

Summary Report: National workshop on “Recent Advancements in Atmospheric Science with Special Reference to Himalaya”

at Department of Physics HNB Garhwal University Srinagar

❖ **Introduction:**

National workshop on “Recent Advancements in Atmospheric Science with Special Reference to Himalaya” was held in Srinagar(Garhwal), Uttarakhand, India on 25th September 2019 hosted by the Department of Physics, Hemvati Nandan Bahuguna Garhwal University (A Central University), Uttarakhand in Collaboration with the newly formed society,” National society of Aerosol, Air Quality and Climate Change Research(NSAACCR)”, Srinagar(Garhwal) and Uttarakhand Science Education and Research Centre(USERC), Dehradun, Internal Quality Assurance Cell (IQAC), HNB Garhwal University Srinagar, HNBGU’s Innovation Cell, HNB Garhwal University Srinagar, International Academy of Science and Research (IASR), Kolkata .

It comprised of Invited talks of the esteemed scientists, physicists, professors and dynamic personalities from different science backgrounds, affiliated to renowned institutions across India and abroad. Oral and poster presentations (8 Invited Talks and 27 Research Papers of oral and poster presentations) of professors, research scholars across India were also a part of the workshop.

❖ **Objectives of The conference:**

- To discuss the characteristics (Physical, Chemical and Optical Properties) of atmospheric aerosols.
- To discuss the sources and reasons of polluted atmospheric species and its role in climate change.
- To find out the possibility for giving a message to the competent authority to mitigate the polluted species and purpose and setup a network program.
- To study the atmospheric aerosols over the Himalayan region with the help of funding agencies and that of experts, who will be gathered in High altitude site of the Himalayan environment through HNBGU, Srinagar(Garhwal).

The honorable guests were welcomed with traditional Uttarakhandi instruments being played to celebrate their arrival. Exhibition of instruments like pocket weather tracker, sound level meter, lightning detection system etc. was done by the company, pollution equipment and control (New Delhi), which sponsored the workshop also.

The honorable Vice Chancellor of the University, Prof. Annpurna Nautiyal arrived at around 11am.

Inauguration: The honorable V.C. (H.N.B. Garhwal University), Prof. Annpurna Nautiyal, the chief guest, Dr. Devendraa Siingh, Scientist, Indian Institute of Tropical

Meteorology Pune, Dean School of Science Prof R P Gairola, the convener of the conference Prof. S C Bhatt, Dept. of Physics, H.N.B.G.U., the Head of the Department of Physics, Prof. T. C. Upadhyay, Birla campus, H.N.B.G.U., the Organizing Secretary, Dr. Alok Sagar Gautam were welcomed and honored on the stage with bouquet, Shawl and memento as a part of the inauguration ceremony.

Prof Atul Dhyani, President, HNBGU's Innovation Cell were also present in the workshop.

Welcome and opening remarks:

Prof. Bhatt, Convener of the conference, delivered a welcome speech, thanking all the honorable guests and delegates and stating the need to save, to preserve the environment and to mitigate the factors affecting our environment and health adversely.

Dr. Alok Sagar Gautam, organizing secretary of the conference gave a hearty welcome speech for the respected guests and all the persons involved in the conference. He gave an overview of the conference and stated the objectives of the conference. He also took the opportunity to launch the newly formed society, "Indian society of Aerosol, Air Quality and Climate Change Research (ISAACCR)", which aims to promote Study of Aerosols and their Impact on Atmosphere.

Prof T.C. Upadhyay also expressed their gratitude and thanks to all the esteemed guests and participants of the conference. They stressed the need to explore the solutions to keep environment safe and methods of sustainable development.

The Chief Guest Dr.Devendraa Siingh was invited for speech. He stated that air quality and climate change are two faces of a coin and explained how greenhouse gases warm the earth by giving an example of heat trapping in a car standing in the sun, comparing earth's atmosphere to the car and window to ozone layer. He highlighted that whether global warming is a natural phenomenon or manmade is still not properly known and its consequences as stated by many are still a matter of research. He discussed the "Parali" system used by farmers across India. He focused that our measurements should be accurate.

Vice chancellor of the University, Prof. Annpurna Nautiyal congratulated the Physics Department for the conference. She found value in the conference as esteemed and knowledgeable people from different science and math background were gathered to exchange views and learn from each other's research and experience regarding such an important topic of Aerosols, Air Quality and Climate Change and highlighted that one of the main point of the conference was to save our human life. She questioned whether climate change is an established phenomenon and stressed the important of peace on earth. She congratulated Dr. Alok Sagar Gautam for establishing Cloud monitoring equipment successfully while mentioning that equipment should be used judiciously and there be proper awareness of such instruments amongst students and people.

Vice Chancellow was later interviewed by media persons.

**Recent Advancements in Atmospheric Science with Special Reference to
Himalaya**

**Organized by Department of Physics
HNB Garhwal University (A Central University) Srinagar Uttarakhand**

in collaboration with

Indian Society of Aerosols, Air Quality and Climate Change Research (ISAACCR)"

Physics Department, HNBGU Srinagar

Uttarakhand Science Education and Research Centre (USERC) Dehradun

&

Internal Quality Assurance Cell (IQAC), HNB Garhwal University Srinagar

&

HNBGU's Innovation Cell, HNB Garhwal University Srinagar

&

International Academy of Science and Research (IASR), Kolkata

and supported by

Hemvati Nandan Garhwal (Central) University, Srinagar, Garhwal, Uttarakhand

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Hemvati Nandan Bahuguna Garhwal University Srinagar (Garhwal)

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School of Sciences
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Convenor

Prof S C Bhatt
Department of Physics
Hemvati Nandan Bahuguna Garhwal University Srinagar (Garhwal)

Co-ordinator

Prof T C Upadhyay
Department of Physics
Hemvati Nandan Bahuguna Garhwal University Srinagar (Garhwal)

Organising Secretary

Dr. Alok Sagar Gautam
Department of Physics
Hemvati Nandan Bahuguna Garhwal University Srinagar (Garhwal)

| Invited talks | | |
|----------------------|-----------------------|---|
| Sr. No. | Speaker | Affiliation |
| 1 | Dr. A. K. Srivastava | Indian Institute of Tropical Meteorology, New Delhi |
| 2 | Dr Devendraa Siingh | Indian Institute of Tropical Meteorology Pune |
| 3 | Dr Jeni Victor | Indian Institute of Tropical Meteorology Pune |
| 4 | Dr Sagarika Chandra | Indian Institute of Tropical Meteorology Pune |
| 5 | Dr Sarvan Kumar | Indian Institute of Tropical Meteorology Pune |
| 6 | Dr. Manoj Kumar Gupta | Mechanical Engineering Department, H.N.B Garhwal (A Central) University, Srinagar (Garhwal) |
| 7 | Dr Alok Sagar Gautam | Dept. of Physics, H.N.B. Garhwal (a central) University, Srinagar (Garhwal) |
| 8 | Dr Asheesh Raturi | Dolphin (PG) Institute of Biomedical and Natural Sciences, Mandi Wala, Dehradun – 248007 |

| ABSTRACTS | | |
|---------------------------------------|---|---|
| Invited and Oral Presentations | | |
| Sr. No. | Manuscript title | Author |
| 01. | The Impact of Aerosol in Weather Variation, Environment and Human Fitness | Peeush Singhal, Ritu Vishnoi Singhal, Prince Prashant Sharma1, Vijay Jyoti Kumar |
| 02. | Study on Temporal and Spatial Variation of Sulfur Dioxide (SO ₂) over Alaknanda Valley (Garhwal Himalayan Region) of Uttarakhand, India is Driven by Satellite Data | Sanjeev Kumar, Alok Sagar Gautam, Abhishek Joshi, Karan Singh |
| 03. | Phytochemistry and Biological Application of <i>Stephania Glabra</i> : A Review | Rahul Kumar Vishwakarma, D. S. Negi |
| 04. | Pollen Morphology of Some Anemophilous Plants in Srinagar Garhwal, Uttarakhand | Shikha Arya, Rattan Sharma, Ajendra Singh Bagri, Eja Gloch, Prabhawati Tiwari, Alok Sagar |

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| | | Gautam |
| 05. | Instrumental Techniques for Structural Characterization of Resistant Starch | Vipin Kumar, Mayank Kumar Malik |
| 06. | Mushrooms: A Review on Medicinal, Therapeutic and Nutritional Properties | Reena Gangwar and Vineet Kumar Maurya |
| 07. | Ethno-Medicinal Importance of Family Anacardiaceae: A Review | Dinesh Kumar |
| 08. | A Comparative Study of Temperature and Relative Humidity with Satellite and Ground Base Instruments in Dehradun City | Amar Deep, Garima Yadav, K D Purohit and S.C Bhatt |
| 9. | Char Dham Highway Project: A Threat to Himalayan Ecology | Vandita Srivastava |
| 10. | The Study of Global Solar Radiation, Temperature and Relative Humidity for Some Selected Sites in Uttarakhand | Mahima, Indira Karakoti and P. P. Pathak |
| 11. | A REVIEW ON ROLE OF RADON AND THORON PROGENIES WITH CHANGING AEROSOL CONCENTRATION IN AMBIENT AIR | TAUFIQ AHAMAD, O P NAUTIYAL, PRAKHAR SINGH, AA BOURAI, A S RANA, ALOK SAGAR GAUTAM AND TUSHAR KANDARI |
| 12. | Antibacterial Activity of Grewia Optiva Drummond Ex Burret Against Selected Bacteria | Meena, Vineet Kumar Maurya and Munesh Kumar |
| 13. | Calculation of Diffusion Coefficient and Diffusion Length for Radon in Air using LR-115 Solid State Nuclear Track Detectors | Mukesh Prasad, Pooja, Richa Sharma and R. C. Ramola |
| 14. | Lightning and Climate Change in Srinagar Garhwal | Ankit Nautiyal, Alok Sagar Gautam and Penki Ramesh Kumar |
| 15. | Microfluidics and Its Role in Monitoring Environmental Health | Prince Prashant Sharma, Vijay Jyoti Kumar and Peeush Singhal |
| 16. | Lichens as A Climatic Indicator in The Himalaya: A Case Study of Lichen Dyes | Arti Falswal and B.S. Bhandari |
| 17. | Short Term Study on Temporal of Sulfur Dioxide (SO ₂) over Alaknanda Valley (Garhwal Himalayan Region) of Uttarakhand, India | Alok Sagar Gautam, Sanjeev Kumar, Dipshikha Gusain and Karan Singh |
| 18. | Nondestructive Assessment of Indian Forest: A Physicist View | Aasheesh Raturi |
| 19. | Study of Phase-Transition in Hydrogen-Bonded TGSe ferroelectric crystal | Arvind Kumar Rawat and T.C. Upadhyay |
| 20. | Study of ferroelectric dielectric properties of lead hydrogen arsenate crystal | Aanchal Rawat and Trilok Chandra Upadhyay |

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| 21. | Safety of Users and The Environment from The Pharmaceutical Effluents, Pollutants and Wastes | Peesh Singh, Ritu Vishnoi Singh, Vijay Jyoti Kumar |
| 22. | Variable Growth Patterns of Epilithic Cyanobacteria on Different Rocks | Rashmi Kala and Dr. V. D. Pandey |
| 23. | Investigation of Ferroelectric transition and Dielectric Properties of RDP Crystal | Pawan Singh and Trilok Chandra Upadhyay |
| 24. | Lichens: Natural and Most Sensitive Biomonitors of Atmospheric Changes | Mamta Arya, Sachin Singh and Shailesh Kumar Vishwakarma |
| 26. | Study of CCN concentration at Himalayan Cloud Observatory (HCO), Badshahuthaul India : A Review | Karan Singh, Alok Sagar Gautam, Sanjeev Kumar, Abhishek Joshi, Karan Singh |
| 27. | Study of dielectric properties of classical Rochelle salt (RS) crystals. | Muzaffar Iqbal Khan and Trilok Chandra Upadhyay |





Recent Advancements in Atmospheric Science with Special Reference to Himalaya,
25 September 2019



शोध व शैक्षणिक गतिविधि को बढ़ावा दें: प्रो. नौटियाल

● शोधार्थियों ने पोस्टर के माध्यम से प्रदर्शित किया शोध कार्य

शाह टाइम्स संवाददाता श्रीनगर। हेमवती नंदन बहुगुणा गढ़वाल केंद्रीय विवि के भौतिक विभाग के ओर से वायुमंडलीय विज्ञान के क्षेत्र में हाल ही में उन्नति के विषय एक दिवसीय राष्ट्रीय कार्यशाला आयोजित की गई। इस मौके पर पूने से पहुंचे इंडियन इंस्टीट्यूट ऑफ ट्रॉपिकल मेटेरोलॉजी डा. देवेंद्र सिंह ने बतौर मुख्य अतिथि व गढ़वाल विवि की कुलपति प्रो. अन्नपूर्णा नौटियाल ने संयुक्त रूप से दीप प्रज्वलित कर कार्यशाला का शुभारंभ किया।

कार्यक्रम में एमएससी के छात्र-छात्राओं द्वारा सांस्कृतिक कार्यक्रमों की मनमोहक प्रस्तुती भी दी। चौरास परिसर स्थित मिनी ऑडिटोरियम में आयोजित



कार्यशाला में डा. देवेंद्र सिंह ने हिमालय क्षेत्र में बादल फटने जैसी घटनाओं के प्रभाव को कम करने से सम्बंधित तथ्यों पर विचार साझा किए। साथ ही उन्होंने आकाशीय बिजली गिरने के कारण, प्रभाव, प्रक्रिया, बचाव एवं पूर्वानुमान से सम्बंधित जानकारी छात्र-छात्राओं के सम्मुख रखी। इस दौरान प्रो. आरपी गैरोला, को उच्च शिक्षा में योगदान देने पर लाइफ टाइम अचीवमेंट

अवार्ड से सम्मानित किया गया। इस मौके पर विज्ञान संकाय अध्यक्ष प्रो. आरपी गौरोला, कार्यशाला संयोजक प्रो. एससी भट्ट, समन्वयक डा. आलोक सागर गौतम, विभागाध्यक्ष प्रो. टीसी उपाध्याय, प्रो. डीएस नेगी, प्रो. एमएसएस रावत, प्रो. आरएस नेगी, प्रो. ओके बेलवाल, डा. बीपी नैथानी, डा. आशुतोष गुप्त, प्रो. जेके तिवाड़ी, डा. संजय पाण्डे, डा. कुलिन जोशी आदि मौजूद थे।

समाज की जरूरत के अनुसार हो शोध

जागरण संवाददाता, श्रीनगर गढ़वाल : सोलर एक्टिविटी लाइटनिंग और क्लाइमेट विषय को लेकर गढ़वाल केंद्रीय विवि श्रीनगर के भौतिक विज्ञान विभाग के तत्वावधान में एक दिवसीय राष्ट्रीय कार्यशाला का आयोजन किया गया। मुख्य वक्ता और इंडियन इंस्टीट्यूट ऑफ ट्रॉपिकल मेटेोलॉजी पुणे के वरिष्ठ वैज्ञानिक डॉ. देवेन्द्र सिंह और गढ़वाल केंद्रीय विवि की कुलपति प्रो. अन्नपूर्णा नौटियाल ने दीप प्रज्वलित कर कार्यशाला का शुभारंभ किया।

बुधवार को गढ़वाल केंद्रीय विवि के चौरास परिसर में आयोजित राष्ट्रीय कार्यशाला में वक्ताओं ने बदलते मौसम और जलवायु परिवर्तन के कारणों पर विस्तार से प्रकाश डाला। कुलपति प्रो. अन्नपूर्णा नौटियाल ने कहा कि समाज की जरूरतों के अनुसार शोध का विषय चयन कर किए जाने वाले शोध कार्यों से सीधे समाज भी लाभान्वित होता है। इसलिए हमें ऐसे शोध कार्यों को बढ़ावा देना चाहिए। कार्यशाला के मुख्य वक्ता और इंडियन इंस्टीट्यूट ऑफ ट्रॉपिकल मेटेोलॉजी पुणे के वरिष्ठ वैज्ञानिक डॉ. देवेन्द्र सिंह



गढ़वाल केंद्रीय विवि श्रीनगर के चौरास परिसर में फोक एंड परफॉर्मिंग आर्ट्स सेंटर के मिनी ऑडिटोरियम में कुलपति प्रो. अन्नपूर्णा के साथ दीप जलाकर राष्ट्रीय कार्यशाला का उद्घाटन करते मुख्य वक्ता इंडियन इंस्टीट्यूट ऑफ ट्रॉपिकल मेटेोलॉजी पुणे के वरिष्ठ वैज्ञानिक डॉ. देवेन्द्र सिंह • जागरण

ने आकाशीय बिजली गिरने के कारणों, उसके प्रभाव और पूर्वानुमान को लेकर वैज्ञानिक कारणों को स्पष्ट किया। उन्होंने कहा कि उत्तराखंड में अकालीय बिजली गिरने की फ्रीक्वेंसी ज्यादा बढ़ी है जिसका प्रमुख कारण वायु प्रदूषण भी है। कार्यशाला में गढ़वाल विवि भौतिक विज्ञान विभाग के प्रो. आरपी गैरोला को उच्च शिक्षा के क्षेत्र में उनके द्वारा दिए गए योगदान के लिए

लाइफ टाइम एचीवमेंट अवॉर्ड से भी सम्मानित किया गया। इस अवसर पर डॉ. देवेन्द्र सिंह, कार्यशाला के आयोजक वरिष्ठ भौतिक वैज्ञानिक डॉ. आलोक सागर गौतम, विज्ञान संकाय के अध्यक्ष प्रो. आरपी गैरोला, विवि भौतिक विज्ञान विभाग के अध्यक्ष प्रो. टीसी उपाध्याय, कार्यशाला संयोजक प्रो. एससी भट्ट सहित विवि के अन्य प्रोफेसर मौजूद रहे।

शोध को बढ़ावा देने की अपील

श्रीनगर। हेमवती नंदन बहुगुणा गढ़वाल विविके भौतिक विभाग की ओर से रिसेंट एडवांसमेंट इन एटमोशफेरिक साइंस विद स्पेशल रिफरेन्स टू हिमालय, आरएएस-2019 विषय पर राष्ट्रीय कार्यशाला आयोजित की गई। विवि की कुलपति प्रो. अन्नपूर्णा नौटियाल ने विवि में शोध एवम शैक्षणिक गतिविधि को बढ़ावा दिए जाने की अपील की।

उन्होंने छात्रों के लिए शहर में कमरा दूढ़ने के लिए वेबसाइट बनाने वाले छात्रों से भी मुलाकात की। इस मौके पर ऐरसोल, एयर क्वालिटी व क्लाइमेट चेंज रिसर्च सोसाइटी द्वारा भौतिक विभाग के प्रो. आरपी गैरोला को उच्च शिक्षा में योगदान के लिए लाइफ टाइम अचीवमेंट अवार्ड से सम्मानित किया गया।