

# Robin Joshi, PhD

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ResearchGate score: 88.18 and H-index: 20

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## PROFILE

- Resourceful and dedicated analytical chemist with PhD degree in “**Characterization of Secondary Metabolites of Tea (*Camellia sinensis*) in Kangra and Development of Value Added Products**” supervised by **Dr Ashu Gulati**. Throughout my more than 16 years of research experience. I've established myself as a passionate researcher in the fields isolation, characterisation, natural products, phytochemistry, flavour and fragrances, sensory analysis, metabolomics, proteomics, volatilomics and published my research findings in highly renowned peer-reviewed journals ranked Q1.
- More than seven years of postdoctoral experience in proteomics, volatilomics, flavoromics or flavour chemistry, metabolomics with chemetric analysis with horticulture crops such as *Camellia sinensis*, *Malus domestica*, *Malus baccata*, *Citrus medica*, *Citrus maxima*, *Cordia myxa*, *Dendrocalamus hamiltonii* and millets
- Having sound background and experience in chromatographic instruments including HPLC (Waters, Agilent, Shimadzu), UPLC (Waters), UPLC-MS/MS (Waters), UHPLC-DAD-QTOF-IMS (Agilent), nano-LC-MS/MS (Agilent), MALDI-TOF-TOF-MS (Bruker), GC-MS (Shimadzu).
- Strong understanding of spectrometric assays, separation techniques; ultra-sonication, Soxhlet, maceration and antioxidant qualitative and quantitative assays.
- Rich experience in scientific writing, publishing and softwares interpretation: Microsoft office (word, excel, and presentation), Statistical software: MetaboAnalyst, MS DIAL, XC-MS, MPP, SpectruMill, PAST, GRAPHPAD PRISM, MeV.
- Computer skills: Linux/Windows.

## ACADEMIC QUALIFICATION

- **Ph.D. in Sciences (Specialization: Food, analytical and natural products), Jan 2011-August 2015**  
Council of Scientific and Industrial Research (CSIR), Institute of Himalayan Bioresource Technology Academy of Scientific and Industrial Research (AcSIR), Ghaziabad, India.
- **M.Sc. Chemistry, 2004-2006**  
Chanakya Mahavidyalaya, MP  
Baraktullah University, Bhopal, H.P. India
- **B.Sc. (Physics, Chemistry and Mathematics), 2000-2003**  
Govt. PG College Chamba, Himachal Pradesh University, HP
- **12<sup>th</sup> Standard (Physics, Chemistry, Mathematics and English language) (April 1999-2000)**  
Govt. Boys Senior Secondary School, Chamba, HP, India
- **10<sup>th</sup> Standard (Science, Mathematics, Art, Hindi, Sanskrit, Social Studies and English language) (April 1997-1998)**  
Govt. High School, Sarol, Chamba, HP, India

## RESEARCH INTERESTS

- Metabolomics and flavouromics using mass spectrometry with chemometric analysis
- Development of novel extraction, isolation and separation techniques
- Analytical Chemistry: Method development and validation
- Separation of isomers using Ion-Mobility Mass Spectrometry (IMS)
- Chromatography/Foodomics approaches
- Nutri-metabolomics and its application

## **RESEARCH EXPERIENCE (2007-2022)**

### **Senior Technical Officer-III: January 2019-Till date**

#### **CSIR-Institute of Himalayan Bioresource Technology, Palampur, H.P, India**

- Targeted and non-targeted metabolomics and proteomics of *Trillium govanianum*, *Polygonatum verticillatum*, *Picrorhiza kurroa*, *Camellia sinensis* and many more using UPLC, LC-MS/MS, UHPLC-QTOF-IMS
- Lipidomics and metabolomics of animal and human samples
- Proteomics analysis to study abiotic stress in plants using 1D, 2D gel, MALDI-TOF-MS and LC-MS/MS.
- Method development and validation of phenolics, sugars, vitamins, hormones etc.
- Flavor and fragrances under volatile chemistry using GC, GC-MS and GC-MS-MS

### **Senior Technical Officer-II: January 2014-2019**

#### **CSIR-Institute of Himalayan Bioresource Technology, Palampur, H.P, India**

- Phytochemical analysis of high altitude medicinal plants using mass spectrometry
- Proteomics using mass spectrometry to study abiotic stress in high altitude plants
- Handling of scanning electron microscopy (SEM) with EDS for plant, animal and microbial tissues
- Method development and validation of peptides, phenolic acids, nucleosides, amino acids, fatty acids etc.
- Isolation and characterization of proteins and peptides using column chromatography, nano-UFLC and MALDI-TOF-MS/MS
- Introducing another dimension in metabolomics using Ion mobility mass spectrometry

### **PhD Chemistry: January 2011-August 2015**

#### **CSIR-Institute of Himalayan Bioresource Technology, Palampur, H.P, India**

##### ➤ **Extraction and characterization of volatile flavour components**

- Comparative quality analysis of Kangra tea with Nilgiri, Uttarakhand, Darjeeling, Assam teas and others
- Optimization of supercritical fluid extraction technique with CO<sub>2</sub> flow rate, co-solvents, dynamic time etc.
- Volatile flavour components in *Sinensis*, *Assamica* and *Cambodiensis* varieties growing in Kangra region, India
- Orthodox tea quality using electronic nose and electronic tongue techniques

##### ➤ **Isolation and characterization studies of saponins, anthocyanins and theanine**

- Anthocyanins enriched purple tea exhibits antioxidant, immuno-stimulatory and anticancer activities
- LC-MS/MS and UPLC-PDA and ELSD method development of anthocyanins and saponins
- A green, economical, value addition process for extraction and purification of anthocyanins from *Camellia sinensis* and other crops
- Extraction, isolation and purification of theanine from tea leaves and its production using biotransformation

##### ➤ **Development of value added products from low grade teas and their stability studies**

- A strategic approach to diversify and add value to tea products for domestic and international markets
- Tea flavour matrices
- Decaffeinated black tea
- Tea mouth freshener
- Specialty teas
- Perfumes

### **Senior Research Fellow (2013-2014)**

#### **CSKHPKV, Palampur, HP, India**

- Pesticide and metabolite extraction and identifications from fruits and vegetable crops
- Pesticide identification in various food crops including wheat, fruits and other vegetable crops
- Method development and validation of pesticides and herbicides on GC, GC-MS and HPLC
- Dissipation kinetics of glyphosate in tea and tea-field under North-Western mid-hill conditions of India

### **Project Assistant-II (2007-2012)**

#### **CSIR-Institute of Himalayan Bioresource Technology, Palampur, H.P, India**

- Extraction techniques for flavor extraction viz. simultaneous distillation extraction, supercritical fluid extraction, cleverger extraction, cold extraction, microwave extraction, Soxhlet extraction etc.
- Extraction and identification of phenolics and other secondary metabolites and identification.
- In vitro cytotoxicity, antimicrobial, and metal-chelating activity of triterpene saponins from tea seed grown in Kangra valley, India

- Optimization of temperature, pressure, dynamic time, CO<sub>2</sub> flow rate and solvent polarity in SFE extraction of Kangra tea
- Hands on analytical instrument HPLC, GC, GC-MS, UPLC, SFE, and UPLC-MS/MS for qualitative and quantitative analysis

Total: **70**Citation: **>1067**h-index: **18**i-10 index: **24**Book Chapter: **2**Patent: **2** (Filed: 02)Invited/Oral Presentations: **3** Paper presented in conferences: **7** Dissertation supervised: **5****PROJECTS**

Project Title		Funding Agency	Duration
<b>In Progress as a Co-PI</b>			
1	Development of microalgae-based protein and micronutrient rich animal feed (FTT)	CSIR FTT	<b>2020-2022</b>
2	Floriculture Mission	CSIR Mission	<b>2020-2023</b>
3	CSIR-Aroma Mission (Phase II)	CSIR Mission	<b>2020-2023</b>
<b>Completed as a Co-PI</b>			
1	Bio-prospecting of native cattle and goats milk for bioactive potential	ICMR	<b>2016-2019</b>
2	CSIR-Aroma Mission	CSIR Mission	<b>2017-2020</b>
3	Combating Iron and Zinc Deficiency using microalgae based foods	CSIR FTT	<b>2018-2020</b>

**SELECTED PUBLICATIONS**

- Dadwal, V., **Joshi, R\*** and Gupta, M. (2023). Comparative metabolomics of Himalayan crab apple (*Malus baccata*) with commercially utilized apple (*Malus domestica*) using UHPLC-QTOF-IMS coupled with multivariate analysis. *Food Chemistry*, 402, 134529.
- Kumari, V., **Joshi, R.**, Chawla, A and Kumar D. (2022). Metabolome analysis of *Dactylorhiza hatagirea* (D. Don) Soo reveals a significant antioxidant and nutritional potential of its tubers. *South African Journal of Botany*, 150, 431-442.
- Punia, A., **Joshi, R\*** and Kumar, R (2022). A simultaneous identification and quantitation of alkaloids in plant parts of *Aconitum heterophyllum* using UHPLC-DAD-QTOF-IMS. *Phytochemical Analysis* [doi.org/10.1002/pca.3164](https://doi.org/10.1002/pca.3164).
- Dadwal, V., **Joshi, R\*** and Gupta, M. (2022). A comparative metabolomic investigation in fruit sections of *Citrus medica* L. and *Citrus maxima* L. detecting potential sources of bioactive metabolites using UHPLC-QTOF-IMS. *Food Research International*, 157, 111486.
- Rana, A., Rana, S., Kapoor, S., **Joshi, R.**, Thakur, A., Padward, Y. S., and Kumar, S. (2022). Unravelling the comparative metabolite fingerprints and therapeutic effects of diverse teas. *Food Bioscience* DOI: [10.1016/j.fbio.2022.101795](https://doi.org/10.1016/j.fbio.2022.101795).
- **Joshi R\***, Sharma, S., and Kumar D. (2022). Advances of ion mobility platform for plant metabolomics. *Critical Reviews in Analytical Chemistry*, 1-17
- Kumar, A., **Joshi, R\***, Vashisth, A., Guleria, V., and Kumar, K. (2022). UHPLC-QTOF-IMS-based metabolite fingerprinting of underutilized *Cordia myxa* fruits and leaves: A nutraceutical source. *ACS Food Science and Technology (Accepted)* DOI: [10.1021/acsfoodscitech.1c00398](https://doi.org/10.1021/acsfoodscitech.1c00398).
- Kumar, K., Malhotra, J., and **Joshi, R\***. (2022). Comparative volatile aroma profiling of *Hedychium*

*flavescens* growing in North Western Himalayan region. *Natural Product Research (Accepted)* DOI: [10.1080/14786419.2022.2069106](https://doi.org/10.1080/14786419.2022.2069106).

- Dadwal, V., **Joshi, R** and Gupta, M. (2022). Effect of physical and chemical preservation techniques on nutritional, morphological, phenolic, and antioxidant profile of *Dendrocalamus hamiltonii* sprouts. *Vegetos*. <https://doi.org/10.1007/s42535-022-00377-4>.
- Nutritional quality evaluation and proteome profile of forage species of Western Himalaya. (2022). Kumar, R., **Joshi, R.**, Kumar, R., Srivatsan, V., Satyakam, Chawla, A., Patial, V., and Kumar, S. *Grassland Science*, DOI: [10.1111/grs.12357](https://doi.org/10.1111/grs.12357).
- Kumari, M., Pradhan, U. K., **Joshi, R.**, Punia, A., Shankar, R., & Kumar, R. (2021). In-depth assembly of organ and development dissected *Picrorhiza kurroa* proteome map using mass spectrometry. *BMC Plant Biology*, 21(1), 1-18.
- Dar, A., S.M.S., Abidi., Randhawa, S., **Joshi, R.**, Kumar, R., and Acharya, A. (2021). Protein cloaked nanoparticles for enhanced cellular association and controlled pathophysiology via immunosurveillance escape. *ACS Applied Materials & Interfaces* 14(1):337-349.
- Dadwal, V., **Joshi, R\*** and Gupta, M. (2021). A multidimensional UHPLC-DAD-QTOF-IMS gradient approach for qualitative and quantitative investigation of *Citrus* and *Malus* fruit phenolic extracts and edibles. *ACS Food Science and Technology*, 1, 10, 2006-2018.
- Kumar, D., **Joshi, R.**, Sharma, A., Nadda, G. and Kumar, D. (2021). A comprehensive search of the primary and secondary metabolites and radical scavenging potential of *Trillium govanianum* Wall. ex D. Don. *Chemistry & Biodiversity*, doi.org/10.1002/cbdv.202100300.
- Dadwal, V., **Joshi, R** and Gupta, M. Formulation, characterization and in vitro digestion of polysaccharide reinforced Ca-alginate microbeads encapsulating *Citrus medica* L. phenolics. *LWT-Food Science and Technology*. 152 (2021) 112290.
- Sharma, S., **Joshi, R.**, Kumar, D. (2021). Metabolomics insights and bioprospection of *Polygonatum verticillatum*: An important dietary medicinal herb of alpine Himalaya. *Food Research International*, 148, 2021, 110619.
- Kumari, M., **Joshi, R.**, and Kumar, R. (2020). Metabolic signatures provide novel insights to *Picrorhiza kurroa* adaptation along the altitude in Himalayan region. *Metabolomics* (2020) 16:77.
- Sharma, S., **Joshi, R.**, Kumar, D. Quantitative analysis of flavonol, flavonol glycoside and homoisoflavonoids in *Polygonatum verticillatum* using UHPLC-QTOF-IMS and its antioxidant potential. *Phytochemical Analysis*, 2020,1-7.
- Agrawal, H., **Joshi, R** and Gupta, M. Functional and nutritional characterization of in vitro enzymatic hydrolyzed millets proteins. *Cereal Chemistry*, 2020. <https://doi.org/10.1002/cche.10359>.
- **Joshi, R.**, Sharma, A., Thakur, K., Kumar, D and Nadda, G. Metabolite analysis and nucleoside determination using reproducible UHPLC-QToF-IMS in *Ophiocordyceps sinensis*. *Journal of Liquid Chromatography and Related Technologies*, 2020, 41, 927-936.
- Kumar, R., **Joshi, R.**, Kumari, M., Thakur, R., Kumar, D., Kumar, S. (2020). Elevated CO<sub>2</sub> and temperature influence key proteins and metabolites associated with photosynthesis, antioxidant and carbon metabolism in *Picrorhiza kurroa*. *Journal of Proteomics*, 219, 103755.
- Agrawal, H., **Joshi, R\*** and Gupta, M\*. Purification, identification and characterization of two novel antioxidant peptides from finger millet (*Eleusine coracana*) protein hydrolysate. *Food Research International*, 2019, 120: 697-707.
- Dadwal, V., Agrawal, H., Sonkhla, K., **Joshi, R\*** and Gupta, M. (2018). Characterization of phenolics, amino acids, fatty acids and antioxidant activity in pulp and seeds of high altitude Himalayan crab apple fruits (*Malus baccata*). *Journal of Food Science and Technology*, 2018, 55: 2160-2169.
- Sharma, E., **Joshi, R** and Gulati, A. L-Theanine: An astounding sui generis integrant in tea (*Camellia sinensis*) *Food Chemistry*, 2018, 242, 601-610.
- Agrawal, H., **Joshi, R\*** and Gupta, M\*. Isolation and characterisation of enzymatic hydrolysed peptides with antioxidant activities from green tender sorghum. *LWT - Food Science and Technology*, 2017 84: 608-616.
- **Joshi, R.**, Rana., A., Kumar, V., Kumar, D., Padwad, Y.S., Yadav, S.K. and Gulati, A. (2017). Anthocyanins enriched purple tea exhibits antioxidant, immunostimulatory and anticancer activities. *Journal of Food Science and Technology*, 2017, 54, 1953-1963.
- Agrawal, H., **Joshi, R\*** and Gupta, M\*. Isolation, purification and characterisation of antioxidative peptide of pearl millet (*Pennisetum glaucum*) protein hydrolysate. *Food Chemistry*, 2016, 204, 365-372.

- **Joshi, R.**, and Gulati, A. Fractionation and identification of minor and aroma-active constituents in Kangra orthodox black teas. *Food Chemistry*, 2015, 167, 290-298.
- **Joshi, R.**, Rana, A and Gulati A. Studies on quality of orthodox teas made from anthocyanin-rich tea clones growing in Kangra valley, India. *Food Chemistry*, 2015 176, 356-367.
- Rana, A., Kumar, D., **Joshi, R.**, Gulati, A. and Singh, H. P. (2015). Cytotoxic activity of black tea theaflavin digallates against Chinese hamster ovary cells (CHOK1) and rat glioma cells (C-6). *Journal of Natural Compounds*, 2015, 51, 835-839.
- **Joshi, R.**, Babu, G. D. K. and Gulati, A. Effect of decaffeination conditions on quality parameters of Kangra orthodox black tea. *Food Research International*, 2013, 53, 693-703.
- **Joshi R.**, Sood, S., Poonam, Mahendru, M., Kumar, D., Bhangalia, S., Pal, H. C., Kumar, N., Bhushan, S., Gulati, A., Saxena, A. K. and Gulati, A. *In-vitro* cytotoxicity, antimicrobial and metal chelating activity of triterpene saponins from tea seed grown in Kangra valley, India. *Medicinal Chemistry Research*, 2012, 22, 4030-4038.
- **Joshi, R.**, Sharma, V., Prasad, R., Sud, R. K. and Gulati, A. Analysis of the essential oil of large cardamom (*Amomum subulatum*) growing in different agro climatic zones of Himachal Pradesh, India. *Journal of Science Food and Agriculture*, 2012, 93, 1303-1309.
- Ghosh, D., Gulati, A., **Joshi, R.**, Bhattacharyya, N. and Bandhopadhyaya, R. Estimation of aroma determining compounds of Kangra valley tea by electronic nose system. *Lecture Notes in Computer Science*, 2012, 171-179.
- Pal, A., **Joshi, R.**, Akuli, A., Dey, T., Gulati, A. and Bhattacharyya, N. A new method for rapid detection of total colour (TC), theaflavins (TF), thearubigins (TR) and brightness (TB) in orthodox tea using electronic vision system. *IEEE-ICST*, 2012, 23-28.
- **Joshi, R.**, Poonam, Saini, R., Guleria, S., Babu, G. D. K., Kumari, M. and Gulati, A. Characterization of volatile components of tea flowers (*Camellia sinensis*) growing in Kangra by GC/MS. *Natural Product Communication*, 2011, 6, 1155-1158.
- **Joshi, R.**, Poonam and Gulati, A. Physiological and biochemical changes during flower development stages in *Camellia sinensis* growing in Kangra region of India. *Scientia Horticulture*, 2011, 130, 266-274.
- Sharma, V., **Joshi, R.** and Gulati, A. (2011). Seasonal clonal variations and effects of various stresses on quality chemicals and prephenate dehydratase enzyme activity in tea [*Camellia sinensis*]. *European Journal Food Research and Technology*, 2011, 232, 307-317.

(\*As a corresponding author)

#### **BOOK CHAPTERS**

- Singh, R., **Joshi, R.**, Munaiz, E. D., Kumar, S. and Kumar, A. (2020). Application of metabolomics to food systems, RSC Publisher.
- Dadwal, V., Agrawal, H., Bhatt, S., **Joshi, R\*** and Gupta, M. (2018). Nutritional attributes of traditionally consumed cereal grains and legumes as functional food.

#### **RESEARCH ARTICLE (COMMUNICATED)**

- Dadwal, V., **Joshi, R\*** and Gupta, M. (2022). A comprehensive metabolomics of *Murraya koenigii* fruits at different stages of growth and health benefits. (*Under review*).

#### **CONFERENCES / POSTER PRESENTATION / ORAL PRESENTATIONS**

- **Joshi, R** and Gulati, A. "Use of SFE for extraction of tea aroma components." 2<sup>nd</sup> National symposium on Analytical Innovations for Process and Technology Development, ISAS-DC chapter, **2008**, IHBT, Palampur, India.
- **Joshi, R.**, Rawat, R and Gulati, A. "Application of purified tea shoot  $\beta$ -glucosidase in beverages and foods." International conference on Role of biomolecules in food security and health improvement and XI silver jubilee Convention of the Indian society of Agricultural Biochemists, February 17-20, **2010**, Varanasi, Banaras Hindu University, India.
- **Joshi, R.**, Gulati, A., Bhattacharya, N., Ghosh, D and Roy, J.K. "Tea quality measurement by E-Vision system (ENTV SYSTEM)." National Bilingual Conference on Agrionics and Food Processing Instrumentation at CSIR-CSIO Chandigarh, Sept 26-28, **2010**.
- **Joshi, R.**, Poonam, Bhangalia, S., Sood, S., Kumar, N., Gulati, A and Gulati, A. "Triterpene saponins with antifungal activity from tea seeds (*Camellia sinensis*)." Symposium on Magnetic Resonance in Pharmaceuticals at GNDU, Amritsar, March 1-4, **2011**.
- Bhattachacharya, A., Saini, U., **Joshi, R.**, Kaur, D., Sharma, M., Gulati, M. and Ahuja, P. S. Osmotic adjustments by increased accumulation of total catechins and compatible solutes impart stress tolerance

in transgenic tea plants. National symposium on impact of plant tissue culture on advances in plant biology and XXXIII PTCA (I) annual meet, Ahmedabad, January 19-21, **2012**, pp 80.

- **Joshi, R.** Oral presentation on “Extraction and identification of odour active molecules from Himalayan Kangra orthodox teas” held in Kaya Artemis Hotel, Famagusta, N. Cyprus from 13-17 November, **2019**.
- **Joshi, R.** Oral presentation on “Quality analysis of Saffron and Heeng” held in CSIR-IHBT in Capacity Building of Agriculture Officers, Department of Agriculture, HP on Production Technology of Saffron and Heeng from July 20-22, **2020**.
- **Joshi, R., Sharma, S. and Kumar D.** Poster presentation on “Exploration of metabolites in medicinal plants using third-dimensional ion-mobility mass spectrometry”. Metabolomics Society Conference, June 22-24, **2021**.
- **Joshi, R.** Poster pitch presentation on “Ion mobility mass spectrometry: Modern validation approach towards targeted and non-targeted metabolomics method development”. Benelux Metabolomics Days, May 19-20, **2022** at Utrecht, Netherlands.

#### **TRAININGS / SAMINARS / WORKSHOPS**

- HPLC seminar on drug discovery and UPLC organized by Waters India pvt. Ltd. at Hotel Aroma, Chandigarh, August, **2008**.
- HPLC technical seminar at hotel Le Mariet, organized by Waters India pvt. Ltd Baddi (HP) on August, **2008**.
- National Accreditation Board of testing and calibration Laboratory (NABL) three days training, attended on July 1-3, **2009** at IHBT Palampur.
- HPLC technical seminar at hotel Aroma, organized by Waters India pvt. Ltd on July, **2010**.
- Attended workshop on Fundamentals of mass spectrometry-based proteomics for beginners at Institute of Bioinformatics, Bangalore from March 6-8, **2014**.
- Five days Orientation Training Programme for Technical Group III Personnel from July 14 -18, **2014** at CSIR-HRDC Ghaziabad.
- Three days International Symposium (Nov 22-24, **2014**) and seven days’ Workshop (Nov 25-Dec 1, **2014**): Proteomics: Present & Future organized by Centre for Cellular & Molecular Biology (CCMB), Hyderabad.
- Five days’ Workshop on Art of Public Speaking and S&T Communication from March 6-8, **2017** at CSIR-HRDC Ghaziabad.
- Participated in Flavour and Fragrance Expo, Mumbai, (April, 16-17, **2019**).
- Education Day, Proteomics Society of India, November 21, **2020**, Proteomics: Concept, Data analysis and visualization.
- Online training on “Agarbatti, Dhoopbatti, Havansamagri & Perfumery”, June 9-11, **2021** organized by FFDC Kanoj, UP.
- Online training on “Fragrance and Flavour Creation & its Applications”, August 10-13, **2021** organized by FFDC Kanoj, UP.
- Online workshop on “Art of Sustainable Perfumery: 22-26, November **2021** organized by FICCI Taskforce on Fragrance, New Delhi”.
- 8th Munich Metabolomics Symposium (Virtual). Applications of clinical metabolomics in oncology and cardiovascular diseases, November 12, **2021**.
- Participated in the “Essential Oil Association of India International Congress and Expo 2022” from May 26-28, **2022**, Indore, India.
- Attended workshop on “Training cum workshop on essential oil, perfumery & aromatherapy” from 07-11 June **2022** Organized by: FFDC and FRI, Dehradun at FOREST RESEARCH INSTITUTE, Dehradun, India.
- Online metabolomics workshop on “Dried blood spot collection and analysis to study mammalian metabolism: past, present, future” on July 6, **2022** organised by Warwick (Rick) Dunn, University of Liverpool, UK.

- Online metabolomics workshop on “Introduction to metabolomics” hosted by Metabolomics Society, Brasil on 15-18 August 2022.

#### **AWARDS**

- **Assistant Professor** of Academy of Scientific and Innovative Research (AcSIR), 2016.
- **Ranked 2<sup>nd</sup>** in India (Top 0.45 %) as a **Tea expert scientist** among 32,046 published authors worldwide on Tea as per expertscape.  
Link: <https://expertscape.com/au/tea/Joshi%2C+Robin>
- Learning Python (2020) course LinkedIn. Jan 2022. **Certificate Id:** ARoEeuivrMsgZevaGLJys9nXCBcK.
- **Top cited article in 2020-21.** Sharma, S., **Joshi, R.**, Kumar, D. Quantitative analysis of flavonol, flavonol glycoside and homoisoflavonoids in *Polygonatum verticillatum* using UHPLC-QTOF-IMS and its antioxidant potential. *Phytochemical Analysis*, 2020,1-7.
- **Invited lecture** in the conference of Next-generation proteome mining and Nano-bio interactions for better plant growth entitled “**Exploration of medicinal plants using metabolomics: An emerging analytical approach**” at Delhi University, 27-29<sup>th</sup> December, 2021.
- **Invited lecture** in a virtual event of Metabolomics Symposium of Metabolomics India-Entering the Next Level of population Health entitled “**Metabolomics of Medicinal Plants for Pathway Exploration using Multivariate Analysis**” on September 29, 2022 organised by Bocrates Life Sciences, Austria.

#### **DISSERTATIONS SUPERVISED**

- **Ms. Sandeep Kaur** (MSc Biotechnology). Thesis entitled ‘Proteomic analysis of *Medicago sativa* using MALDI-TOF-TOF MS/MS’ (3 Months).
- **Ms. Ayushi Mahajan** (MSc Chemistry). Thesis entitled ‘Phenolics separation on ultra-pressure liquid chromatography (UPLC) and ultra-high pressure liquid chromatography-quadrupole-time of flight mass spectrometry (UHPLC-Q-TOF-MS/MS)’ from 23.12.2019-22.01.2020 (1 Month).
- **Ms. Devangna** (BSc Biochemistry). Thesis entitled ‘Biochemical assays of medicinal plant extracts’ from 01.03.20-31.03.2020 (1 Month).
- **Mr. Vishva Deepak Chaturvedi (PhD student)**. Thesis entitled ‘Hands on training of chromatographic techniques’ from 03.04.21-12.04.2021 (10 Days).
- **Karishma** (MSc Chemistry). Thesis entitled ‘Hands on Training on Analytical Instruments’ from 09.08.21-till date (Six months).
- **Siddhart Tomar(MSc Biotechnology)**. Thesis title ‘Applications of UPLC, LC-MS-QTOF-IMS and MALDI-TOF-MS in metabolomics’ from 03.03.22-19.05.22.
- **Anmol Rajpoot (Msc Chemistry)**. Thesis title ‘Identification of proteins and metabolites using mass spectrometry’ from 06.06.22-29.07.22.
- **Anandita (Msc Chemistry)**. Thesis title ‘Identification of proteins and metabolites using mass spectrometry’ from 06.06.22-29.07.22.

#### **CM START UP SCHEMES FOR PRODUCT DEVELOPMENT FOR SOCIETAL BENEFITS OR LIVELIHOOD GENERATION (FLAVOUR and FRAGRANCES)**

- Rajan Minhas (2020-2021)-Natural aromatic and aromatherapy candles
- Kushal Soni (2020-2021)-Natural perfumes
- Tanmay Sharma (2021-2022)-Herbal incense sticks

#### **TECHNOLOGIES TRANSFERRED OR LICENSED**

- Tea mouthwash
- Herbal incense sticks and cones
- Natural perfumes, room freshener
- Herbal lip balm

- Fragrant and aromatherapy candles

### **MEMBERS OF PROFESSIONAL SOCIETIES**

- Chromatographic Society of India, Mumbai.
- Indian Society of Analytical Scientist, Delhi Chapter, New Delhi.
- International Metabolomics Society.
- Metabolomics Association of North America
- NORDIC Metabolomics Society, Copenhagen
- Metabolomics Brazil Portal

### **HOBBIES**

**Football** (Participated in football match on 15 Aug 2017 and 2018), **Cricket** (Part of institutional team since 2018-till date), **Bike riding in rain**, **Hard rock music** (Linkin Park, Metallica, Eminem and many more), motivational speeches and **trekking** to explore new places (Kullu, Manali, Barot, Rajgunda, Rohtang valley, Panchmadi).

### **VOLUNTEERING EXPERIENCE**

- Organized drawing competition at CSIR-IHBT on Environmental day in **2017, 2018**.
- Organized Quiz competition in Environment day in **2019**.
- Organized 'Walkthon' on Integrity and Awareness Day on October 26, **2021**
- DAC member of PhD students enrolled in AcSIR
- Institutional Management Council Member for two years (**2020-2021**)
- A training program for making 'Incense stick, Dhoopcone, and Agarbatti from flower waste' was organized on 22.07.22 for a self-help group 'Jagriti' of more than 30 papers.

### **RESOURCE PERSON FOR JOURNALS**

*Phytochemical Analysis, Food Chemistry, Food Research International, Journal of Agricultural and Food Chemistry, LWT-Food Science and Technology, Journal of Functional Foods, Food and Functions, Food Science and Technology, Medicinal Chemistry Research, Journal of Natural Products, Journal of Ethnopharmacology, Natural Product Reports, Natural Product Communications, and Scientific Reports*

### **WEB PRESENCE**

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