

## Upendra Sharma, PhD (Organic Chemistry), FRSC

C-H Activation & Phytochemistry Laboratory

Chemical Technology Division

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### RESEARCH FOCUS

**Phytochemical Investigation of Medicinal Plants:** Our group mainly focuses on scientific validation of traditional knowledge on plants where we isolate marker compounds, use them as standards for quality control, and evaluate the respective biological activities. Developing innovative approaches, including a) Replacing traditionally used organic solvents for targeted extraction with eco-friendly and reusable **Natural Deep Eutectic Solvents (NADES)**; b) Developing a **Chemomatrix** Data Base for quality assurance of medicinal plants & c) **Biochemomatrix** Approach for the identification of putative marker compounds, to achieve these targets is the main goal.

**Synthesis of Bioactive Molecules via C-H Activation:** One of the aims of our group is to develop green and efficient catalytic methods for synthesizing bioactive molecules *via* C-H activation/functionalization. Mainly we focus on the functionalization of *N*-heterocycles by employing novel catalytic techniques with an in-depth study of the reaction mechanism. Recently we have initiated work on atroposelective C-H activation.

### PROFESSIONAL EXPERIENCE

September 2021 to present	Principal Scientist, CSIR-IHBT, Palampur, India
September 2017 to August 2021	Senior Scientist, CSIR-IHBT, Palampur, India
September 2014 to August 2017	Scientist, CSIR-IHBT, Palampur, India
March 2014 to August 2014	Postdoc Fellow, KAIST, South Korea
May 2013 to March 2014	Young Scientist-DST Fast Track, IIT Bombay, India
November 2012 to May 2013	Research Assistant, IIT Bombay, India

### EDUCATION

2012	Ph.D. (Organic Chemistry)	Awarded	GNDU, Amritsar/CSIR-IHBT, Palampur
2005	M.Sc. (Chemistry)	1 <sup>st</sup> Division	DAV Collage Jalandhar, GNDU, Amritsar
2002	B.Sc. (Non-Medical)	1 <sup>st</sup> Division	Himachal Pradesh University

### AWARDS AND FELLOWSHIPS

Fellow of Royal Society Chemistry (FRSC), London, UK.  
Life member of the Chemical Society of India  
Life Member of the Catalysis Society of India  
Life member of the Analytical Society of Analytical Scientists  
One Year Advance Promotion *i.e.*, Merit Promotion from Scientist to Senior Scientist  
Early Career Advisory Board of *Asian Journal of Organic Chemistry* (2020-) and *Science of Synthesis* (2021-)  
Manjushree Pal Memorial Award from Ethanopharmacology Society of India, Kolkata (2017)  
Thieme Chemistry Journal Award (2016)  
D S Kothari Postdoc Fellowship (2012)  
Fast Track Young Scientist project for three years (2012)  
Postdoc Fellowship KAIST, South Korea (2014)  
CSIR Junior/Senior Research Fellowship (2007, 2009)

## HUMAN RESOURCE DEVELOPMENT

11 students awarded PhD degrees; 1 submitted thesis.

Six Research Associates, twenty-one project assistants, and twenty-four MSc trainees worked in the lab.

## INSTITUTIONAL RESPONSIBILITIES

Member, Technical and Purchase Committee (2018-)

Member, Students selection committee in Chemical Sciences, CSIR-IHBT

DAC Member, Ph.D. students enrolled in AcSIR, Ghaziabad-201002, India/CSIR-IHBT, Palampur

Member, Institute Publication Committee

Member, Institute Lab Safety and Health Committee

## PROJECT HANDLED: 25

Completed: 17

Current: 08

External Funded: 06

## RESEARCH PUBLICATION: 176

Patents: 3

Citation: >5324

h-index: 37

i-10 index: 112

Book Chapter: 11

Popular Hindi Article: 06

## REPRESENTATIVE PUBLICATIONS IN LAST THREE YEARS

Natural Product Chemistry	Organic Synthesis
Trends in Chem., 2024; accepted.	Coord Chem Rev. 2024; 499: 215453.
J Ethanopharmacol. 2024; 320: 117385.	Asian J Org Chem. 2024; 13: e202300536.
Fitoterapia, 2024: doi.org/10.1016/j.fitote.2024.105925.	Synthesis 2024, 56; 751.
Phytochem Anal. 2024: accepted.	Mol. Catal. 2023; 551, 113597
Microchem J. 2024; 199: 110129.	Org Lett. 2023; 25: 2627.
Nat Prod Res. 2024; 38: 440.	Chem Commun. 2023; 59: 9646.
Steroids 2023, 199: 109293.	Chem Euro J., 2023, 29: e202301360.
Sustain Chem Pharm. 2023; 36: 101305.	Chem Commun. 2023; 59: 9288.
Eur J Med Chem. 2023; 260: 115748.	J Org Chem. 2023; 88: 2314.
J Ethanopharmacol. 2023; 310: 116389.	Chem Commun. 2022; 58: 13151.
J Cleaner Prod. 2023; 356: 135639.	Adv Synth Catal. 2022, 364, 897.
Ind Crops Prod. 2023; 202: 117040.	J Org Chem. 2022; 87: 9069.
J Mol Struct. 2023; 1292: 136077.	Catal Rev. 2022; 64: 716.
Biomass Convers Biorefin. 2023; 13: 311.	Chem Commun. 2021; 57: 11613.
Int J Bio Macromol. 2023; 234: 123601.	J Org Chem. 2021; 86: 13754.
Food Res Int. 2023; 164: 112434.	React Chem Eng. 2021; 6: 2087.
Pest Manag Sci. 2023; 79: 1538.	Org Lett. 2020; 22: 305.
Sep. Purif Technol. 2022; 294: 121105.	ACS Sustain Chem Eng. 2020; 8: 12902.

