



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh

(Established Under Central University Act 2009)

P O Box. 21, Dharamshala, Distt. Kangra, Himachal Pradesh-176215

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

CERTIFICATE

It is certified that **Ankita Sharma**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled “**Nitrogen and Boron doped graphene oxide/metal oxide composites and its applications in energy storage**” under my supervision. Her work is authentic and is not published anywhere.

Ankita Sharma

Ankita Sharma

(Student)

Rudra

Dr. Rajesh Kumar Singh

(Project Supervisor)

Chatterjee
22/7/19

Dr. Subhankar Chatterjee

(In-Charge, Chemistry)

Dr. Subhankar Chatterjee

Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra; HP-176206; India



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Central University of Himachal Pradesh

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TAB, Shahpur, Distt. Kangra, Himachal Pradesh- 176206

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that **Miss Ankita Bhardwaj (CUHP17CCS03)**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh during session 2017-2019 has completed her project work entitled, “**A preliminary study on the coarser particulate matter bound polycyclic aromatic hydrocarbons over district Kangra, Himachal Pradesh**” under my supervision. Her work is authentic and not published anywhere.

Ankita

Ankita Bhardwaj

(Student)

Ankit Tandon

Dr. Ankit Tandon

(Project Supervisor)

Dr. Ankit Tandon
Assistant Professor
Deptt. of Environmental Sciences
Central University of Himachal Pradesh

Subhankar Chatterjee
22/3/19

Dr. Subhankar Chatterjee

(In- Charge Chemistry)

Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra; HP-176206; India



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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Ankush Minhas, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed his project work entitled "Remediation of Eriochrome Black from Aqueous System Using Solid Waste Obtained from Pine Needles" under my supervision. His work is authentic and is not published anywhere.

Ankush

Ankush Minhas
(Student)

Chetan

Dr. Chetan Chauhan
(Project Supervisor)

Subhankar
22/2/17

Dr. Subhankar Chatterjee
(In-Charge, Chemistry)
Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra, HP-176206, India



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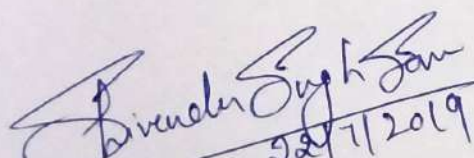
SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

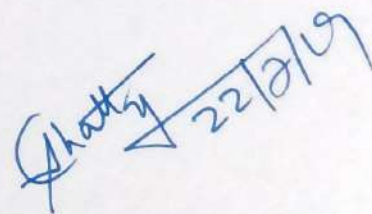
It is certified that **Asha kumari**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her/his project work entitled “**Organoarsenic Compounds: Current Understanding, Analysis and Applications**” under my supervision. Her work is authentic and is not published anywhere.

Asha Kumari
Asha kumari

(Student)


Dr. Shivender Singh Saini

(Project supervisor)


22/8/19

Dr. Subhankar Chatterjee

(In-Charge, Chemistry)

Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra, HP-176206; India



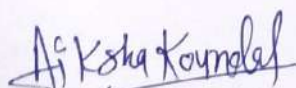
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Central University of Himachal Pradesh

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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Miss **Diksha Koundal**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled “**HPLC (High Pressure Liquid Chromatography) method development for polycyclic aromatic hydrocarbons Benzo(a)pyrene and Anthracene**” under my supervision. Her work is authentic and is not published anywhere.



Diksha koundal

(Student)


22/2/19

Dr. Subhankar Chatterjee

(Project Supervisor)

(In-charge, Chemistry)

Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra; HP-176206; India



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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that GAZAL, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her/his project work entitled "HPLC method development of phthalates BBP and DEP" under my supervision. Her work is authentic and is not published anywhere.

GAZAL
GAZAL
(Student)

Subhankar Chatterjee
22/7/19

Dr. Subhankar Chatterjee

(In-Charge, Chemistry)

(Project Supervisor)

Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra, HP-176206, India

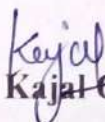


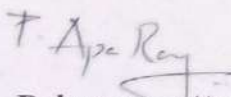
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Central University of Himachal Pradesh
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P.O. Box no. 21, DHARAMSHALA, DISTRICT KANGRA – 176206,
HIMACHAL PRADESH

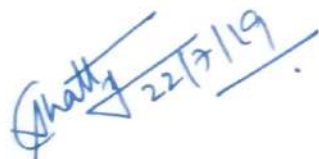
SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that **Ms. KAJAL CHAUHAN**, M.Sc. (IV Semester) student of Department of chemistry and chemical Sciences, Central University of Himachal Pradesh, Dharamshala (2017-2019) has successfully completed her Master's dissertation entitled, **“Role of Topological, geometrical, constitutional, electronic based molecular descriptors: CA(II) As a Case Study ”** under my supervision. Her work is authentic and is not published anywhere.


Kajal Chauhan
CUHP17CCS10
(Student)


Dr. Polamarasetty Aparoy
Dr. P. APAROY
(Supervisor)
Assistant Professor
Centre for Computational Biology & Bioinformatics
School of Life Sciences
Central University of Himachal Pradesh
Dharamshala, Kangra-176215


Dr. Subhankar Chatterjee
(In-charge, Chemistry)
Dr. Subhankar Chatterjee
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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that **Miss. Kanika Verma**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled, “**Synthesis, Characterization and Sensing of Epinephrine (a Neurotransmitter) using Cobalt oxide Nanoparticles**” under my supervision. Her work is authentic and is not published anywhere.

Kanika Verma
(Student)

Dr. Dilbag Singh
(Project Supervisor)

Dr. Subhankar Chatterjee
(In-Charge, Chemistry)

Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra, HP-176206, India

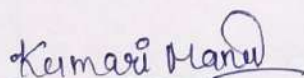
Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Kumari Manu, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "Voltammetric techniques and its applications to pesticide analysis: a review" under my supervision. Her work is authentic and is not published anywhere.


Kumari Manu

(Student)



Dr Chetan Chauhan

(Project Supervisor)


22/3/19

Dr. Subhankar Chatterjee

(In-Charge, Chemistry)
Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
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Kangra, HP-176206; India



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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Ms. **Kritika**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed his project work entitled “**Synthesis and pharmacological significance of pyrazole-thiazole substituted Schiff’s bases – A Review**” under my supervision. Her work is authentic and is not published anywhere.

Kritika
Kritika
(Student)

Shiwani
Dr. Shiwani Berry
(Project Supervisor)

(Khat) 22/7/19
Dr. Subhankar Chatterjee
(In-Charge, Chemistry)

Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra; HP-176206; India



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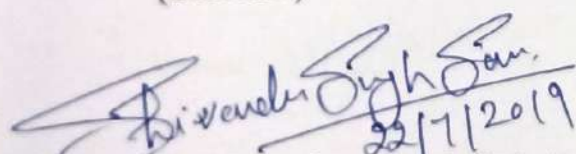
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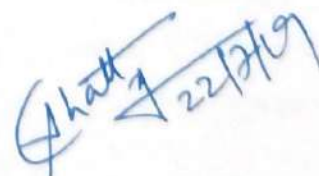
SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that **Miss. Neha Sharma**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled, “**Anthropogenic Arsenic Stress on Indian Groundwater**” under my supervision. Her work is authentic and is not published anywhere.

Neha Sharma
Neha Sharma
(Student)


Dr. Shivender Singh Saini
(Project Supervisor)
22/7/2019


22/7/19

Dr. Subhankar Chatterjee
(In-Charge, Chemistry)
Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
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Kangra, HP-176206; India



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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Manisha Chadha, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled “Temporal variation in concentration and sources of respirable particulate matter associated polycyclic aromatic hydrocarbons over Dharamshala, Himachal Pradesh” under my supervision. Her work is authentic and is not published anywhere.

Manisha
Manisha Chadha
(Student)

Ankit Tandon
Dr. Ankit Tandon
(Project Supervisor)

Dr. Ankit Tandon
Assistant Professor
Deptt. of Environmental Sciences
Central University of Himachal Pradesh

Subhankar Chatterjee
Dr. Subhankar Chatterjee
(In-Charge, Chemistry)

Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that **Miss Priti Sharma (CUHP17CCS16)**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh during session 2017-2019 has completed her project work entitled, **“Respirable particulate associated polycyclic aromatic hydrocarbons in rural environment of district Kangra, Himachal Pradesh”** under my supervision. Her work is authentic and not published anywhere.


Priti Sharma

(Student)



Dr. Ankit Tandon

(Project Supervisor)

Dr. Ankit Tandon
Assistant Professor
Deptt. of Environmental Sciences
Central University of Himachal Pradesh



Dr. Subhankar Chatterjee

(In- Charge Chemistry)

Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra, HP-176206, India



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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Priyanka, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her/his project work entitled “**Structure activity relationship of carbonic anhydrase-II inhibitors**” under my supervision. Her work is authentic and is not published anywhere.

Priyanka
Priyanka
(Student)

F. Aparajay
Dr. Polamarasetty Aparoy
(Project Supervisor)

Dr. P. APAROY
Assistant Professor
Centre for Computational Biology & Bioinformatics
School of Life Sciences
Central University of Himachal Pradesh
Dharamshala, Kangra-176215

Shetty
22/7/19

Dr. Subhankar Chatterjee
(In-Charge, Chemistry)
Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra, HP-176206, India



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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Ms. **Riya Sharma**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "*Gas Chromatography method development for the organophosphorus pesticide, Malathion*" under my supervision. Her work is authentic and is not published anywhere.

Riya Sharma

Riya Sharma

(Student)

Subhankar Chatterjee
22/7/19

Dr. Subhankar Chatterjee

(Project Supervisor)

(In-Charge, Chemistry)

Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Ruchi Rana, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "Review: Synthetic and biological attributes of pyrazole substituted thiazolidinone derivatives" under my supervision. Her work is authentic and is not published anywhere.

Ruchi Rana
(Student)

Dr. Shiwani Berry
(Project Supervisor)

Dr. Subhankar Chatterjee
(In-Charge, Chemistry)
Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra, Himachal Pradesh, India



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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that **Miss. Sanjeevani Kashyap**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled, "**Silver nanoparticles as a potential scaffold for optical sensing of mercuric ions**" under my supervision. Her work is authentic and is not published anywhere.

Sanjeevani Kashyap
(Student)

Dr. Dilbag Rana
(Project Supervisor)

Dr. Subhankar Chatterjee

(In-Charge, Chemistry)

Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra, HP-176206, India



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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Ms. **Santosh Kumari**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed his project work entitled “**Benzimidazole-Thiazolidinone – Versatile Heterocyclic Scaffold in Medicinal Chemistry – A Review**” under my supervision. Her work is authentic and is not published anywhere.

Santosh Kumari
Santosh Kumari
(Student)

Shivani
Dr. Shewani Berry
(Project Supervisor)

Shathy 22/2/19
Dr. Subhankar Chatterjee
(In-Charge, Chemistry)
Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Ms. **Shikha Sharma**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed his project work entitled “**Spectrophotometric Determination of Oseltamivir Phosphate, Swine Flu Drug in Different Pharmaceutical Formulations**” under my supervision. Her work is authentic and is not published anywhere.

Shikha Sharma
(Student)

Dr. Chetan Chauhan
(Project Supervisor)

Dr. Subhankar Chatterjee
(In-Charge, Chemistry)
Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that **Shikha**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her/his project work entitled “**HPLC Method Development for Polycyclic Aromatic Hydrocarbons Phenanthrene and Pyrene**” under my supervision. Her work is authentic and is not published anywhere.

Shikha
Shikha
(Student)

Shatter 22/7/19
Dr. Subhankar Chatterjee
(Project Supervisor)
(In Charge, Chemistry)
Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra: HP-176206, India



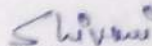
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Central University of Himachal Pradesh

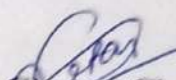
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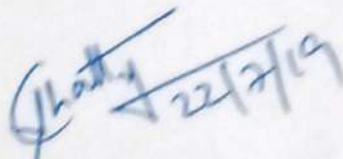
SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Shivani, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "A review: Recent Advances in Conducting Polymer based Chemically Modified Electrode System " under my supervision. Her work is authentic and is not published anywhere.


Shivani
(Student)


Dr. Chetan Chauhan
(Project Supervisor)


Dr. Subhankar Chatterjee
(In-Charge, Chemistry)
Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Sonika Sharma, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "Review: Synthetic and biological attributes of pyrazole substituted Schiff's base derivatives" under my supervision. Her work is authentic and is not published anywhere.

Sonika Sharma
SONIKA SHARMA
(Student)

Shiwani
Dr. Shiwani Berry
(Project Supervisor)

Shankar 22/2/19
Dr. Subhankar Chatterjee
(In-Charge, Chemistry)
Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that **Miss. Sudhiksha Dhiman**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled, "**Europium Doped Gadolinium Oxide as a potential scaffold for the sensing of Fe³⁺ ions**" under my supervision. Her work is authentic and is not published anywhere.

Sudhiksha Dhiman

Sudhiksha Dhiman
(Student)

Dr. Dilbag Singh

Dr. Dilbag Singh
(Project Supervisor)

Dr. Subhankar Chatterjee
23/11/17

Dr. Subhankar Chatterjee
(In-Charge, Chemistry)

Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
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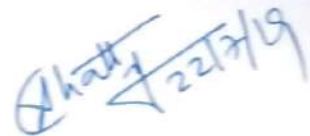
Certificate

It is certified that Ms. **Sunanda**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "*Gas Chromatography method development for the organophosphorus pesticides, Profenofos*" under my supervision. Her work is authentic and is not published anywhere.



Sunanda

(Student)



Dr. Subhankar Chatterjee

(Project Supervisor)

(In-Charge, Chemistry)

Dr. Subhankar Chatterjee

Assistant Professor & In-Charge

Dept. of Chemistry & Chemical Sciences

Central University of Himachal Pradesh

Kangra: HP-176206, India

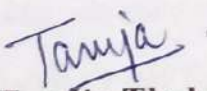



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
TAB, Shahpur, Distt. Kangra, Himachal Pradesh- 176206

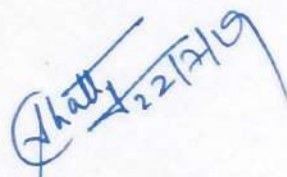
SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that **Ms. Tanuja Thakur**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her/his project work entitled “**Nitrogen/Boron Doped Graphene Oxide/Metal Oxide Composites and it's Bioapplications**” under my supervision. Her work is authentic and is not published anywhere.


Tanuja Thakur
(Student)


Dr. Rajesh Kumar Singh
(Project Supervisor)


Dr. Subhankar Chatterjee
(In-Charge, Chemistry)

Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra, HP-176206, India



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Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
TAB, Shahpur, Distt. Kangra, Himachal Pradesh- 176206

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Tanisha, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "Sensors for Colorimetric Detection of Arsenic in Drinking Water" under my supervision. Her work is authentic and is not published anywhere.

Tanisha
Tanisha
(Student)

Shivender Singh Saini
22/7/2019
Dr. Shivender Singh Saini
(Project Supervisor)

Subhankar Chatterjee
22/7/19
Dr. Subhankar Chatterjee
(In-Charge, Chemistry)
Dr. Subhankar Chatterjee
Assistant Professor & In-Charge
Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
Kangra, HP-176206, India




हिमाचलप्रदेशकेंद्रीयविश्वविद्यालय
Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP) - 176215

CERTIFICATE

*Department of Chemistry and Chemical Sciences
School of Physical and Material Sciences*

This is to certify that *Abhimanyu Choudhary, M.Sc. Chemistry (Semester IV)*, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed his project work (CCS 565) entitled "*Biomass Derived Activated Carbon and its Applications*" for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.


Abhimanyu Choudhary
Roll No. CUHP19CCS01


19.08.2021
Dr. Neeraj Gupta
(Project Supervisor)


Dr. Rajender Kumar
(Head, Department of Chemistry)



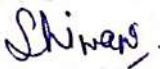
हिमाचलप्रदेशकेंद्रीयविश्वविद्यालय
Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP) - 176215

CERTIFICATE

*Department of Chemistry and Chemical Sciences
School of Physical and Material Sciences*

This is to certify that *Aditya Manu Bharti, M.Sc. Chemistry (Semester IV)*, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed his project work (CCS 565) entitled "*A Review on Prospects of functional graphene as a valuable nanomaterial for supercapacitors*" for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.


Aditya Manu Bharti
Roll No. CUHP19CCS02


Dr. Shiwani Berry
(Project Supervisor)


Dr. Rajender Kumar
(Head, Department of Chemistry)



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

Central University of Himachal Pradesh

(Established under the Central Universities Act 2009 (No. 25 of 2009))

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Mr. Akhil Pathania, student of M.Sc. Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh, completed his project work entitled "Hands-on experience on the Spectroscopic Techniques of NMR and ATR-FTIR through Organic Synthesis of *p*-Nitro acetanilide by Nitration of Acetanilide." under my supervision. His work is authentic and is not published anywhere.

Akhil
Akhil Pathania
(Student)

Neeraj
Supervisor 13.08.2021
Dr. Neeraj Gupta

Rajender
16.08.2021
Head of Department

विभागाध्यक्ष, रसायन एवं भौतिक विज्ञान विभाग
Head of Dept. of Chemistry & Physical Sciences
Central University of Himachal Pradesh
Shanpur, Naugra (H.P.)-175105



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Central University of Himachal Pradesh

(Established under Central Universities Act 2009)

Dharamshala (HP) – 176215

CERTIFICATE

*Department of Chemistry and Chemical Science
School of Physical and Material Sciences*

This is to certify that Mr. *Avneesh Thakur* student of *M.Sc Chemistry (Sem IV)*, Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed his project work (*CCS 565*) entitled "*Review on Plant Extract Mediated Synthesis Of Silver and Gold Nanoparticles For Various Applications*" for the award of the degree of Master of Science in Chemistry & Chemical Science under my supervision.

Manish

Dr. Manish Kumar
(*Project Supervisor*)

Avneesh

Avneesh Thakur
Roll no. *CUHP19CCCS05*

N. Gupta

Dr. Néeraj Gupta
(*Examiner*)

Rajender
Dr. Rajender Kumar

(*Head, Department of Chemistry*

& Chemical Science)
विभागाध्यक्ष, सामान्य एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh

2 अस्थायी शैक्षणिक खंड / Temporary Academic
शाहपुर, काँगड़ा (हि.प्र.) / Shahpur, Kangra



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

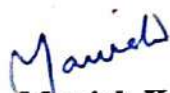
Central University of Himachal Pradesh

(Established under Central Universities Act 2009)
Dharamshala (HP) - 176215

CERTIFICATE


*Department of Chemistry and Chemical Science
School of Physical and Material Sciences*

This is to certify that *Bharti Kashyap*, student of *M.Sc. Chemistry (Sem IV)*, Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed her project work (*CCS 565*) entitled "*Metal-Oxide-based nanomaterials as efficient electrodes for rechargeable high-performance Li-ion batteries: A Review*" for the award of the degree of Master of Science in Chemistry & Chemical Science under my supervision.


Dr. Manish Kumar
(Project Supervisor)


Bharti Kashyap
Roll no. CUHP19CCS06


Dr. Neeraj Gupta
(Examiner)


Dr. Rajender Kumar
विभागाध्यक्ष, (Head, Department of Chemistry
Head, Dept. of Chemical Science)
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic
शाहपुर, काँगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)



हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh

(Established under Central University Act 2009)

TAB Shahpur, District-Kangra, Himachal Pradesh-176206

School of Physical and Material Sciences

Certificate

It is certified that **Gajraj Singh (Roll No.- CUHP19CCS08)** student of M.Sc. Chemistry, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh, completed his project work entitled "**Ormosil NPs: Synthesis, its surface modification and biomedical applications**" (literature review) over Dharamshala, Himachal Pradesh under my supervision and guidance. I assure that his work is in accordance with rules and regulations. His work is authentic and is not published anywhere.

Gajraj
Gajraj Singh
(Student)

Pranod Kumar Gangwar
Dr. Pranod Kumar Gangwar
(Project Supervisor)

Rajender Kumar
Dr. Rajender Kumar

Head of department of Chemistry and Chemical Sciences

विश्वविद्यालय रसायन एवं रसायनिक विज्ञान विभाग
Central University of Himachal Pradesh
Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh

अस्थायी शैक्षणिक खंड / Temporary Academic Block

शाहपुर, काँगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)-176206

CENTRAL UNIVERSITY OF HIMACHAL PRADESH

CERTIFICATE



Department of chemistry and chemical sciences (session 2020-2021)

School of Physical and material sciences

This is certify that Kusham Lata ,MSc. Chemistry (Sem IV) , Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed her project work entitled "CaO as nanoparticle and their applications" (review of literature) for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.


Supervised by: _____

Dr. Rajendra kumar

Submitted by:

Kusham lata


विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग

Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh

अस्थायी शैक्षणिक खंड / Temporary Educational Zone

शालीमार कॉम्पला (हि.प्र.) / Shimla Cantt. (H.P.)



Certificate

Department of Chemistry and Chemical Sciences

School Of Physical and Material Sciences

It is certified that Miss. Kanupriya, student of M.Sc. Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh, has completed her project work entitled "Hands-on experience on the Spectroscopic Techniques of NMR and ATR-FTIR through Organic Synthesis of BINOL" under my supervision. Her work is authentic and is not published anywhere.

Kanupriya

Kanupriya
(Student)

N Gupta
12.08.2021

Supervisor

Dr. Neeraj Gupta

Rajender Kumar
Head of Department

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic Block
शान्पर कॉम्पाउंड (हि.प्र.) / Shanpur, Kangra (H.P.)-175101

CENTRAL UNIVERSITY OF HIMACHAL PRADESH

CERTIFICATE



Department of chemistry and chemical sciences (session 2020-2021)

School of Physical and material sciences

This is certify that Kusham Lata ,MSc. Chemistry (Sem IV) , Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed her project work entitled "CaO as nanoparticle and their applications" (review of literature) for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.


Supervised by:

Dr. Rajendra kumar

Submitted by:

Kusham lata



विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic Block
शाहपुर, काँगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)-17



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Central University of Himachal Pradesh

(Established under the Central Universities Act 2009 (No. 25 of 2009))

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Miss. Meenakshi, student of M.Sc. Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh, completed her project work entitled "Hands-on experience on the Spectroscopic Techniques of NMR and ATR-FTIR through Organic Synthesis of Picric acid by Nitration of Phenol" under my supervision. Her work is authentic and is not published anywhere.

Meenakshi

(Student)

13.08.2021
Supervisor

Dr. Neeraj Gupta

16.08.2021

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head of Department
Head, Dept. of Chemistry
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Dr. Rajender Kumar
Central University of Himachal Pradesh
अस्थायी शैक्षणिक भवन / Temporary Academic Building
शाहपुर, श्रीवास्तव रोड / Shahpur, Srivastava Road



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP) – 176215

CERTIFICATE

*Department of Chemistry and Chemical Science
School of Physical and Material Sciences*

This is to certify that Miss *Namiksha*, student of *M.Sc. Chemistry (Sem IV)*,
Department of Chemistry and Chemical Science, Central University of
Himachal Pradesh has completed his project work (*CCS 565*) entitled
*“Review on Synthetic methods and applications of Bimetallic Silver and
Gold nanoparticles”* for the award of the degree of Master of Science in
Chemistry & Chemical Science under my supervision.

Manish
Dr. Manish Kumar
(Project Supervisor)

Neeraj
Dr. Neeraj Gupta
(Examiner)

Namiksha
Namiksha
Roll no. **CUHP19CCCS15**

Rajender
Dr. Rajender Kumar

विभागाध्यक्ष (Head, Department of Chemistry
Head, Dept. of Chemistry & Chemical Sciences
& Chemical Science)
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic Block
शाहपुर, काँगड़ा (हि.प्र.) / Shahpur, Kangra



हिमाचलप्रदेशकेंद्रीयविश्वविद्यालय
Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP) - 176215

CERTIFICATE

*Department of Chemistry and Chemical Sciences
School of Physical and Material Sciences*

This is to certify that *Nancy, M.Sc. Chemistry (Semester IV)*, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed her project work (CCS 565) "*Electrochemical sensing of chromium ions using carbon and metal based nanomaterial*" entitled for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.

Nancy
Nancy
Roll No. CUHP19CCS16

Neeraj Gupta
19.08.2021
Dr. Neeraj Gupta
(Project Supervisor)

Rajender Kumar
Dr. Rajender Kumar
(Head, Department of Chemistry)



हिमाचलप्रदेशकेंद्रीयविश्वविद्यालय
Central University of Himachal Pradesh
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Dharamshala (HP) - 176215

CERTIFICATE

*Department of Chemistry and Chemical Sciences
School of Physical and Material Sciences*

This is to certify that *Naveen Kumar, M.Sc. Chemistry (Sem IV)*, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed his project work (CCS 565) entitled "*A Review on Pyrolysis of Plastic waste for the production of alternative fuels resources*" for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.

Naveen Kumar
Naveen Kumar
Roll No. CUHP19CCS17

Shiwani Berry
Dr. Shiwani Berry
(Project Supervisor)

Rajender Kumar
Dr. Rajender Kumar
(Head, Department of Chemistry)



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

Central University of Himachal
Pradesh

(Established under Central University Act 2009)


Tab, Shahpur, Distt Kangra, Himachal Pradesh-176206


SCHOOL OF PHYSICAL AND MATERIAL SCIENCE

Certificate

It is certified that Nitin thakur, M.Sc student of Department of Chemistry and Chemical Science, Central University of Himachal Pradesh completed his project work entitled "quantum dot and its Applications" under My supervision His work is authentic and is not published anywhere.

Nitin thakur
(student)


Dr. Pramod kumar gangwar
(project supervisor)


विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान
Head. Dept. of Chemistry & Chemical Science
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
असहायी नैतिकता केंद्र / Dept. of Ethics
शाहपुरा, कांगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)



हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP) - 176215

Certificate

Department of Chemistry and Chemical Science
School of Physical and Material Sciences

This is to certify that *Nitish Kumar, M.Sc. Chemistry (Sem IV)*, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed his project work (CCS 565) entitled "*Polymer based nanocomposites of metal oxides and their applications: A Review*" for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.

Dr. Manish Kumar
(Project Supervisor)

Nitish Kumar
(CUHP19CCS19)

Dr. Neeraj Gupta
(Examiner)

विभागाध्यक्ष, रसायन विज्ञान
(Head of Department of chemistry)
Head, Dept. of Chemistry
and Chemical Science
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh
स्थायी शैक्षणिक खंड / Temporary Academic Block
शाहपुर, कांगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)-176215



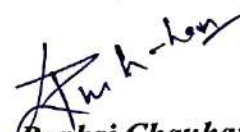
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
(Established under Central Universities Act
Dharamshala (HP) – 176215

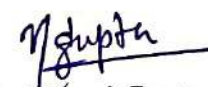
CERTIFICATE


*Department of Chemistry and Chemical Science
School of Physical and Material Sciences*

This is to certify that **Pankaj Chauhan**, student of **M. Sc Chemistry (Sem IV)**, Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed his project work (CCS 565) entitled "**Synthetic methods, Properties and Applications of Titanium Dioxide (TiO₂) Nanoparticles: A Review**" for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.


Dr. Manish Kumar
(Project Supervisor)


Pankaj Chauhan
Roll no. CUHP19CCCS20


Dr. Neeraj Gupta
(Examiner)


Dr. Rajender Kumar
(Head, Department of Chemistry &
Chemical Science)

विभागाध्यक्ष, रसायन विज्ञान
Head, Dept. of Chemistry &
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic Block
शाहपुर खण्डा (हि.प्र.) / Shahpur, Kangra (H.P.)-176215



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh

(Established under Central University Act 2009)
TAB Shahpur, District-Kangra, Himachal Pradesh-176206

School of Physical and Material Sciences

Certificate

It is certified that **Sahil (Roll No.- CUHP19CCS21)** student of M.Sc. Chemistry, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh, completed his project work entitled “**Polyethyleneimine based nanoparticles and their applications in different field**(review of literature)” over Dharamshala, Himachal Pradesh under my supervision and guidance. I assure that his work is in accordance with rules and regulations. His work is authentic and is not published anywhere.

Sahil
(Student)

Dr. Rajender Kumar
(Project Supervisor)

Dr. Rajender Kumar
Head of department of Chemistry and Chemical Sciences
Central University of Himachal Pradesh



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal
Pradesh

(Established under Central University Act 2009)
Tab, Shahpur, Distt Kangra, Himachal Pradesh-176206

SCHOOL OF PHYSICAL AND MATERIAL SCIENCE

Certificate

It is certified that Mr. Sandeep Kumar, M.Sc student of Department of Chemistry and Chemical Science, Central University of Himachal Pradesh completed his project work entitled "Introduction to CNTs (Carbon Nanotubes) and its Biomedical Applications" under My supervision His work is authentic and is not published anywhere.

Sandeep Kumar
Sandeep Kumar

(Student)

Parmod Kumar Gangwar
Dr. Parmod Kumar Gangwar
(Project Supervisor)

Manish Kumar
Dr. Manish Kumar
Signature of Examiner

Rajender Kumar
Dr. Rajender Kumar

(Project Supervisor)

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept of Chemistry & Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक इकाई / Academic Block
शाहपुर, कांगड़ा (जिला) / Shahpur, Kangra (Distt), Himachal Pradesh



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय Central University of Himachal Pradesh

(Established under Central University Act 2009)

TAB Shahpur, District-Kangra, Himachal Pradesh-176206

School of Physical and Material Sciences

Certificate

It is certified that **Saurav Sharma** (Roll No.- CUHP19CCS23) student of M.Sc. Chemistry, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh, completed his project work entitled “**Metal Organic Framework and their Application in different fields**” over Dharamshala, Himachal Pradesh under my supervision and guidance. I assure that his work is in accordance with rules and regulations. His work is authentic and is not published anywhere.

Saurav
Saurav Sharma
(Student)

Pramod Kumar
Dr. Pramod Kumar
(Project Supervisor)

Manish
Dr. Manish Kumar
(Examiner)

Rajender Kumar
Dr. Rajender Kumar
(Head, Department of Chemistry & Chemical Science)
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic Block
शाहपुर, कांगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)



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Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP) – 176215

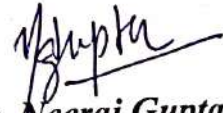
CERTIFICATE


Department of Chemistry and Chemical Science
School of Physical and Material Sciences

This is to certify that Miss *Shagun* student of *M. Sc Chemistry (Sem IV)*, Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed her project work (*CCS 565*) entitled "*Review on Protein nanoparticles as drug delivery vehicles*" for the award of the degree of Master of Science in Chemistry & Chemical Science under my supervision.


Dr. Manish Kumar
(Project Supervisor)


Shagun
Roll no.
CUHP19CCCS24


Dr. Neeraj Gupta
(Examiner)


Dr. Rajender
Kumar

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
(Head, Department of Chemistry & Chemical Sciences
of Chemistry & Chemical Science)
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh

अस्थायी शैक्षणिक खंड / Temporary Academic Block
शाहपुर, कांगड़ा (डि.प्र.) / Shahpur, Kangra



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Central University of Himachal Pradesh

(Established under Central Universities Act 2009)
Shahpur Campus, Distt. Kangra, Himachal Pradesh- 176206

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Shazia Hussain, M.Sc. student of Department of Chemistry and Chemical sciences, Central University of Himachal Pradesh completed her project work entitled “**A brief study on Synthesis and biological activity of spiro thiazolidinones**” under my supervision. Her work is authentic and is not published anywhere.

Shazia Hussain

(Student)

Dr. Shiwani Berry

(Assistant professor
Department of Chemistry and
Chemical Sciences
Central University of Himachal Pradesh
Temporary Academic Block, Shahpur)

Dr. Rajender Kumar

(Head of Department,
Department of Chemistry and
Chemical Sciences
Central University of Himachal Pradesh
Temporary Academic Block, Shahpur)

Certificate

Department of Chemistry and Chemical Sciences

School Of Physical and Material Sciences

This is to certify that Shiwani of MSc Chemistry (Sem4) Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed her project work (CCS565) embodied in dissertation is review of the work done by various authors in recent years **Magnesium oxide nanopartecles and its applications(Review of Literature)** for the award of degree of Master of Science in chemistry and chemical sciences under my supervision

SHIWANI

CUHP19CCS26


Supervisor: Dr. Rajender Kumar (HEAD OF DEPARTMENT)

Department of chemistry and chemical sciences
विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh,
अस्थायी शैक्षणिक खंड/Terrace
शाहपुर,काँगड़ा (हि.प्र.)/ Shahpur, Kangra



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Central University of Himachal Pradesh

(Established under Central Universities Act 2009)

Shahpur Campus, Distt. Kangra, Himachal Pradesh- 176206

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Sonika Kumari, M.Sc. student of Department of Chemistry and Chemical sciences, Central University of Himachal Pradesh completed her project work entitled "A Review on Synthesis of Schiff's Base Using Microwave Irradiation: An Innovative Green Approach" under my supervision. Her work is authentic and is not published anywhere.


Sonika Kumari

(Student)


Dr. Shiwani Berry

(Assistant professor
Department of Chemistry and
Chemical Sciences
Central University of Himachal Pradesh
Shahpur Campus).


Dr. Rajender Kumar

(Head of Department - सायनिक विज्ञान विभाग
Department of Chemistry and Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
शाहपुरी शैक्षणिक केंद्र (Temporary Academic Centre
शाहपुर, कांगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)-176206



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Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
TAB, Shahpur, Distt. Kangra, Himachal Pradesh- 176206

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Sushma Devi, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "**A Review on Heavy Metal Analysis in the different water resources of Himachal Pradesh**" under my supervision. Her work is authentic and is not published anywhere.

Sushma devi
Sushma Devi
(Student)

Shiwani

Dr. Shiwani Berry
(Project Supervisor)
Assistant professor,
Department of Chemistry
and Chemical Sciences.
Central University of Himachal Pradesh
Shahpur Campus

Rajender Kumar
Dr Rajender Kumar
(Head of Department,
Chemistry and Chemical Sciences,
Central University of Himachal Pradesh,
Shahpur Campus



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Central University of Himachal Pradesh

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Shahpur Campus, Distt. Kangra, Himachal Pradesh

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Tabassum Nike, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "A Review on Biological activity of Halogenated Heterocyclic compounds and their derivatives" under my supervision. Her work is authentic and is not published anywhere.

Tabassum Nike

(Student)

Dr. Shiwani Berry

(Assistant Professor
Department of Chemistry and
Chemical Sciences
Central University of Himachal Pradesh
Temporary Academic Block, Shahpur)

Dr. Rajender Kumar

(Head of Department,
Department of Chemistry and
Chemical Sciences
Central University of Himachal Pradesh
Temporary Academic Block, Shahpur)



**CENTRAL UNIVERSITY OF
HIMACHAL PRADESH**
TEMPORARY ACADEMIC BLOCK (TAB) –
SHAHPUR, DISTT. – KANGRA,
HIMACHAL PRADESH – 176215, INDIA

Dr. NEERAJ GUPTA
Assistant Professor
Department of Chemistry and
Chemical Sciences

Mobile: +91-8894211891

Email: gupta_nri@hpcu.ac.in

CERTIFICATE

This is to certify that the work embodied in this thesis entitled “SYNTHEIS AND CHARACTERIZATION OF ACTIVATED CHARCOAL PREPARED FROM THE DRIED HUSK OF *COCOS NUCIFERA* (COCONUT PALM)” submitted for the award of degree of Masters of Science to Central University of Himachal Pradesh, Temporary Academic Block (TAB) – Shahpur, Distt. – Kangra, Himachal Pradesh – 176215, India was carried out by Mr. Vishal Bharati Jaryal (CUHP19CCS31) under my guidance and supervision. This work is original and has not been submitted for any other degree or diploma of any other university or institute. The assistance and help received during the course of investigation has been duly acknowledged.

Place: *Shahpur*
Date: *12.12.2021*

Vishal Bharati Jaryal
(CUHP19CCS31)

Dr. Neeraj Gupta
(Research Supervisor)

Dr. Rajender Kumar 10-8-21
(Head, Department of Chemistry)



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Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP)-176215

Department of Chemistry & Chemical Science
School of Physical and Material Science
CERTIFICATE

Dated: 11/07/2022

This is to certify that **Aman Jamwal**, student of M.Sc. Chemistry (Sem. IV), Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed his project work (CCS 565) entitled “Synthesis of ORMOSIL Nano Particles and its applications in drug delivery” for the award of the degree of Master of Science in Chemistry & Chemical Science under my supervision.

Aman Jamwal

Student Name

Aman Jamwal

(CUHP20CCS03)

Pramod Kumar

Supervisor Name

Dr. Pramod Kumar

External Examiner

[Signature]
Head of the Department 11-7-22



Central University of Himachal Pradesh

(Established under Central Universities Act 2009) Dharamshala, District Kangra,

Himachal Pradesh-176215

Department of Chemistry and Chemical Science

School of Material and Physical Science

CERTIFICATE

This is to certify that the work embodied in this project entitled “(A REVIEW: IRON BASED HYBRID NANOMATERIAL: CHALLENGES IN OVARY CANCER TREATMENT)” submitted for the award of degree of **Masters of Science** to Central University of Himachal Pradesh,– Shahpur, Distt. – Kangra, Himachal Pradesh – 176215, was carried out by **Mrs. Anita Choudhary (CUHP20CCS04)** under my guidance and supervision. This work is original and has not been submitted for any other degree or diploma of any other university or institute.

ANITA CHOUDHARY
(Student)

Dr. PRAMOD KUMAR
(Research Supervisor)

Dr. RAJENDER KUMAR 11-7-22
(Head of Department)
Department of Chemistry and Chemical Science
EXAMINER



CENTRAL UNIVERSITY OF HIMACHAL PRADESH ACADEMIC
BLOCK SHAHPUR, DISTT.-KANGRA, HIMACHAL PRADESH –
176215, INDIA

DEPARTMENT OF CHEMISTRY AND CHEMICAL SCIENCE
SCHOOL OF PHYSICAL AND MATERIAL SCIENCE

CERTIFICATE

This is to certify that the work embodied in this thesis entitled "Nanopesticides for sustainable agriculture development" submitted for the award of the degree of Masters of Science to Central University of Himachal Pradesh, Academic Block – Shahpur, Distt – Kangra, Himachal Pradesh –176215, India was carried out by Mr. Ankush Kumar(CUHP20CCS06) under my guidance and supervision. This work is original and has not been submitted for any other degree or diploma of any other university or institute. The assistance and help received during the course of investigation have been duly acknowledged.

Ankush
Ankush Kumar
(CUHP20CCS06)

Date: 11/07/2022

Supervisor
Rajender
Dr. Rajender Kumar 11-7-22

External Examiner

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Science
हिमाचल प्रदेश Head of Department 11-7-22
Central University of Himachal Pradesh
Dr. Rajender Kumar
अस्थायी शैक्षणिक खंड / Temporary Academic Block
शाहपुर, कांगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)



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(Established under Central Universities Act 2009)
Dharamshala (HP)-176215

Department of Chemistry & Chemical Science
School of Physical and Material Science
CERTIFICATE

Dated: 11/7/22

This is to certify that **ARPIT**, student of **M.Sc. Chemistry (Sem. IV)**, Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed his project work (**CCS 565**) entitled "**SYNTHESIS AND CHARACTERIZATION OF ACTIVATED CHARCOAL PREPARED FROM LANTANA CAMARA STEM**" for the award of the degree of **Master of Science** in Chemistry & Chemical Science under my supervision.

Student Name

ARPIT

(CUHP20CCS07)

Supervisor Name

Dr. Neeraj Gupta

External Examiner

Head of the Department
11-7-22

Central University of Himachal Pradesh

(Established under Central Universities Act 2009)
Shahpur Campus, Distt Kangra, Himachal Pradesh



SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Arti Devi, M.Sc. Chemistry student of Department of Chemistry and Chemical Science, Central University of Himachal Pradesh completed her project work entitled " **A Review on the Green Synthesis of Xanthene Derivatives using Iron Oxide Nanoparticle As an efficient and magnetically re-usable heterogeneous Nanocatalyst** " under my supervision. Her work is authentic and is not published anywhere.

Arti Devi

(Student)

Dr. Shiwani Berry
(Assistant Professor)

Department of chemistry & chemical science

Central university of Himachal Pradesh

Dr. Rajender Kumar
(Head of Department)

Department of chemistry & chemical science

Central university of Himachal Pradesh

Central University of Himachal Pradesh

(Established under Central Universities Act 2009) Dharamshala, District Kangra,
Himachal Pradesh-176215



CERTIFICATE

This is to certify that the work embodied in this project entitled "*A Review on the encapsulated folic acid using casein nanoparticles for the oral delivery of folic acid*" submitted for the award of degree of **Masters of Science** to Central University of Himachal Pradesh,– Shahpur, Distt. – Kangra, Himachal Pradesh – 176215, was carried out by **Gurmeet Singh (CUHP20CCS10)** under my guidance and supervision. This work is original and has not been submitted for any other degree or diploma of any other university or institute.

Place:

Dr. PRAMOD KUMAR
(Assistant professor)
(Research Supervisor)

Gurmeet Singh
(Student)

Dr. RAJENDER KUMAR 11-7-22
(Head of Department)
Department of Chemistry and
Chemical Science

External Examiner



CENTRAL UNIVERSITY OF HIMACHAL PRADESH
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HIMACHAL PRADESH – 176215, INDIA
DEPARTMENT OF CHEMISTRY AND CHEMICAL SCIENCES
SCHOOL OF PHYSICAL AND MATERIAL SCIENCE

CERTIFICATE

This is to certify that the work embodied in this thesis entitled “**SYNTHEIS AND CHARACTERIZATION OF DNP LEUCINE**” submitted for the award of degree of **Masters of Science** to Central University of Himachal Pradesh, Academic Block – Shahpur, Distt. – Kangra, Himachal Pradesh – 176215, India was carried out by **ISHA SHARMA (CUHP20CCS12)** under my guidance and supervision. This work is original and has not been submitted for any other degree or diploma of any other university or institute. The assistance and help received during the course of investigation has been duly acknowledged.

Sharma

ISHA SHARMA
(CUHP20CCS12)

DATE : 11 /07 / 2022

Rajender
SUPERVISOR
DR. RAJENDER KUMAR
11-7-22

EXTERNAL EXAMINER

Rajender
11-7-22
HEAD OF DEPARTMENT

अनायाध्यक्ष, रसायन विज्ञान
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय



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Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP)-176215

Department of Chemistry & Chemical Science
School of Physical and Material Science
CERTIFICATE

Dated:

This is to certify that **Kalpna Devi**, student of M.Sc. Chemistry (Sem. IV), Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed her Review work (CCS 565) entitled "Targeted drug delivery applications of Dendrimers : A Review" for the award of the degree of Master of Science in Chemistry & Chemical Science under my supervision.

Kalpna Devi

Student Name

Kalpna Devi

(CUHP20CCS14)

Pramod Kumar

Supervisor Name

Dr. Pramod Kumar

[Signature]
External Examiner

[Signature]
Head of the Department 11-7-22




हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP)-176215

Department of Chemistry & Chemical Science
School of Physical and Material Science
CERTIFICATE

Dated: 11/07/2022

This is to certify that KAMINI KAUSHAL, student of M.Sc. Chemistry (Sem. IV), Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed his project work (CCS 565) entitled "Studying the crystallinity and composition of activated carbon derived from pine needles" for the award of the degree of Master of Science in Chemistry & Chemical Science under my supervision.

Kamini Kaushal
Student Name
Kamini Kaushal
(CUHP20CCS15)


Supervisor Name
Dr. Neeraj Gupta


External Examiner


Head of the Department | 11-7-22



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BLOCK SHAHPUR, DISTT.-KANGRA, HIMACHAL PRADESH –
176215, INDIA

DEPARTMENT OF CHEMISTRY AND CHEMICAL SCIENCE
SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

CERTIFICATE

This is to certify that the work embodied in this thesis entitled "SYNTHESIS OF 2, 4-DINITROPHENYL ARGININE AND ITS CHARACTERIZATION" submitted for the award of the degree of Masters of Science to Central University of Himachal Pradesh, Academic Block – Shahpur, Distt – Kangra, Himachal Pradesh –176215, India was carried out by Miss. Kanika Sahotra (CUHP20CCS16) under my guidance and supervision. This work is original and has not been submitted for any other degree or diploma of any other university or institute. The assistance and help received during the course of investigation have been duly acknowledged.


Kanika Sahotra
(CUHP20CCS16)

Date: 11/07/2022

Supervisor


Dr. Rajender Kumar 11-7-22

External Examiner


Head of Department 11-7-22

विभागाध्यक्ष, रसायन विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी प्रयोगशाला ब्लॉक, शाहपुर, कांगड़ा अकादमिक ब्लॉक
शाहपुर, कांगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)-176206



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Central University of Himachal Pradesh

(Established under Central Universities Act 2009)

Shahpur, Distt. Kangra, Himachal Pradesh- 176206

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Karan Kumar Rana, M.Sc. student of Department of Chemistry and Chemical sciences, Central University of Himachal Pradesh completed his project work entitled "A Review on Recent Advancement in the Medicinal Applications of Bio-based Polymers" under my supervision. His work is authentic and is not published anywhere.

Karan Kumar Rana
(Student)

Dr. Shiwani Berry

(Project Supervisor)

Assistant professor

Department of Chemistry and
Sciences

Central University of Himachal Pradesh

~~Temporary Academic Block~~, Shahpur

Dr. Rajender Kumar 11-7-22

(Head of Department,

Department of Chemistry and Chemical

विभागाध्यक्ष रसायन एवं रसायनिक विज्ञान विभाग
Chemical Sciences

Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केंद्रीय विश्वविद्यालय, Shahpur

Central University of Himachal Pradesh

अस्थायी शैक्षणिक ब्लॉक / Temporary Academic Block

शाहपुर, कांगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)-176206



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(Established under Central Universities Act 2009)
Dharamshala (H.P.)-176215

Department of Chemistry & Chemical Science
School of Physical and Material Sciences
CERTIFICATE

Dated: 11-07-2022

This is to certify that **Minakshi Mishra**, student of **M.Sc. Chemistry (Sem. IV)**, Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed his project work (CCS 565) entitled “**Synthesis and Characterization of Cadmium Oxide Nanoparticles by Precipitation Method**” for the award of the degree of **Master of Science** in Chemistry & Chemical Science under my supervision.

Student Name

Minakshi Mishra

(CUHP20CCS18)

Minakshi

Vivek Sheel
11/07/22
Supervisor Name

Dr. Vivek Sheel

External Examiner

विभागाध्यक्ष रसायन एवं रसायनिक विज्ञान विभाग
Head, Department of Chemistry & Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक ब्लॉक / Temporary Academic Block
शाहपुर, काँगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.) - 176206



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Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP)-176215

Department of Chemistry & Chemical Sciences
School of Material and Physical Sciences

CERTIFICATE

Dated: 11.7.2022

This is to certify that NEHA DEVI (CUHP20CCS19), student of M.Sc. Chemistry (Sem IV), Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed her project work (CCS 565) entitled "Studies on Zinc binding proteins of *Chlamydia pneumoniae*" for the award of the degree of Master of Science in Chemistry & Chemical Science under my supervision.

Neha Devi^o
Student Signature

Manish

Dr. Manish Kumar
Supervisor

External Examiner

Head of the Department 11-7-22

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
3 विभागीय खंड / Temporary Academic Block
3 (हि.प्र.) / Shahpur, Kangra (H.P.)-176201



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

Central University of Himachal Pradesh

(Established under Central Universities Act 2009)
Shahpur Campus, Distt Kangra, Himachal Pradesh

CERTIFICATE

Department of Chemistry and Chemical Science

School of Physical and Material sciences

It is certified that Mohit Rangra, M.Sc. Chemistry student of Department of Chemistry and Chemical Science, Central University of Himachal Pradesh completed his project work entitled "A Review on Green synthesis of Chromene derivatives using biodegradable waste as catalyst" under my supervision. His work is authentic and is not published anywhere.

Place: CUHP, Shahpur Campus.

Date: 11.1.7.1.....22

Mohit

Mohit Rangra

(Student)

Shiwani

Dr. SHIWANI BERRY

(Assistant professor)

(Project Supervisor)

Rajender Kumar
Dr. RAJENDER KUMAR 11-722

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of (Head of Department) Sciences

Department of Chemistry and Chemical Science

Central University of Himachal Pradesh

अस्थायी शैक्षणिक परिसर, शाहपुर, कांगड़ा जिला
Shahpur Campus (Distt Kangra), Himachal Pradesh



CENTRAL UNIVERSITY OF HIMACHAL PRADESH

SHAHPUR, DISTT. – KANGRA,

HIMACHAL PRADESH – 176215, INDIA

DEPARTMENT OF CHEMISTRY AND CHEMICAL SCIENCES

SCHOOL OF PHYSICAL AND MATERIAL SCIENCE

CERTIFICATE

This is to certify that the work embodied in this thesis entitled “SYNTHESIS AND CHARACTERIZATION OF Di-DNP-lysine” submitted for the award of degree of Masters of Science to Central University of Himachal Pradesh, Academic Block – Shahpur, Distt. – Kangra, Himachal Pradesh – 176215, India was carried out by NIRBHAY THAKUR (CUHP20CCS22) under my guidance and supervision. This work is original and has not been submitted for any other degree or diploma of any other university or institute. The assistance and help received during the course of investigation has been duly acknowledged.

NIRBHAY THAKUR
(CUHP20CCS22)

DATE : 11 /07 / 2022

SUPERVISOR 11-7-22
DR. RAJENDER KUMAR

EXTERNAL EXAMINER

विभागाध्यक्ष, HEAD OF DEPARTMENT विभाग 11-7-22

Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

Central University of Himachal Pradesh

अस्थायी शैक्षणिक ब्लॉक / Temporary Academic Block

शाहपुर, कांगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)-176208



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BLOCK SHAHPUR, DISTT.-KANGRA, HIMACHAL PRADESH –
176215, INDIA

DEPARTMENT OF CHEMISTRY AND CHEMICAL SCIENCE
SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

CERTIFICATE

This is to certify that the work embodied in this thesis entitled "SYNTHESIS OF 2, 4-DINITROPHENYL CYSTEINE AND ITS CHARACTERIZATION" submitted for the award of the degree of Masters of Science to Central University of Himachal Pradesh, Academic Block – Shahpur, Distt – Kangra, Himachal Pradesh –176215, India was carried out by Miss. Samriti Sharma (CUHP20CCS23) under my guidance and supervision. This work is original and has not been submitted for any other degree or diploma of any other university or institute. The assistance and help received during the course of investigation have been duly acknowledged.

Samriti
Samriti Sharma
(CUHP20CCS23)

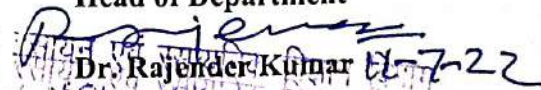
Date: 11/07/2022


Supervisor 11-7-22

Dr. Rajender Kumar

External Examiner

Head of Department


Dr. Rajender Kumar 11-7-22
विभागाध्यक्ष, विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश
Central University of Himachal Pradesh
Shahpur, Kangra (H.P.)
176215



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Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP)-176215

Department of Chemistry & Chemical Science
School of Physical and Material Science
CERTIFICATE

Dated: 11-07-2022

This is to certify that **SANJEEV KUMAR**, student of **M.Sc. Chemistry (Sem. IV)**, Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed his project work (CCS 565) entitled “ **Analysing the Crystallinity and Surface Composition of Activated Carbon Prepared From *Lantana camara* stem**” for the award of the degree of **Master of Science** in Chemistry & Chemical Science under my supervision.

Student Name

SANJEEV KUMAR
(CUHP20CCS24)

Supervisor Name

Dr. Neeraj Gupta

External Examiner

Head of the Department 11-7-22



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Dharamshala (HP)-176215

Department of Chemistry & Chemical Science
School of Physical and Material Science
CERTIFICATE

Dated:

This is to certify that **Miss Shivani Bharti**, student of **M.Sc. Chemistry (Sem. IV)**, Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed her project work (CCS 565) entitled “(A Review) Prussian Blue Nanoparticle and Its Application in Wastewater Treatment and Dye Degradation” for the award of the degree of **Master of Science in Chemistry & Chemical Science** under my supervision.

Shivani Bharti
Student Name
Shivani Bharti
(CUHP20CCS25)

Pramod Kumar
Supervisor Name
Dr. Pramod Kumar

[Signature]
Head of the Department 11-7-22

[Signature]
External Examiner



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Central University of Himachal Pradesh
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Dharamshala (HP)-176215

CERTIFICATE

Dated: 11-07-2022

Department of Chemistry & Chemical Sciences
School of Material and Physical Sciences
Central University of Himachal Pradesh, Dharamshala
[Established under the Central Universities Act 2009]
Dharamshala, District Kangra,
Himachal Pradesh [India]-176215

This is to certify that the dissertation entitled “Studies on Copper Binding Proteins of *Chlamydia pneumoniae*” submitted by Shivani Thakur CUHP20CCS26 D/O Mr. Ajit Singh Thakur to the Central University of Himachal Pradesh, Dharamshala in partial fulfillment of the requirements for the award of the degree of Master of Science in Chemistry and Chemical Sciences has been approved by the committee after an oral examination of the student in collaboration with an External Examiner.

Dr. Manish Kumar
Supervisor

(Shivani Thakur)
Dr.
External Examiner

विभागाध्यक्ष, रसायन विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक ब्लॉक / Temporary Academic Block
शाहपुर काँगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)-176206

CERTIFICATE

This is to certify that the work embodied in this thesis entitled "SYNTHESIS AND CHARACTERIZATION OF CYANURIC CHLORIDE DERIVATIVE USING L-CYSTEINE" submitted for the award of the degree of Masters of Science to the Central University of Himachal Pradesh, Shahpur Campus, Distt. – Kangra, Himachal Pradesh – 176206, India was carried out by Miss TANU SHARMA (CUHP20CCS29) under my guidance and supervision. This work is original and has not been submitted for any other degree or diploma of any other university or institute. The assistance and help received during the investigation have been duly acknowledged.

Tanu Sharma

TANU SHARMA

(CUHP20CCS29)

Date:- 11/7/2022

Rajender
SUPERVISOR 11-7-22
DR. RAJENDER KUMAR

Rajender
EXTERNAL EXAMINER

Rajender
Dr. Rajender Kumar 11-7-22
विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
(Head, Department of Chemistry)
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic Block
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Shahpur Campus , Distt. Kangra (HP) - 176206
Website: www.cuhimachal.ac.in.



School of Physical and Material Sciences, Department of Chemistry & Chemical Science

CERTIFICATE

This is to certify that **Vaishali**, student of M.Sc. Chemistry (Sem. IV), Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed her project work (CCS 565) entitled “Analysis of crystallinity and elemental composition of Activated Charcoal prepared from seeds of *phoenix dactylifera*” for the award of the degree of Master of Science in Chemistry & Chemical Science under my supervision.

Vaishali
Student Name
Vaishali
(CUHP20CCS30)


Supervisor Name
Dr. Neeraj Gupta


External Examiner


Head,

Department of Chemistry & Chemical Science



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

Central University of Himachal Pradesh

(Established under Central Universities Act 2009)
Shahpur Campus, Distt Kangra, Himachal Pradesh

CERTIFICATE

Department of Chemistry and Chemical Science

School of Physical and material sciences

It is certified that Vijay Kumar, M.Sc. Chemistry student of Department of Chemistry and Chemical Science, Central University of Himachal Pradesh completed his project work entitled "A Review on structural and optical analysis of CdO and some metals doped-CdO Nanoparticles" under my supervision. His work is authentic and is not published anywhere.

Place: CUHP, Shahpur Campus.

Date: 11.10.2022

Vijay Kumar

VIJAY KUMAR

(Student)

Shiwani Berry

Dr. SHIWANI BERRY

(Assistant professor)

(Project Supervisor)

Rajender Kumar
Dr. RAJENDER KUMAR 11-7-22

(Head of Department)

Department of Chemistry and Chemical Science
विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान

Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

Central University of Himachal Pradesh

अस्थायी/स्थायी अकादमिक ब्लॉक / Temporary Academic Block

शाहपुर कैंपस, कांगड़ा (H.P.)-176208



Central University of Himachal Pradesh

(Established under Central Universities Act 2009)
, Shahpur, Distt. Kangra, Himachal Pradesh- 176206

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Vinay Sharma, M.Sc. student of Department of Chemistry and Chemical science, Central University of Himachal Pradesh completed his project work entitled “**A Brief Study on Biological and Catalytic Activities of Schiff's Base Complexes: A Review**” under my supervision. His work is authentic and is not published anywhere.

Vinay Sharma
(Student)

Dr. Shiwani Berry
(Project Supervisor)

Assistant professor

Department of Chemistry and
Science

Central University of Himachal Pradesh
Shahpur

Dr. Rajender Kumar 11-7-22

Head of Department,

Department of Chemistry and Chemical
विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Chemical Science
Head, Dept. of Chemistry & Chemical Sciences
Central University of Himachal Pradesh,
हिमाचल प्रदेश Shahpur

Central University of Himachal Pradesh

अस्थायी शैक्षणिक ब्लॉक / Temporary Academic Block
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Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP)-176215

Department of Chemistry & Chemical Science
School of Physical and Material Science
CERTIFICATE

Dated: 11.7.2022

This is to certify that **Vishal Thakur**, student of M.Sc. Chemistry (Sem. IV), Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed his project work (CCS 565) entitled "Green Synthesis of copper oxide nanoparticles from Seabuckthorn" for the award of the degree of Master of Science in Chemistry & Chemical Science under my supervision.

Vishal Thakur

Student Name

**Vishal Thakur
(CUHP20CCS33)**

Manish Kumar

Supervisor Name

Dr. Manish Kumar

[Signature]
External Examiner

[Signature]
विभागाध्यक्ष, रसायन एवं रसायन विज्ञान विभाग
Head of the Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic Block
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Central University of Himachal Pradesh

(Established under Central Universities Act 2009)

Dharamshala (HP)-176215

Department of Chemistry & Chemical Science

School of Physical and Material Science

CERTIFICATE

Dated: 11-07-22

This is to certify that **SUSHEEL**, student of **M.Sc. Chemistry (Sem. IV)**, Department of Chemistry and Chemical Science, Central University of Himachal Pradesh has completed his project work (**CCS 565**) entitled "Probing the surface of Activated Carbon derived from Pine Needles through HR-TEM & FT-IR Analysis" for the award of the degree of **Master of Science in Chemistry & Chemical Science** under my supervision.

Student Name

SUSHEEL

(CUHP20CCS28)

Supervisor Name

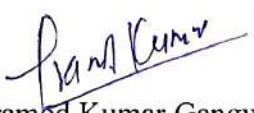
Dr. Neeraj Gupta

External Examiner

Head of the Department 11-7-22

Certificate

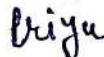
This is to certify that Ms. PRIYA has satisfactorily completed the following project entitled, " **Mesoporous Silica Nanoparticles and its biomedical applications**" as a part of her M.Sc. Program in the year 2018-20 laid down in the university, (Under Section 28(1)(b), 28(1)(c) and 28(1)(g) of the Central Universities Act 2009) (Approved by the Executive Council and the Academic Council in their meetings held on 13th February, 2011 and 11th February, 2011 respectively) of ordinance – 31, Central University of Himachal Pradesh, Kangra-176206, India.


Dr. Pramod Kumar Gangwar
Supervisor



Dr. Pramod Kumar Gangwar
Assistant Professor
School of Physical & Material Sciences
Department of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
KANGRA-176206, HIMACHAL PRADESH

Priya
Candidate




Dr. Rajender Kumar
Head of Department 27/8/2020

Department of Chemistry and Chemical Sciences
Central University of Himachal Pradesh

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh

अस्थायी शैक्षणिक खंड / Temporary Academic Block
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Kangra – 176206, India



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Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP) - 176215

CERTIFICATE

*Department of Chemistry and Chemical Sciences
School of Physical and Material Sciences*

This is to certify that *Aishwarya, M.Sc. Chemistry (Sem IV)*, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed her project work (CCS 565) entitled "*Synthetic methods, mechanism and applications of green synthesized nanomaterials: A review*" for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.

Aishwarya

Aishwarya
Roll No. CUHP18CCS01

Manish
25/08/2020

Dr. Manish Kumar
(Project Supervisor)

Rajender
27/8/2020

Dr. Rajender Kumar
(Head, Department of Chemistry)

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic Block
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अस्थायी शैक्षणिक खण्ड, शाहपुर, जिला काँगड़ा, हिमाचल प्रदेश - 176206

Temporary Academic Block, Shahpur, Distt. Kangra (HP) - 176206

SCHOOL OF MATERIAL AND PHYSICAL SCIENCES

CERTIFICATE

It is certified that Aradhana Choudhary, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "Review of synthesis of 2,3-Disubstituted indole" under my supervision.

Aradhana

ARADHANA CHOUDHARY

(CUHP18CCS03)

Neeraj Gupta
14/08/2020

Dr. NEERAJ GUPTA

(Assistant Professor)

Rajender Kumar

Dr. RAJENDER KUMAR 27/8/2020

(Head, Department of Chemistry and Chemical Sciences)

विभागाध्यक्ष रसायन एवं रसायनिक विज्ञान विभाग

Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

Central University of Himachal Pradesh

अस्थायी शैक्षणिक खण्ड / Temporary Academic Block

शाहपुर, काँगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.) - 176206



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh

(Established under Central Universities Act 2009)

अस्थायी शैक्षणिक खण्ड, शाहपुर, जिला कांगड़ा, हिमाचल प्रदेश - 176206
Temporary Academic Block, Shahpur, Distt. Kangra (HP) - 176206

SCHOOL OF MATERIAL AND PHYSICAL SCIENCES

CERTIFICATE

It is certified that Darshan Thakur, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed his project report entitled "Synthetic strategies for the synthesis of 3-substituted indoles and their derivatives" under my supervision.

DARSHAN THAKUR

(CUHP18CCS04)

14/08/2020

Dr. NEERAJ GUPTA

(Assistant Professor)

Dr. RAJENDER KUMAR

(Head, Department of Chemistry and Chemical Sciences)

विभागाध्यक्ष, रसायन एवं शैक्षणिक विज्ञान विभाग

Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

Central University of Himachal Pradesh

अस्थायी शैक्षणिक खंड / Temporary Academic Block

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हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh

(Established under Central University Act 2009)

TAB Shahpur, Distt. Kangra, Himachal Pradesh- 176206

School of Physical and Material Science

Certificate


It is certified that **Himanshi** M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed his project work entitled "**Metallic nanoparticles and its application in target drug delivery and light activated therapy**" over Dharamshala, Himachal Pradesh under my supervision. Her work is authentic and is not published anywhere.

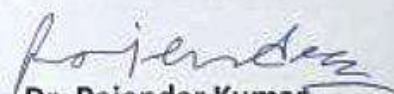

Himanshi

(student)


Dr. Pramod Gangwar

(Project supervisor)


 Dr. Pramod Kumar Gangwar
 Assistant Professor
 School of Physical & Material Sciences
 Department of Chemistry & Chemical Sciences
 Central University of Himachal Pradesh
 KANGRA-176215, HIMACHAL PRADESH


Dr. Rajender Kumar

(HOD, Chemistry)

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
 Head, Dept. of Chemistry & Chemical Sciences
 हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
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हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
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अस्थायी शैक्षणिक खण्ड, शाहपुर, जिला काँगड़ा, हिमाचल प्रदेश - 176206
Temporary Academic Block, Shahpur, Distt. Kangra (HP) - 176206
SCHOOL OF MATERIAL AND PHYSICAL SCIENCES

CERTIFICATE

It is certified that Kritika, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "Review: Synthesis of 4-Substituted Coumarin derivatives" under my supervision.

Kritika
KRITIKA

(CUHP18CCS07)

Neeraj Gupta
13/08/2020

Dr. NEERAJ GUPTA

(Assistant Professor)

Rajender Kumar
Dr. RAJENDER KUMAR

(Head, Department of Chemistry and Chemical Sciences)

Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

Central University of Himachal Pradesh

अस्थायी शैक्षणिक खण्ड / Temporary Academic Block

शाहपुर, काँगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)-176206

Central University of Himachal Pradesh

(Established under Central Universities Act 2009)

TAB, Shahpur, Distt. Kangra, Himachal Pradesh- 176206

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES



Certificate

It is certified that Neha, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "**Review: Strategies for the synthesis of 3-Substituted coumarin derivatives**" under my supervision. Her work is authentic and is not published anywhere.

Neha

Neha
(Student)

Neeraj Gupta
27/08/2020

Dr. Neeraj Gupta
(Project Supervisor)

Rajendra Kumar
Dr. Rajendra Kumar
(In-Charge, Chemistry)

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic Block
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CENTRAL UNIVERSITY OF HIMACHAL PRADESH

(ESTABLISHED UNDER CENTRAL UNIVERSITY ACT 2009)

TAB SHAHPUR, DISTT. KANGRA, HIMACHAL PRADESH

School of Physical and Material Sciences

Certificate

This is to certify that the work contained in the dissertation entitled **Polydopamine nanoparticles for cancer treatment: current insights** submitted by **Nidhi (Roll No CUHP18CCS10)** for the award of the degree of Master of Sciences to the Central University of Himachal Pradesh. This project work carried out by her under my direct supervision and guidance. I considered that her work has reached the standards and fulfilling the requirements of the rules and regulations relating to the nature of the degree. This content has not been submitted for the award of any other degree or diploma in this or any other university.

Nidhi

Nidhi

(Student)

Rajender Kumar
Dr. Rajender Kumar 27/8/2020

Project Supervisor & Head
Of Chemistry and Chemical

Rajender Kumar
विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic Block
शाहपुर, काँगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)-176201



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

Central University of Himachal Pradesh

(Established under Central Universities Act 2009)

TAB, Shahpur, Distt. Kangra, Himachal Pradesh-176206

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Ms. **Pallavi**, M.Sc. student of department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "**Polycyclic aromatic hydrocarbon in soil, coal- A Review**" under my supervision. Her work is authentic and is not published anywhere.

Pallavi

(Student)

Dr. Shiwani Berry

(Project Supervisor)

Dr. Rajendar Kumar

(HOD Chemistry)

21/8/2020

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
एन.ए.सी. शैक्षणिक ब्लॉक
N.A.S.I. Educational Block
हिमाचल प्रदेश (हि.प्र.), शाहपुर, कांगड़ा (हि.प्र.)-176206
Shahpur, Kangra (H.P.)-176206



CENTRAL UNIVERSITY OF HIMACHAL PRADESH

(ESTABLISHED UNDER CENTRAL UNIVERSITY ACT 2009)

TAB SHAHPUR, DISTT. KANGRA, HIMACHAL PRADESH

School of Physical and Material Sciences

Certificate

This is to certify that the work contained in the dissertation entitled "Metallic Nanoparticles and Their Applications in Catalysis" submitted by Pankaj Kumar (Roll no. CUHP18CCS12) in order to complete the degree of Master of Sciences to the Central University of Himachal Pradesh. This project work is accomplished by him under my direct supervision & guidance. I assure that his work is in accordance with the rules and regulations. This content has not been submitted to this or any other university for the award of any other degree.

Pankaj K.

Pankaj Kumar

(Student)

Pramod Kumar

Dr. Pramod Kumar Gangwar

(Project Supervisor)

Rajender Kumar

Dr. Rajender Kumar

Head of Department of Chemistry and Chemical Sciences

Central University of Himachal Pradesh

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग

Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh

अस्थायी शैक्षणिक खंड / Temporary Academic Block

शहापुर, कांगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)-176206



Dr. Pramod Kumar Gangwar
Assistant Professor
School of Physical & Material Sciences
Department of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
KANGRA-176215, HIMACHAL PRADESH



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TAB, Shahpur, Distt. Kangra, Himachal Pradesh-176206

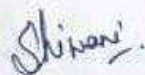
SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

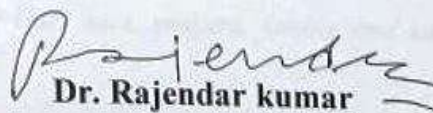
It is certified that Ms. **Priyanka**, M.Sc. student of department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "**Biological Significance of Nitrogen and Sulphur containing Heterocycles- A Review**" under my supervision. Her work is authentic and is not published anywhere.


Priyanka

(Student)


Dr. Shiwani Berry

(Project Supervisor)


Dr. Rajendar Kumar

(Head of Chemistry & Chemical Sciences)



हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
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Dharamshala (HP) - 176215

CERTIFICATE

*Department of Chemistry and Chemical Sciences
School of Physical and Material Sciences*

This is to certify that *Priyanka Rana, M.Sc. Chemistry (Sem IV)*, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed her project work (CCS 565) entitled "*Thermodynamics and role of kinetics in synthesis of semiconductor nanomaterials*" for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.

Priyanka Rana
Priyanka Rana
Roll No. CUHP18CCS15

Manish
19/08/2020
Dr. Manish Kumar
(Project Supervisor)

Rajender
Dr. Rajender Kumar
(Head, Department of Chemistry)

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक ब्लॉक / Temporary Academic Block
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Dharamshala (HP) - 176215

CERTIFICATE

*Department of Chemistry and Chemical Sciences
School of Physical and Material Sciences*

This is to certify that *Sahil Rana, M.Sc. Chemistry (Sem IV)*, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed his project work (CCS 565) entitled “*Metal Based Green Synthesized Nanomaterials*” for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.

Sahil Rana
Sahil Rana

Roll No. CUHP18CCS17

Manish
18/08/2022
Dr. Manish Kumar
(Project Supervisor)

Rajender Kumar
Dr. Rajender Kumar

(Head, Department of Chemistry)

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
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TAB SHAHPUR, DISTT. KANGRA, HIMACHAL PRADESH

School of Physical and Material Sciences

Certificate

This is to certify that the work contained in the dissertation entitled "Poly(dopamine) based Inorganic Nanoparticles and their Antimicrobial properties: A Review" submitted by Shavnam Kumari (Roll No CUHP18CCS18) for the award of the degree of Master of Sciences to the Central University of Himachal Pradesh. This project work carried out by her under my direct supervision and guidance. I considered that her work has reached the standards and fulfilling the requirements of the rules and regulations relating to the nature of the degree. This content has not been submitted for the award of any other degree or diploma in this or any other university.

Shavnam

Shavnam Kumari

(Student)

Rajender Kumar

Dr. Rajender Kumar 27/08/2022

Project Supervisor & Head
Of Chemistry and Chemical

Rajender Kumar

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग

Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

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SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Ms. **Shikha Jaswal**, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "A review on synthesis and pharmaceutical activities of thieno[2,3-b]pyridines" under my supervision. Her work is authentic and is not published anywhere.

Shikha Jaswal

Shikha Jaswal

(Student)

Shiwani

Dr. Shiwani Berry

(Project Supervisor)

Rajender Kumar

Dr. Rajender Kumar

27/8/2020

(Head of the Department,

Chemistry and Chemical Sciences)

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग

Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

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Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP) - 176215

CERTIFICATE

*Department of Chemistry and Chemical Sciences
School of Physical and Material Sciences*

This is to certify that *Shikha Rani, M.Sc. Chemistry (Sem IV)*, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed her project work (CCS 565) entitled "*Insight into the Interactions between Drug and Amino Acids –A Review*" for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.

Shikha
Shikha Rani
Roll No. CUHP18CCS20

Manish
24/08/2020
Dr. Manish Kumar
(Project Supervisor)

Rajender
27/8/2020
Dr. Rajender Kumar
(Head, Department of Chemistry)

हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh

पश्चिमी हिमालय, धरमशाला - 176215 | Page: Block

फोन: 0197-2631111, 2631112 | Fax: 0197-2631113 | Email: cuhp@cuhp.ac.in



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Central University of Himachal Pradesh

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TAB Shahpur, Distt. Kangra, Himachal Pradesh- 176206

SCHOOL OF PHYSICAL AND MATERIAL SCIENCES

Certificate

It is certified that Ms. **Shivani**, M.Sc. student of department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed her project work entitled "**Applications of Metallic Nanoparticles in Cancer Treatment – A Review**" under my supervision. Her work is authentic and is not published anywhere.

Shivani
Shivani

(Student)

Shivani

Dr. Shiwani Berry

(Project Supervisor)

Rajender Kumar

Dr. Rajender Kumar 27/8/2020

विभागाध्यक्ष, रसायन (HOD, Chemistry) विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Academic Block
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Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP) - 176215

CERTIFICATE

Department of Chemistry and Chemical Sciences
School of Physical and Material Sciences

This is to certify that **Shivani Verma, M.Sc. Chemistry (Sem IV)**, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed his project work (CCS 565) entitled "**Polydopamine based Nanoparticle for Water Remediation/Disinfection**" for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.

Shivani
Shivani Verma
RollNo. CUHP18CCS23

Rajendra
Dr. Rajender Kumar 27/8/2020

(Project Supervisor /Head, Department of Chemistry)

Rajendra
27/8/2020

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh

(Established under Central University Act 2009)

TAB Shahpur, Distt. Kangra, Himachal Pradesh- 176206

School of Physical and Material Science

Certificate

It is certified that *Sunil Kumar* M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed his project work entitled "*Phosphor Nanoparticles Application in Biomedical*" over Dharamshala, Himachal Pradesh under my supervision. His work is authentic and is not published anywhere.


Dr. Pramod Kumar Gangwar

(Project supervisor)



Dr. Pramod Kumar Gangwar
Assistant Professor
School of Physical & Material Sciences
Department of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
KANGRA-176215, HIMACHAL PRADESH


Sunil Kumar

(Student)


Dr. Rajender Kumar

(Head of department, Chemistry)

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh

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हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh

SYNTHESIS OF 2-SUBSTITUTE QUINOLINES-A REVIEW

Project report

Submitted in fulfillment of the partial requirements for award of degree of

M.Sc. CHEMISTRY

SUBMITTED BY

Swati Swati

Roll no. CUHP18CCS25

SUPERVISOR

Dr. Neeraj Gupta *N Gupta* 24/08/2020

Rajender Kumar
HEAD OF DEPARTMENT 27/08/2020

Dr. Rajender Kumar
विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक ब्लॉक / Temporary Academic Block
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Central University of Himachal Pradesh

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TAB Shahpur, Distt. Kangra, Himachal Pradesh- 176206

School of Physical and Material Science

Certificate


It is certified that **Tanjin Samtan** M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed his project work entitled "**Silica and ORMOSIL Nanoparticles Application in Drug delivery**" over Dharamshala, Himachal Pradesh under my supervision. His work is authentic and is not published anywhere.

Tanjin Samtan

(student)

Dr. Pramod Gangwar

(Project supervisor)

 **Dr. Pramod Kumar Gangwar**
Assistant Professor
School of Physical & Material Sciences
Department of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
T.A.H.C.P.A.-176215, HIMACHAL PRADESH

Dr. Rajender Kumar

(HOD, Chemistry)

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh

अस्थायी शैक्षणिक ब्लॉक / Academic Block
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Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Dharamshala (HP) - 176215

CERTIFICATE

Department of Chemistry and Chemical Sciences
School of Physical and Material Sciences

This is to certify that *Vaishali Devi, M.Sc. Chemistry (Sem. IV)*, Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh has completed her project work (CCS 565) entitled "*Effect of Temperature on the morphology of semiconductor nanomaterials*" for the award of the degree of Master of Science in Chemistry & Chemical Sciences under my supervision.

Vaishali Devi
Vaishali Devi
Roll No. CUHP18CCS27

Manish Kumar
26/08/2020
Dr. Manish Kumar
(Project Supervisor)

Rajender Kumar
Dr. Rajender Kumar
(Head, Department of Chemistry)

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic Block
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(Established under Central Universities Act 2009)
अस्थाई शैक्षणिक खण्ड, शाहपुर, जिला कांगड़ा, हिमाचल प्रदेश - 176206
Temporary Academic Block, Shahpur, Distt. Kangra (HP) - 176206
SCHOOL OF MATERIAL AND PHYSICAL SCIENCES

CERTIFICATE

It is certified that Vivek panjla, M.Sc. student of Department of Chemistry and Chemical Sciences, Central University of Himachal Pradesh completed his project work entitled "*Synthesis of 2-Substituted Indole Derivatives - A Review*" under my supervision.

Vivek

VIVEK PANJLA

(CUHP18CCS28)

Neeraj Gupta
18/08/2020

Dr. NEERAJ GUPTA

(Assistant Professor)

Rajender Kumar
Dr. RAJENDER KUMAR

(Head, Department of Chemistry and Chemical Sciences)

Head, Dept. of Chemistry & Chemical Sciences

हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

Central University of Himachal Pradesh

अस्थाई शैक्षणिक खण्ड

Academic Block

शाहपुर, कांगड़ा (हिमाचल प्रदेश)

(I.P.)-176206



CENTRAL UNIVERSITY OF HIMACHAL PRADESH
(ESTABLISHED UNDER CENTRAL UNIVERSITY ACT 2009)
TAB SHAHPUR, DISTT. KANGRA, HIMACHAL PRADESH

School of Physical and Material Sciences

Certificate

This is to certify that the work contained in the dissertation entitled "Development of Polydopamine : For Antifouling and Antibiofouling Coatings", submitted by Yaksha Verma (Roll No. CUHP18CCS29) for the award of the degree of Master of Sciences to the Central University of Himachal Pradesh. This project work carried out by her under my direct supervision and guidance. I considered that her work has reached the standards and fulfilling the requirements of the rules and regulations relating to the nature of the degree. This content has not been submitted for the award of any other degree or diploma in this or any other university.

Yaksha Verma

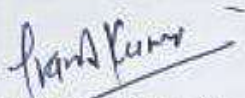
Yaksha Verma
(Student)

Rajender Kumar
Dr. Rajender Kumar

Project Supervisor & Head
Of Chemistry and Chemical
Sciences

DECLARATION

It is certified that the project entitled "Quantum Dots and Its Applications and Photodynamic Therapy" has been carried out under the supervision of Dr. Parmod Kumar Gangwar. To the best of our knowledge and belief, all information derived from the existing literature has been indicated in the body of the thesis at the appropriate places, providing the source of information. It is further certified that the present work has not submitted elsewhere for any other degree.



Dr. Parmod Kumar Gangwar

(Supervisor)



Dr. Parmod Kumar Gangwar
Assistant Professor
School of Physical & Material Sciences
Department of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
KANGRA-176215, HIMACHAL PRADESH



Sahil Kumar

(Student)

Dr. Rajender Kumar

Head, Department of Chemistry and Chemical Sciences

CENTRAL UNIVERSITY OF HIMACHAL PRADESH

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic Block
शाहपुर, कांगड़ा (हि.प्र.) / Shahpur, Kangra (H.P.)-176206

DECLARATION

Certificate

This is to certify that Ms. PRIYA has satisfactorily completed the following project entitled, " **Mesoporous Silica Nanoparticles and its biomedical applications**" as a part of her M.Sc. Program in the year 2018-20 laid down in the university, (Under Section 28(1)(b), 28(1)(c) and 28(1)(g) of the Central Universities Act 2009) (Approved by the Executive Council and the Academic Council in their meetings held on 13th February, 2011 and 11th February, 2011 respectively) of ordinance – 31, Central University of Himachal Pradesh, Kangra-176206, India.




Dr. Pramod Kumar Gangwar
Supervisor

Priya
Candidate
Priya



Dr. Pramod Kumar Gangwar
Assistant Professor
School of Physical & Material Sciences
Department of Chemistry & Chemical Sciences
Central University of Himachal Pradesh
KANGRA-176215, HIMACHAL PRADESH



Dr. Rajender Kumar
Head of Department

Department of Chemistry and Chemical Sciences
Central University of Himachal Pradesh

विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh
अस्थायी शैक्षणिक खंड / Temporary Academic Block
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Kangra – 176206, India



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TAB SHAHPUR, DISTT. KANGRA, HIMACHAL PRADESH

School of Physical and Material Sciences

Certificate

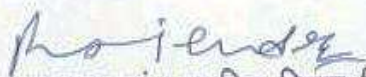
This is to certify that the work contained in the dissertation entitled "Polydopamine based Nanoparticles for pesticides delivery" submitted by Diksha Kumari (Roll No CUHP18CCS05) for the award of the degree of Master of Sciences to the Central University of Himachal Pradesh. This project work carried out by her under my direct supervision and guidance. I considered that her work has reached the standards and fulfilling the requirements of the rules and regulations relating to the nature of the degree. This content has not been submitted for the award of any other degree or diploma in this or any other university.


Diksha Kumari

(Student)


Dr. Rajender Kumar 27/8/2020

Project Supervisor & Head
Of Chemistry and Chemical
Sciences


विभागाध्यक्ष, रसायन एवं रसायनिक विज्ञान विभाग
Head, Dept. of Chemistry & Chemical Sciences
हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय
Central University of Himachal Pradesh
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