ਲੇਕਿਨ ਬੜ੍ਹ ਸਾਹਿਬ ਕੇ ਇਟਰਨਲ ਯੂਨਿਵਰਸਿਟੀ ਮੇਂ ਅੱਥ ਯਹ ਸਮਸਯਾ ਦੂਰ ਹੋ ਗਈ ਹੈ। ਅੱਥ ਯਹ ਵਿਭਵਿਦਾਲਯ ਨੇਸ਼ਨਲ ਟੈਸਟਿੰਗ ਏਜੰਸੀ ਦੀ ਸੂਚੀ ਮੇਂ ਸ਼ਾਮਿਲ ਹੋ ਗਯਾ ਹੈ, ਜਿਸਦੀ ਵਜਹ ਸੇ ਯਹ ਆਧਿਯਨ ਕਰ ਰਹੇ ਛਾਤ੍ਰੋਂ ਕੇ ਆਧਿਯਨ ਕਾ ਰਾਸ਼ਟਾ ਸਾਫ਼ ਹੋ ਗਯਾ ਹੈ।

ਕੋਵਿਡ-19 ਮਹਾਮਾਰੀ ਦੀ ਸਿਥਿਤੀ ਊਰ ਆਰਿਦਕ ਪਰ ਇਸਦੇ ਪ੍ਰਭਾਵ ਛੋ ਧਿਯਨ ਮੇਂ ਰਖਤੇ ਹੁਏ ਵਿਭਵਿਦਾਲਯੋਂ, ਰਾਸ਼ਟ੍ਰੀਯ ਕ੍ਰਿਥਿ ਸਿੱਖਿਯਾ ਪ੍ਰਯਾਯਨ ਬੋਰਡ (ਆਈਐਸੀਏਆਰ) ਨੇ ਨਿਰਧਿਯ ਲਿਖਿਯਾ ਕਿ ਤਨ ਗੈਰ ਮਾਨਯਤਾ ਪ੍ਰਾਸ ਕਾਲੇਜ਼ੋਂ ਕਾਰਯਕ੍ਰਮੋਂ ਕੇ ਛਾਤ੍ਰ ਜਹਾਂ ਮਾਨਯਤਾ ਕੇ ਲਿਏ ਸਵ ਆਧਿਯਨ ਰਿਪੋਰਟ (ਏਸਏਸਏਆਰ) ਕੋ 17 ਅਗਸ਼ਟ, 2021 ਸੇ ਪਹਿਲੇ ਪ੍ਰਸ਼ੁਰਤ ਕ੍ਰਿਯਾ ਜਾ ਚੁਕਾ ਹੈ ਕੋ ਪੁਰਿਪਦ ਏਆਈਐਸੀਏ ਏਜੰਸੀ ਪ੍ਰੋਗਰਾਮ ਮੇਂ ਸ਼ਾਮਿਲ ਹੋ ਸਕੇਗੀ ਹੈ ਜਿਸਦਕ ਆਯੋਜਨ ਭੌਸ਼ਿਯਿਕ ਸਤ੍ਰ 2021-22 ਕੇ ਲਿਏ ਨੇਸ਼ਨਲ ਟੈਸਟਿੰਗ ਏਜੰਸੀ (ਏਨਟੀਏ) ਦੁਆਰਾ ਕ੍ਰਿਯਾ ਜਾਤਾ ਹੈ। ਇਸ ਸੂਚੀ ਮੇਂ



ਇਟਰਨਲ ਯੂਨਿਵਰਸਿਟੀ ਬੜ੍ਹ ਸਾਹਿਬ ਕੋ ਭੀ ਸ਼ਾਮਿਲ ਕ੍ਰਿਯਾ ਗਯਾ ਹੈ ਜੋ ਕਿ ਏਜੰਸੀ ਟੈਸਟਿੰਗ ਪ੍ਰੋਗਰਾਮ ਕੇ ਖੇਤ੍ਰ ਮੇਂ ਡਿਮਾਚਲ ਪ੍ਰੋਗਰਾਮ ਕੋ ਏਕ ਅਧਿਯਨੀ ਸੰਸਥਾਨ ਹੈ।

ਯਹ ਯੂਨਿਵਰਸਿਟੀ ਤੱਥ ਗੁਯਕਤਾ ਏਯੁਕੇਸ਼ਨ ਕੇ ਲਿਏ ਪ੍ਰਸਿਫ਼ਟ ਹੈ। ਇਸਮੇਂ ਤੁਰੰਤਕਾਰ ਏਵ ਹੋਨਹਾਰ ਫੈਕਲਟੀ ਕੇ ਸਾਥ-ਸਾਥ ਰਿਸਰਚ ਕੇ ਲਿਏ ਅਯਾਧੁਨਿਕ ਲੈਬੋਰੇਟੋਰੀਯ ਭੀ ਉਪਲਬਥ ਹੈ। ਇਸ ਮੌਕੇ ਪਰ ਡਾ. ਦਿਵੰਦ੍ਰ ਸਿੰਘ ਕੁਲਪਤੀ ਇਟਰਨਲ ਯੂਨਿਵਰਸਿਟੀ ਬੜ੍ਹ ਸਾਹਿਬ ਊਰ ਸਹਾਯਕ ਬੀਐਸ ਡਾ. ਅਮਰੀਕ ਸਿੰਘ ਆਹਲੂਵਾਲੀਯਾ, ਪੂਰਵ ਇਟਰਨਲ ਯੂਨਿਵਰਸਿਟੀ ਪੂਰਵ ਬੀਐਸ ਡਾ. ਡਰਕਰਯ ਸਿੰਘ ਖ਼ਾਲੀਵਾਲ ਨੇ ਯੁਯੋਗੀ ਯਾਹਿਰ ਦੀ ਊਰ ਯਹਾਂ ਅਧਿਯਨਰਲ ਵਿਛਾਪਿਯੋਂ ਕੇ ਤੱਥਕਲ ਆਧਿਯਨ ਕੋ ਕਾਮਨਾ ਕੀ।



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ਇਟਰਨਲ 'ਵਰਸਿਟੀ ਬੜ੍ਹ ਸਾਹਿਬ ਦੇ ਭੌਤਿਕ ਵਿਗਿਆਨ ਵਿਭਾਗ ਵਲੋਂ 'ਵਿਸੇਸ ਭਾਸਣ ਲੜੀ' ਦੀ ਸ਼ੁਰੂਆਤ

ਸੰਗਰੂਰ
(ਸਟਾਫ਼ ਰਿਪੋਰਟਰ)

ਇਟਰਨਲ 'ਵਰਸਿਟੀ ਬੜ੍ਹ ਸਾਹਿਬ ਦੇ ਭੌਤਿਕ ਵਿਗਿਆਨ ਵਿਭਾਗ ਨੇ ਵਰਚੁਅਲ ਮੱਠ ਰਾਹੀਂ "ਵਿਸੇਸ ਲੈਕਚਰ ਲੜੀ" ਦੀ ਸ਼ੁਰੂਆਤ ਕੀਤੀ ਹੈ। ਭੌਤਿਕ ਵਿਗਿਆਨ ਵਿਭਾਗ ਦੇ ਮੁਖੀ ਡਾ. ਪੁਨੀਤ ਨੰਗੀ ਨੇ ਦੱਸਿਆ ਕਿ ਇਸ 'ਭਾਸਣ ਲੜੀ ਸ਼ੁਰੂ' ਕਰਨ ਪਿੱਛੋਂ ਮੁੱਖ ਉਦੇਸ਼ ਨੌਜਵਾਨ ਪੀੜ੍ਹੀ ਦੇ ਮਨ ਨੂੰ ਬਦਲ ਕੇ ਬਿਹਤਰ ਭਵਿੱਖ ਦੇ ਵਿਕਾਸ ਲਈ ਉਨਤ ਖੋਜ ਅਤੇ ਤਕਨੀਕੀ ਖੋਜਾਂ ਵਿੱਚ ਕੈਰੀਅਰ ਚੁਣਨ ਲਈ ਪ੍ਰੇਰਿਤ ਕਰਨਾ ਹੈ। ਸਿੰਗਾਪੁਰ

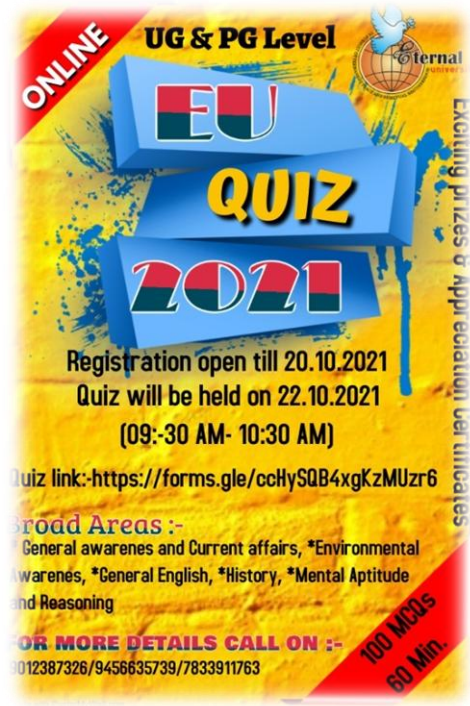
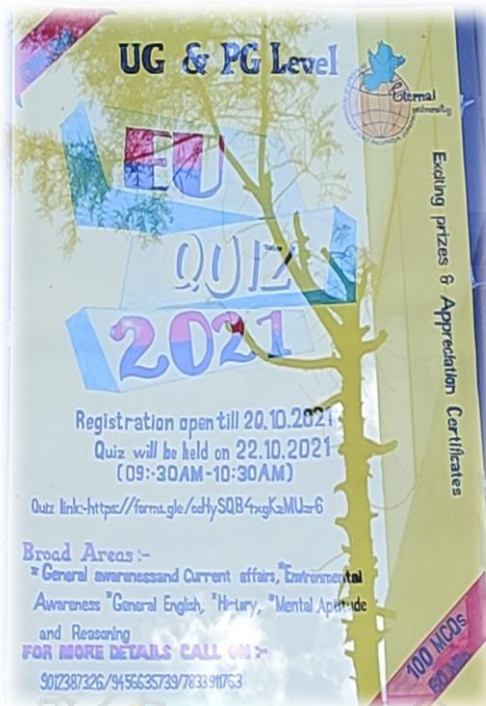
ਲਾਲ, ਵਿਭਾਗੀ ਵਿਦਿਆਰਥੀ ਅਤੇ ਇਟਰਨਲ 'ਵਰਸਿਟੀ ਅਤੇ ਹੋਰ ਸੰਸਥਾਵਾਂ ਦੇ ਵਿਦਿਆਰਥੀ ਮੌਜੂਦ ਸਨ। ਡਾ. ਮੋਦਵਾਲ ਨੇ ਭੌਤਿਕ ਵਿਗਿਆਨ ਦੀ ਨਵੀਂ ਉੱਭਰ ਰਹੀ ਸਾਥ 'ਸਪਿੱਟਿੰਗਸ' ਦੇ ਪਿੱਛੋਂ ਬੁਨਿਆਦੀ ਧਾਰਨਾਵਾਂ ਸੌਰ ਦੀ ਕਾਰਜਕਸ਼ਮਤਾ ਨੂੰ ਹੋਰ ਬਿਹਤਰ ਬਣਾਉਣ ਲਈ ਵੱਖ-ਵੱਖ ਸਕੀਮਾਂ 'ਤੇ ਸਰਗਰਮੀ ਨਾਲ ਕੰਮ ਕਰ ਰਹੀ ਹੈ। ਪੁੱਗਰਾਮ ਦੀ ਸਫਲਤਾ ਪੂਰਵਕ ਸਮਾਪਤੀ ਤੋਂ ਬਾਅਦ ਡਾ. ਨੰਗੀ ਨੇ 'ਵਰਸਿਟੀ ਦੇ ਕੁਲਪਤੀ ਸ਼੍ਰੀਮਤੀ ਪੰਥ ਰਤਨ

ਬਾਰੇ ਦੱਸਿਆ ਕਿ ਕਿਵੇਂ ਰੋਜ਼ਾਨਾ ਜੀਵਨ ਵਿੱਚ ਇਲੈਕਟ੍ਰੋਨਿਕਸ ਸਪਿਨ ਆਧਾਰਤ ਇਲੈਕਟ੍ਰੋਨਿਕਸ ਦੀ ਵਰਤੋਂ ਕਰ ਸਕਦੇ ਹਾਂ। ਡਾ. ਨੰਗੀ ਨੇ ਕਿਹਾ ਕਿ ਸੂਰਜੀ ਊਰਜਾ ਦੀ ਕਟਾਈ ਦੇ ਮਹੱਤਵਪੂਰਨ ਪਹਿਲੂ ਨੂੰ ਲੈਣਾ ਨਹੀਂ ਭੁੱਲੋ, ਜੇਕਰ ਇਸ ਨੂੰ ਸਪਿੱਟਿੰਗਸ ਨਾਲ ਜੋੜਿਆ ਜਾ ਸਕਦਾ ਹੈ। ਉਨ੍ਹਾਂ ਦੱਸਿਆ ਕਿ ਭੌਤਿਕ ਵਿਗਿਆਨ ਵਿਭਾਗ ਇਟਰਨਲ 'ਵਰਸਿਟੀ ਬੜ੍ਹ ਸਾਹਿਬ

ਬਾਬਾ ਇਕਬਾਲ ਸਿੰਘ, ਉਪ-ਕੁਲਪਤੀ ਡਾ. ਦਵਿੰਦਰ ਸਿੰਘ ਦਾ ਧੰਨਵਾਦ ਕਰਦਿਆਂ ਭਾਸਣ ਲੜੀ ਦੀ ਸਮਾਪਤੀ ਕੀਤੀ। ਇਸ ਮੌਕੇ ਇਟਰਨਲ 'ਵਰਸਿਟੀ ਦੇ ਪ੍ਰੋ-ਵਾਈਸ ਚਾਂਸਲਰ ਡਾ. ਏ.ਐਸ ਆਹਲੂਵਾਲੀਆ, ਡੀਨ ਪੀ.ਜੀ. ਐਸ., ਡਾ. ਬੀ.ਐਸ. ਸੋਹਲ, ਡਾ. ਪਰਦੀਪ ਸਿੰਘ ਚੀਮਾ ਅਤੇ ਰਜਿਸਟਰਾਰ ਡਾ. ਐਸ.ਕੇ. ਸਿੰਘ ਆਦਿ ਮੌਜੂਦ ਸਨ।



Online EU Quiz-2021 was organized on October 22, 2021 through online mode in two categories (i.e. undergraduate and post graduate) 426 students registered for the event and top ten winners in each categories will be awarded in a special occasion.



Winners EU Quiz-2021 Undergraduate Category



1st

Sakshi Pundir
(BS18BSAG056)



2nd

Aarushi Chaudhary
(BS18BSAG001)



3rd

Aayushi Chaudhary
(BS18BSAG001)

Postgraduate Category



1st

**Deepika Gabba
(BS20MSMB002)**



2nd

**Moumita Mandal
(BS20MPH009)**



3rd

**Upasana Gola
(BS20MSMB004)**



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(World Peace Through Value Based Education)*