



डॉक्टर ऑफ फिलोसफी

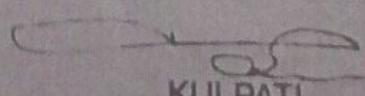
प्रमाणित किया जाता है कि मनोज डोगरा को
 इस विश्वविद्यालय से वर्ष 2009 में राजनीति शास्त्र
 विषय में डॉक्टर ऑफ फिलोसफी की उपाधि के लिये योग्य घोषित किया
 गया है, एतदर्थं उन्हे डॉक्टर ऑफ फिलोसफी की उपाधि प्रदान की जाती है।

DOCTOR OF PHILOSOPHY

This is to Certify that Manoj Dogra
 has been declared eligible for the award of **Doctor of Philosophy**
 in this University in 2009 in this Political Science
 subject is admitted to the Degree of **Doctor of Philosophy**.

His / Her Thesis is on " हिमाचल प्रदेश के व्यवस्थाएँ राजनीति विवरण
सेनानी स्वरूप राष्ट्रीय अन्वेषण में उनका योगदान: एक अध्ययन

JIWAJI UNIVERSITY,
 GWALIOR
 Dated : 12/5/2009


 KULPATI



CAREER POINT UNIVERSITY, HAMIRPUR, H.P. INDIA
'ACADEMIC SECTION'

No.CPUH/ACAD/Ph.D/2025/-6167-40

Dated: 28.05.2025

NOTIFICATION

The under mentioned student, having successfully completed all the requirements for the award of the degree of 'Doctor of Philosophy' of this University, is declared qualified to receive the said degree:

1. Name of the Student	- Jyotsna
2. Father's Name	- Shri Om Prakash Hooda
3. UID/ Enrolment No.	- H13959
4. Discipline	- Physics
5. Department/School	- Physics/School of Basic and Applied Sciences
6. Name of Supervisor	- Dr Rajender Kumar
7. Title of the thesis -	- "Structural, Optical and Temperature Dependent Dielectric Study of Zinc Oxide (ZnO) Incorporated Magnesium Oxide (MgO) Based Compounds"
8. Cumulative Grade Point Average	- NA

"It is certified that Ms Jyotsna has been awarded Ph.D. in accordance with University Grants Commission (Minimum Standards and Procedure for Award of M.Phil./Ph.D. Degrees) Regulations, 2016 and She fulfills all the five conditions* mentioned in the UGC Notification Published in the Gazette of India (Extraordinary): No 271;Part-III; Section-4; New Delhi dated 18th July, 2018"

BY ORDER OF THE VICE-CHANCELLOR

Dated: 28.05.2025

Endst No Even

Copy to:-

1. All Deans/Associate Deans/Controller of Examination, Career Point University Hamirpur H.P. 176041
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4. Secretary, HPPERC, Shimla -171009
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6. Dr Rajender Kumar, Associate Professor (Supervisor of the student) Department Physics, School of Basic And Applied Sciences, CPU Hamirpur H.P.
7. Dr Youd Vir Singh, Library and Documentation Division, Association of Indian Universities (AIU), AIU House, 16-Comrade Indrajit Gupta (Kotla) Marg New Delhi-110002
8. Shri Manoj Kumar K Scientist-E (CS) Information and Library Network Centre (INFLIBNET) Infocity, Gandhinagar-382007.Gujarat, India.
9. Student concerned C/O Head Department Physics/School of Basic and Applied Sciences, Career Point University Hamirpur H.P. 176041.

Registrar
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Hamirpur H.P.176041

Registrar
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Hamirpur (H.P) - 176041

The
Maharaja Sayajirao
University of Baroda

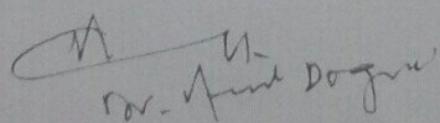
Whereas Shri Anilkumar Shiv Dharam Singh Dogra of the Faculty of Arts has pursued a course of study prescribed by the University and passed the requisite Examination

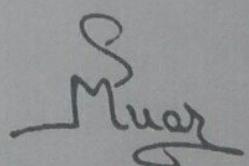
Now therefore this is to certify that he has this day been duly admitted by the Senate to the Degree of

Doctor of Philosophy
(Economics)

Given under my hand this Twenty ninth day of June one thousand nine hundred and ninety nine

self attested


Dr. Anil Kumar Dogra


S. M. Mehta

Chancellor

हिमाचल प्रदेश विश्वविद्यालय

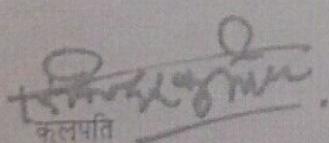


विद्या-वाचस्पति-2016

प्रमाणित किया जाता है कि "PREPARATION AND CHARACTERIZATION OF SOME 4-ETHYLPIPERAZINE-1-FUNGICIDAL STUDIES ON SOME MUSHROOM PATHOGENS" पर शोध प्रबन्ध स्वीकृत हो जाने के उपरान्त धर्वीन्द्र कुमार सुपुत्र/सुपुत्री श्री ध्यान चंद को इस विश्वविद्यालय की विद्या-वाचस्पति की उपाधि पदार्थ विज्ञान (रसायन विज्ञान) संकाय से प्रदान की गई।

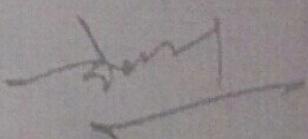
Himachal Pradesh University Doctor of Philosophy -2016

Certified that Dharvinder Kumar son/daughter of Shri Dhyan Chand after approval of his/her thesis on "PREPARATION AND CHARACTERIZATION OF SOME 4-ETHYLPIPERAZINE-1-FUNGICIDAL STUDIES ON SOME MUSHROOM PATHOGENS" has been admitted to the degree of Doctor of Philosophy in the faculty of Physical Sciences (Chemistry) in this University.



कृताधिपति
Vice-Chancellor

शिमला । 03rd August, 2016
Shimla J



कृताधिपति
Chancellor

हिमाचल प्रदेश विश्वविद्यालय



विद्या-वाचस्पति-2001

प्रमाणित किया जाता है कि "परेश मेहता के कथा साहित्य में पारी चित्रण"

पर शोध प्रबन्ध स्वीकृत हो जाने के उपरान्त विजय कुमार

सुपुत्र/सुपुत्री श्री हरनाम सिंह को इस विश्वविद्यालय की

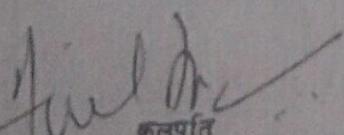
विद्या-वाचस्पति की उपाधि मार्षा संकाय में प्रदान की गई।

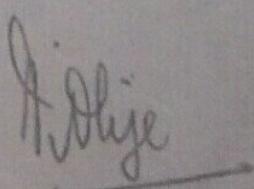
Himachal Pradesh University

Doctor of Philosophy-2001

Certified that Vijay Kumar, son/daughter of
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"परेश मेहता के कथा साहित्य में पारी चित्रण"

has been admitted to the degree of Doctor of Philosophy in the
Faculty of Languages in this University.


कृतपत्र
Vice-Chancellor


कृताधिकारी
Chancellor



WILDLIFE WEEK CELEBRATION
&
INTERNATIONAL COLLOQUIUM ON WILDLIFE CONSERVATION (ICWC-2024)
1-7 OCTOBER 2024

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This is to certify that Prof. / Dr. / Mr. / Ms. Dr. Dharminder Kumar, Assistant Professor

*Of
Chemistry*

*has successfully participated in seven days Wildlife Week & International Colloquium on Wildlife Conservation held
from 1st to 7th October 2024 Organized by Maharaja Ganga Singh University, Bikaner, Rajasthan, India.*

Dixit
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Patron, ICWC-2024
Vice Chancellor, MGSU, Bikaner

Chhangani
Prof. Anil Kumar Chhangani
Chairperson, ICWC-2024
Head, Dept. of Envir. Science, MGSU, Bikaner

Omka
Dr. Mamta Sharma
Org. Secretary, ICWC-2024
Assoc. Prof. R.R. College, Alwar



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It is certified that Dr. Dhavinder Kumar, Assistant Professor of Govt. College Barsar has successfully participated & completed AICTE Training And Learning (ATAL) Academy Faculty Development Program on Healthcare and Med Tech: Innovations, Challenges, and Future Directions at DELHI TECHNOLOGICAL UNIVERSITY from 09/12/2024 to 14/12/2024.

Nanita

Nanita Bharadvaja
Associate Professor Level (AICTE Institute), Coordinator
DELHI TECHNOLOGICAL UNIVERSITY

S

Dr. Sunil Luthra
Director & Bureau Head
Training and Learning Bureau, AICTE

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Mr. Sunil Pathak

Assistant Professor

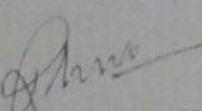
Govt. College, Barsar, Hamirpur, Himachal Pradesh

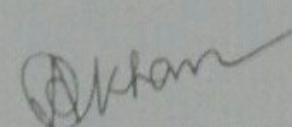
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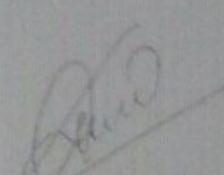
Himachal Pradesh University

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Mr. Sunil Pathak

Assistant Professor

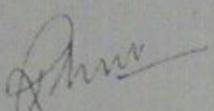
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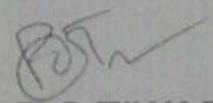
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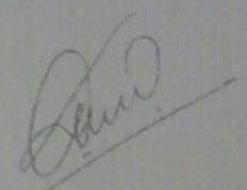
Himachal Pradesh University, Shimla

participated in the Short Term Course on **Research and Publication Ethics**

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(Prof. R.C.TIWARI)
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University Grants Commission

CERTIFICATE OF PARTICIPATION

NEP 2020 Orientation & Sensitization Programme

This is to certify that Mr./Mrs./Ms./Dr./Prof. Mast Ram, Assistant Professor from Government College Barsar, Himachal Pradesh University, Shimla has completed the NEP 2020 Orientation & Sensitization Programme under Malaviya Mission Teacher Training Programme (MM-TTP) of University Grants Commission (UGC) organized by UGC-Malaviya Mission Teacher Training Centre, Banaras Hindu University, Varanasi - 221005 (U.P.) from February 18 to 27, 2025 and obtained grade (A).

Director



INTERNATIONAL CONFERENCE

on

**Emerging Trends and Innovations
in Basic Sciences (ETIBS-2024)**

(22-23 NOVEMBER, 2024)

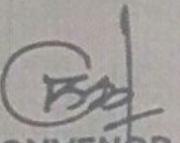


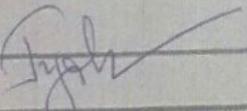
CERTIFICATE OF PARTICIPATION

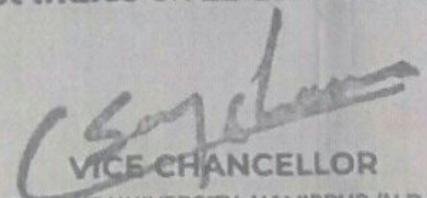
S. NO. CPUH/ETIBS-2024/207

This is certified that Prof/Dr/Mr/Ms Jyotsna of
Career Point University, Hamirpur, Himachal Pradesh.
has participated and presented a paper as Oral/Poster Presentation on the topic —
Crossover of Conduction Mechanism in Mgo based
Ceramic. in International Conference on "Emerging Trends and

Innovations in Basic Sciences (ETIBS-2024)" organized by School of Basic & Applied Sciences,
Career Point University, Hamirpur (H.P.) India in collaboration with The University of The
West Indies, St. Augustine, Trinidad and Tobago, West Indies on 22-23 November 2024.


CONVENOR
ETIBS-2024




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CAREER POINT UNIVERSITY, HAMIRPUR (H.P.), INDIA



International Conference
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March 27-28, 2025
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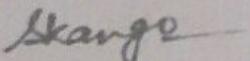
National Board for Higher Mathematics (NBHM), Mumbai

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Certificate

This is to certify that Jyotsna, Assistant/Associate Professor,
Govt. College Barsar (Hamirpur) has participated and presented a paper
on the topic **Modifications in Structural and Optical properties of thin films of Y2O3** during
the International Conference on "Advances in Mathematics and Applied Sciences"
organised by the Department of Mathematics, NSCBM Govt. College, Hamirpur (H.P) from March 27-28, 2025


Dr. Sanjay Kango
Convener


Dr. Pramod Singh Patial
Principal-cum-Patron



International Conference
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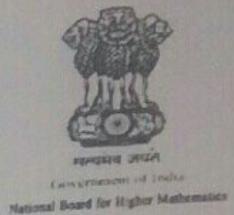
Department of Hindi, Govt. College, Barsar, Distt. Hamirpur (H.P.)

has participated and presented a paper on the topic

“हिन्दी छन्दशास्त्र में गणित का महत्व”

during the International Conference on “Advances in Mathematics and Applied Sciences” organised by the

Department of Mathematics, NSCBM Govt. College, Hamirpur (H.P.) from March 27-28, 2025.



Skango

Dr. Sanjay Kango
Convener

Patial

Dr. Pramod Singh Patial
Principal-cum-Patron

Ahmednagar Jilha Maratha Vidya Prasarak Samaj's

New Arts, Commerce and Science College, Parner



Dist. - Ahilyanagar - 414 302 (Maharashtra)

IQAC, Faculty of Science and Computer Science

National Conference on "Rhythms in Interdisciplinary Sciences (RIS - 2025)"

CERTIFICATE

This is certified that Prof./Dr./Ms./Mr. Dhanvinder Kumar

has participated and presented a paper (Oral/Online)/delivered invited talk on the topic entitled Industrialization in Himachal Pradesh : Environmental Challenges and the path to... in the National Conference on "Rhythms in Interdisciplinary Sciences (RIS - 2025)" organized by the IQAC, Faculty of Science and Computer Science of our college on Saturday, 29th March, 2025.

Dr. R. S. Diggikar
Convenor

Prof. R. B. Kharade
Coordinator

Dr. R. K. Aher
Director



International Conference
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Certificate

This is to certify that **Sanjeev Kumar, Assistant/Associate Professor, Department of Commerce, Govt. College, Barsar Distt. Hamirpur (H.P.)** has participated and presented a paper on the topic **Mathematical Foundations of Statistical Inference: Advances and Applications** during the International Conference on “**Advances in Mathematics and Applied Sciences**” organised by the Department of Mathematics, NSCBM Govt. College, Hamirpur (H.P.) from March 27-28, 2025.

Skango

Dr. Sanjay Kango
 Convener

Patel

Dr. Pramod Singh Patial
 Principal-cum-Patron



International Conference

on

Advances in Mathematics and Applied Sciences

(ICAMAS-2025)

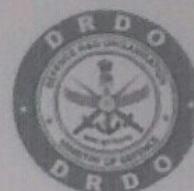
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Certificate

This is to certify that Shivam Kumar, Assistant/Associate Professor,
Department of Mathematics, Govt. College, Barsar, Distt. Hamirpur (H.P.)

has participated and presented a paper on the topic

“Use of Mathematics in Agriculture and Horticulture Sciences”

during the International Conference on “Advances in Mathematics and Applied Sciences” organised by the
Department of Mathematics, NSCBM Govt. College, Hamirpur (H.P.) from March 27-28, 2025.

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Spectroscopic analysis of defect-induced luminescent and dielectric properties of MgO-based composites on varying dopant concentration

Jyotsna^a, Rajender Kumar^{a,*}, Ravi Kumar^b, Ravinder Kumar^b

^a Department of Physics, Career Point University, Bhoray (Tikker-Kharwarian), Hamirpur, Himachal Pradesh 176041, India

^b Department of Materials Science and Engineering, National Institute of Technology, Hamirpur, Himachal Pradesh 177005, India

ARTICLE INFO

Keywords:

Ceramic composites
Solid-state reaction
F-centers
Multiple excitations
High-k dielectrics

ABSTRACT

In this novel study, we prepared MgO matrix composites reinforced with varying weight percent ZnO using a solid-state reaction (SSR) method at 500 °C. We aimed to explore the potential of these composites for high-frequency electronic devices. We conducted a comprehensive structural analysis of these MgO-based composites using various spectroscopic and microscopic techniques. This inclusive analysis revealed the morphology, particle size, elemental composition, valence states of elements, and defects in the composites. The Rietveld refinement of XRD data confirmed the presence of binary phase and the phase % of the constituents of composites. XPS spectra demonstrated the isovalent character of Zn/Mg elements and the presence of low-coordinated oxygen ions at the surface of the composites. The UV-visible-based spectroscopic techniques (Absorption and Photoluminescence) further supported the presence of low-coordinated surface O²⁻ ions and F-center defects that caused a significant reduction in the bandgap of the samples. Photoluminescence (PL) analysis suggested the passivation of F-center defects in composites. We also investigated the effect of ZnO concentration and multiple excitation energies on the site-specific localized F-center defects to understand the defect distribution in the composites relative to the host.

The dielectric properties of ZnO/MgO composites were assessed through impedance spectroscopy. We observed a significant enhancement in the dielectric constant (~ 28.69–32.60) of the composites compared to pure MgO (~ 12.2) at 1 kHz. This enhancement along with the smaller impedance of the composites relative to the host, as endorsed by the PL results, suggests a reduction in F-centers (electrical barriers). This exciting finding paves the way for the synthesis of ceramic composites with excellent dielectric and optical properties, indicating their potential applications in high-frequency electronic devices.

1. Introduction

Magnesium oxide (MgO) is a multifunctional ceramic oxide owing to its fascinating properties such as antibacterial, catalytic, bio-sensing, UV-detection, non-toxic nature, wide bandgap, high melting point, and many more [1–3]. It continues to be an attractive choice for applications in solid-state microelectronics and optoelectronics. For the past decades, intense research has been focused on exploring a suitable high-k dielectric metal oxide to fulfill the requirements for continuous scaling of electronic devices [4–8]. In this regard, MgO (k ~ 9.8) has been reported to improve the issues related to leakage current and dielectric thickness in electronic devices [9–11]. The significant properties of MgO, such as dielectric, magnetic, and luminescent, are directly or indirectly correlated to native defects in its lattice [12]. Various

theoretical studies reported structural intrinsic defects, such as cationic-vacancies (V_{Mg}), -interstitials (Mg⁺), anionic-vacancies (F-centers), and -interstitials (O²⁻) in pure MgO [13–15]. For applications in microelectronics, defect-free oxide ceramic is ideally required to display excellent dielectric properties. The paramagnetic defects are vital in deciding their magnetic properties for spintronics and magnetic recording devices [12]. The defect-induced photoluminescence in MgO makes it a potential substitute for customary metal activator-based phosphors for optoelectronic applications. However, its prevalent intrinsic defects and modest dielectric constant result in its substandard electronic properties, detrimental to its electronic device applications [14]. So, there is a need to focus on synthesizing oxide ceramics with reduced defects and higher dielectric constant for dielectric applications.

* Corresponding author.

E-mail address: rkthakurnitham@gmail.com (R. Kumar).

Jyotsna

4

Studies on Fungal Associates of *Acacia catechu* (L.f.) Willd. – A Medicinal Plant

Sunil Pathak¹ and Babita Suman²

¹Department of Botany, Govt. College, Barsar, H.P., India

²Department of Botany, NSCBM Govt. College, Hamirpur, H.P., India

(Received 30 January, 2024; Accepted 3 April, 2024)

ABSTRACT

Fungal associates of *Acacia catechu* growing in district Hamirpur of Himachal Pradesh were studied, identified and are being reported in the present research paper. The rhizosphere of *Acacia catechu* revealed the presence of twenty three species of fungi. Seven species of AMF (Arbuscular Mycorrhizal Fungi) belonging to three genera (*Acaulopspora*, *Gigaspora* and *Glomus*) were isolated from roots adhering soil. Leaves and bark of this plant revealed the presence of three endophytic fungal species belonging to three genera namely, *Aspergillus niger*, *Cladosporium cladosporioides* and *Fusarium solani*. Further research of endophytes can be beneficial for the production of secondary metabolites and for bioprospecting.

Key words: Medicinal plant, AMF, Rhizosphere, Endophytes, Bioprospecting

Introduction

The fungi occupy prime place in the biological world (Hawksworth *et al.*, 1995). They consist of large and heterogenous group of microorganisms permeating the surface layer of soil with their mycelium. Arbuscular mycorrhizal fungi (AMF) are ubiquitous, soil-borne, endophytic, obligate biotrophs that colonize the roots of most of the terrestrial plants in various soil types and environmental conditions to establish mutually beneficial relationships (Branco *et al.*, 2022; Shi *et al.*, 2023). Taxonomically, AMF belong to the phylum Glomeromycota (Giovannini *et al.*, 2020). The name AMF denotes the peculiar relationship between plant roots and mycorrhizal fungi and its key features, wherein "Arbuscule" stands for a special treelike fungal (hyphal) structure in the inner cortex of the root that is used for resource-exchange between "plant root" and "AMF," whereas "mycorrhiza" derived from

two words "myco," meaning fungus, and "rhiza," meaning "root" (Shi *et al.*, 2023).

In plant-AMF symbiosis, host plant supply carbon (C) substances such as sugars and lipids to AMF (Jiang *et al.*, 2017). AMF provide mineral nutrients, particularly phosphorus (P) and nitrogen (N) to the host plant (Wipf *et al.*, 2019). This nutrient exchange strongly impacts plant and microbial ecosystems by influencing plant fitness, core soil processes and the C cycle (Diagne *et al.*, 2020; Giovannini *et al.*, 2020). AMF assist the roots of the host plant with their extensive hyphal network in absorbing water and nutrients, thus minimize the requirement for chemical fertilizers and irrigation (Kakouridis *et al.*, 2022). AMF are found in various kinds of habitats including severely disturbed ecosystems containing soils polluted with excessive salt, xenobiotics and heavy metals (Boorboori and Zhang, 2022; Branco *et al.*, 2022; Ahammed *et al.*, 2023). AMF help in plant development and stress tolerance such as drought

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Fungal Associates of Medicinal Plant *Azadirachta indica* A. Juss

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ABSTRACT

Fungal associates of medicinal plant *Azadirachta indica* A. Juss growing in district Una, Himachal Pradesh were investigated identified and are reported in the present paper. Twenty-two species of fungi were recorded from rhizosphere of *Azadirachta indica*. Seven species of Arbuscular Mycorrhizal Fungi (AMF) belonging to three genera (*Acaulospora*, *Gigaspora* and *Glomus*) were isolated from root adhering soil of the plant. Leaves and bark of the plant revealed the presence of three endophytic fungal species belonging to three genera, i.e. *Fusarium*, *Gliocladium* and *Trichoderma*. Further study of endophytes can be useful for the production of secondary metabolites and bio prospecting.

Key words: Fungal associates, AMF, Rhizosphere, Endophytic fungi, Secondary metabolites

Introduction

The variety and galaxy of fungi occupy prime place in the biological world (Hawksworth *et al.*, 1995). Fungi form a large and heterogenous group of microorganisms permeating the surface layer of soil with their mycelium. Arbuscular mycorrhizal fungi (AMF) are ubiquitous, soil-borne, endophytic, obligate biotrophs that colonize the roots of most of the terrestrial plants in various soil types and environmental conditions to establish mutually beneficial relationships (Branco *et al.*, 2022; Shi *et al.*, 2023). Systematically, AMF belong to the phylum Glomeromycota (Giovannini *et al.*, 2020). In plant-AMF symbiosis, host plant supply carbon (C) substances such as sugars and lipids to AMF (Jiang *et al.*, 2017). AMF provide mineral nutrients, especially phosphorus (P) and nitrogen (N) to the host plant (Wipf *et al.*, 2019). This nutrient exchange has strong impact on plant and microbial ecosystems as

it influences plant fitness, core soil processes and the C cycle (Diagne *et al.*, 2020; Giovannini *et al.*, 2020). AMF aid the roots of the host plant with their extensive hyphal network in absorbing water and nutrients, thus decrease the need of chemical fertilizers and irrigation (Kakouridis *et al.*, 2022). AMF are found in various kinds of habitats including severely disturbed ecosystems containing soils polluted with excessive salt, xenobiotics and heavy metals (Boorboori and Zhang, 2022; Branco *et al.*, 2022; Ahammed *et al.* 2023). AMF aid in plant development and stress tolerance such as drought (Begum *et al.* 2019), salinity (Cui *et al.*, 2022; Li *et al.*, 2022), nutrient deficiency (Shi *et al.*, 2021) or heavy metal stress (Dhalaria *et al.*, 2020; Alam *et al.*, 2019). AMF have potential applications in crop production, forestry management, bioremediation and ecological restoration as biofertilizers and bioprotectors (Phour *et al.*, 2020; Boorboori and Zhang, 2022; Zhu *et al.*, 2022). The effective management and assess-

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expert

From:

Chairman
BOS, UG under NEP 2020
Physics Department

To

All Faculty Members

Subject: **Request to draft the syllabus in the subject of Physics for UG Classes under NEP 2020.**

Sir/Madam

It is for your information that a meeting of the subject committee duly constituted by the Hon'ble Vice-Chancellor to draft the syllabus of B.Sc MULTIDISCIPLINARY COURSE (PHYSICS) and MAJOR COURSE in Physics was held on 27th November, 2024. In this meeting it was decided that to frame the course content of the different courses, faculty members of various colleges of the state will be involved. The name of the faculty and title of the course to be drafted by him/her are mentioned below in the table. All the worthy faculty members are requested to submit the draft syllabus of the assigned course by 15th December, 2024 to the undersigned by e-mail.

Sr. No.	Subject	Name of Faculty Member
1.	Vibration, Waves and Optics DSCUG-PHT-231(a) (3Cr) (70) DSCUG-PHP-231(b) (1Cr) (30) DSC-3B	Dr. Anil Kumar, G.C. Solan
2.	Solid State Physics and Electronics DSCUG-PHT-241(a) (3Cr) (70) DSCUG-PHP-241 (b) (1Cr) 30	Dr. Shalini Sharma, G.C. Nalagarh
3.	Computational Physics DSE-PHYT-241 (a) (3cr) (70) DSE-PHYP-241 (b) (1cr) (30)	Dr. Arun, G.C.Bilaspur
4.	Nuclear and particle physics DSCUG-PHT-351(a)(3Cr) (70) DSCUG-PHP-351 (b) (1Cr) (30)	Mr. Lalit Kumar, G.C. Rampur
5.	Digital Electronics DSEUG-PHT-352 (a) (3Cr) 70 DSEUG-PHP-352 (b) (1Cr) (30)	Dr. Akashdeep, G.C. Chewari, Chamba
6.	Basic of Quantum Mechanics DSEUG-PHT-241(a) (3Cr) (70) DSEUG-PHT-241(b) (1Cr) (30)	Dr. A.V. Nidhi, G.C. Solan
7.	Statistical and Thermal Physics DSEUG-PHT-361(a)(3Cr) (70) DSEUG-PHT-361 (1Cr) (30)	Dr. Brij Mohan, G.C. Kotshera
8.	Laser and Optical Fibre Communication DSCUG-PHT-232 (a) (3Cr) (70) DSCUG-PHP-232 (b) (1Cr) (30)	Ms. Jyotsna, G.C. Barsar
9.	Atomic and Molecular Physics DSCUG-PHTH-363 (4Cr) (100)	Dr. Anup Kumar, G.C. Nahan
10.	Solid State Physics-II DSEUG-PHTH-366(4Cr) (100)	Dr. Shalini Sharma, G.C. Nalagarh
11.	Experiment in Physics-I DSCUG-PHP-242 (4Cr) (100) (Vibration, Optics, Waves, Laser)	Ms. Sapna Verma, G.C. Kullu
12.	Experiments in Physics -II DSCUG-PHP-352 (4Cr) (100) (Solid State and Electrical, Computer)	Dr. Anup and Ms. Richa, G.C. Nahan
13.	Experiments in Physics -III DSCUG-PHP-362 (4Cr) (100) (Nuclear & Digital Electrical)	Dr. Akashdeep, G.C. Chewari, Chamba

Thanking you

Yours Truly

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