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**Centre** Pharmaceutical Sciences and Natural Products  
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## Education

**2007- Ph.D** (Organic chemistry)

- Thesis entitled “*Chemical Investigations of some Bioactive Phenylethanoids and Phenylpropanoids Employing Green Methodologies.*”  
Guru Nanak Dev University (GNDU) Amritsar, Punjab, India; **Supervisor:** Dr. Arun K Sinha, Senior Scientist, Natural Plant Products Division, I.H.B.T., CSIR, Palampur 176 061 H.P., India.
- **2001 Bachelor of Education** (B.Ed)  
Himachal Pradesh University, Shimla, India
- **2000 Master of Science** (Organic Chemistry)  
Himachal Pradesh University, Shimla, India
- **1998 Bachelor of Science**  
Subjects: Chemistry, Physics & Mathematics  
Post Graduate College Hamirpur, (H.P. University, Shimla) India.

## Experience

### A. Research Experience

**Project Assistant:** (from Sept. 2003 to Dec. 2003)

Institute of Himalayan Bioresource Technology (CSIR), Palampur H.P, India.

Worked on a project sponsored by Defense Research and Development Organization

**Junior Research Fellow/ Senior Research Fellow:** (2004-2007)

Institute of Himalayan Bioresource Technology (I.H.B.T.), CSIR, Palampur H.P, India.

(The position was supported by University Grant Commission Delhi, Govt. of India, India)

Research field: *Chemical Investigations of some Bioactive Phenylethanoids and Phenylpropanoids Employing Green Methodologies.*

- **Post doc fellow:** (2008- 2009)  
European Research Centre for Drug Discovery and Development, Dipartimento farmaco Chimico Tecnologico, Università di Siena, Siena, Italy.  
**Research Field:**
- **CNS active compound (antipsychotics)**  
Designing and synthesis of arylalkylpiperazine scaffolds involving multistep protocols and their screening/SAR studies for antipsychotic agents.
- **Anti-tumor agents**  
Synthesis of Benzodiazepine derivatives involving multi-step peptide synthesis and their screening for anti-tumor activities.
- **Research Officer** (2010 - 2012)  
Department of Pharmacy and Pharmacology, University of Bath, BA2 7AY, United Kingdom.

**Drug Abuse Treatment (Opioid receptor ligands)**

Synthesis and screening of naltrexone derivatives as selective MOP/NOP agonist

Synthesis and SAR studies of Buprenorphine derivatives as potential MOP, KOP antagonists/ NOP partial agonists

- **Assistant Professor** (From June 2012 to till date)

Department of Pharmaceutical Sciences and Natural Products  
Central University of Punjab  
Bathinda, Punjab.

**Research Project****Handled****UGC-BSR****Title :** Synthesis of Bioactive Heterocyclic Scaffolds Using Novel Green Technologies**Funding Agency:** University Grant Commission**Grant Sanctioned:** Rs 6 Lakh**Year of Sanction:** 2013**Duration of the Project (s):** 2 years**CUPB****Title:** Design, synthesis and evaluation of combrestatins inspired small molecules as putative tubulin polymerization inhibitors**Funding Agency:** Central University of Punjab**Grant Sanctioned:** Rs 3 Lakh**Year of Sanction:** 2014**Duration of the Project (s):** 2 years**Ongoing****DST****Title:** Targeting Cancer Stem Cells through One Drug Multi-Target Approach (microtubule inhibition, vascular disruption and anti-angiogenesis)**Funding Agency:** DST**Grant Sanctioned:** Rs 30 Lakh**Year of Sanction:** 2016**Duration of the Project (s):** 3 years**Scientist Exchange Programme with Innsbruck Medical University, Innsbruck, Austria****Funding Agency:** DST (India) and OeaD (Austria)**Grant Sanctioned:** Rs 10 Lakh**Year of Sanction:** 2017**Duration of the Project (s):** 2 years**Professional Recognition /Awards/Scholarship**

- **Junior Research Fellowship/ Senior Research Fellowship** in chemistry, sponsored by University Grant Commission Delhi, Govt. of India, India, awarded on the basis of **National Eligibility Test (NET)** in Jan. 2004 for pursuing research.
- **Post doc Fellowship** in Jan. 2008 from University of Siena, Italy.
- **Post doc fellowship** in Jan. 2010 from University of Bath, UK
- **CUPB Research award** for the year of 2016-17

**Peer Recognition**

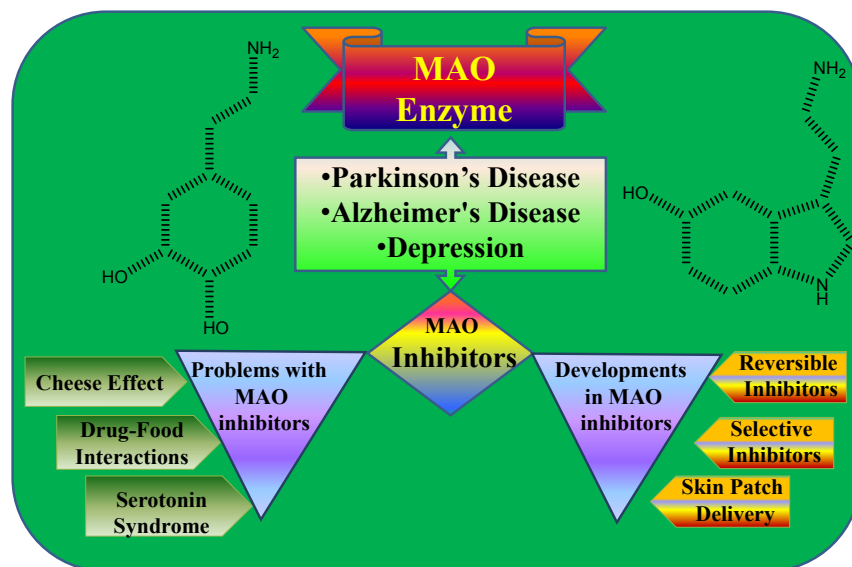
Reviewer of many journals including ChemMedChem, Current Medicinal Chemistry, Current Drug Targets, Tetrahedron Letter, Journal of Indian Chemical Society, Indian Journal of Chemistry

**Guest editor-** Current Medicinal Chemistry**Area specializations/Research Interest**

## Research Areas

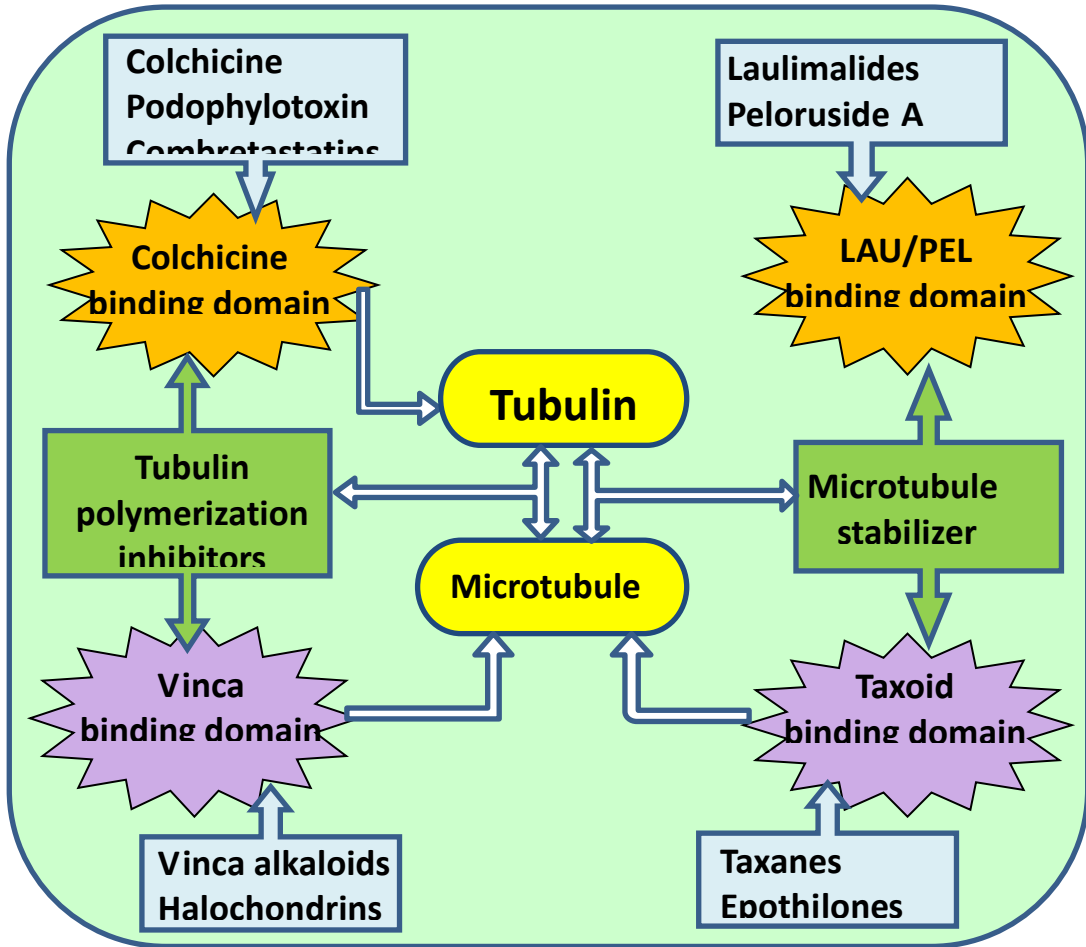
### MAO inhibitors

MAO enzyme is associated with the etiology of different neurological disorders including Parkinson's disease, Alzheimer's disease and depression. MAO inhibitors are being developed as effective drug candidates for the management and/or treatment of neurogenic disorders.



### Tubulin/Microtubule inhibitors

Flow diagram describing different binding site on the tubulin and microtubule. The taxoid, vinca and LAU/PEL binding domains present on the microtubule while colchicine binding site is located on the tubulin. Ligands binding to the taxoid and LAU/PEL site act as microtubule stabilizer while vinca and colchicine binding site agents act as tubulin polymerization inhibitors.



## Publications

### List of Publications/patents/conferences:

1. Synthesis, Biological Evaluation and Molecular Modeling Studies of Propargyl Containing 2,4,6-trisubstituted Pyrimidine Derivatives as Potential anti-Parkinson agents  
Bhupinder Kumar, Mohit Kumar, Ashish Ranjan Dwivedi, and Dr. Vinod Kumar, ChemMedChem, 2017, accepted
2. Recent Synthetic Strategies for Monocyclic Azole Nucleus and Its Role in Drug Discovery and Development  
Neha, Ashish Ranjan Dwivedi, Rakesh Kumar and Vinod Kumar, Curr. Org. Synth., 2017, accepted
3. Recent Advances in HER2 Positive Breast Cancer Epigenetics: Susceptibility and Therapeutic Strategies  
Heena Singla, Abhilash Ludhiadch, Raman Preet Kaur, Vinod Kumar\*\*, Anjana Munshi\*, Eur. J. Med. Chem. 2017, accepted,
4. Recent Updates on the Therapeutic Potential of HER2 Inhibitors for the Treatment of Breast Cancer  
Heena Singla, Anjana Munshi,\* Raja Paramjit Singh Banipal and Vinod Kumar\* Current Cancer Drug Targets; 2017, accepted, Impact Factor- 3.7
5. Promising Targets in Anti-cancer Drug Development: Recent Updates  
Bhupinder Kumar, Sandeep Singh, Ira Skvortsova and Vinod Kumar, Current Medicinal Chemistry, 2017, accepted
6. Role of Genomic Alterations in HER2 Positive Breast Carcinoma: Focus on Susceptibility and Trastuzumab-Therapy  
Heena Singla, Sourav Kalra, Preeti Kheterpal, Vinod Kumar\*, Anjana Munshi\* Current Cancer Drug Targets; 17 (4), 344-356, Impact Factor- 3.7
7. Mechanisms of Tubulin Binding Ligands to Target Cancer Cells: Updates on Their Therapeutic Potential and Clinical Trials  
Bhupinder Kumar, Rakesh Kumar, Ira Skvortsova, and Vinod Kumar; Current Cancer Drug Targets; 17 (4), 357-375, Impact Factor- 3.7
8. Recent Developments on the Structure-Activity Relationship Studies of MAO Inhibitors and Their Role in Different Neurological Disorders  
Bhupinder Kumar, Sheetal, Anil K. Mantha and Vinod Kumar; RSC Advances; 2016, 6, 42660-42683; Impact Factor- 3.84
9. Regioselective Alkylation of 1,2,4-triazole Using Ionic Liquids Under Microwave Conditions  
Ramandeep [Kaur](#), Bhupinder [Kumar](#), Ashish Ranjan [Dwivedi](#), Vinod [Kumar](#); Green Processing and Synthesis; 2016, *accepted*
10. A Perspective on Monoamine Oxidase Enzyme as Drug Target: Challenges and Opportunities  
Bhupinder Kumar, Vivek Prakash Gupta and Vinod Kumar; Cur. Drug Targets, 2017, 18, 87-97
11. Radiation resistance: cancer stem cells (CSCs) and their enigmatic pro-survival signalling.  
<http://www.sciencedirect.com/science/article/pii/S1044579X15000905>  
Ira-Ida Skvortsova; Paul Debbage; Vinod Kumar; Sergej Skvortsov; *Sem. Cancer Biol.* 2015, 35, 39-44. *Impact factor- 9.1*
12. Recent Developments on 1,2,4-Triazole Nucleus in Anticancer Compounds: A Review  
Ramandeep Kaur, Ashish Ranjan Dwivedi, Bhupinder Kumar and Vinod Kumar; Anti Cancer agents Med. Chem. 2016, 16(4): 465-489
13. C7 $\beta$ -Methyl analogues of the orvinols: The discovery of kappa opioid antagonists with nociceptin/orphanin FQ peptide (NOP) receptor partial agonism and low, or zero, efficacy at mu opioid receptors.  
<http://pubs.acs.org/doi/abs/10.1021/acs.jmedchem.5b00130>  
Juan Pablo Cueva , Christopher Roche , Mehrnoosh Ostovar , Vinod Kumar , Mary J Clark , Todd Hillhouse , John W. Lewis , John R. Traynor , and Stephen M Husbands; *J. Med. Chem.*, 2015, 58, 4242-4249. *Impact Factor- 5.6*
14. Pyrrolo- and Pyridomorphinans: Non-selective opioid antagonists and delta opioid agonists/mu opioid partial agonists.  
<http://dx.doi.org/10.1016/j.bmc.2014.05.065>  
**Vinod Kumar**, M.J. Clark, J.R. Traynor, J.W. Lewis, S.M. Husbands; *Bioorg. Med. Chem.* 2014, 22, 4067-4072. *Impact Factor-2.90*
15. Selectively Promiscuous Opioid Ligands: Discovery of High Affinity/Low Efficacy Opioid Ligands with Substantial Nociceptin Opioid Peptide Receptor Affinity. <http://pubs.acs.org/doi/abs/10.1021/jm401964y>  
Vinod Kumar, Irna E. Ridzwan , KonstantinosGrivas , John W. Lewis , Mary J Clark , Claire Meurice, Corina Jimenez-Gomez , Irina D. Pogozheva , Henry I. Mosberg , John R. Traynor , **and** Stephen M Husbands; *J. Med. Chem.*, 2014, 57, 4049-4057. *Impact Factor- 5.6*
16. GluA2/GluK1 Receptor Ligands Structurally Based upon 1*H*-Cyclopentapyrimidine-2,4(1*H*,3*H*)-dione: Synthesis, Molecular Pharmacological and Biostructural characterization. <http://pubs.acs.org/doi/abs/10.1021/jm2004078>  
RamintaVenskutonyt, StefaniaButini, Salvatore SannaCoccone, Sandra Gemma, MargheritaBrindisi, **Vinod Kumar**, EgeriaGuarino, SamueleMaramai, Salvatore Valenti, Ahmad Amir, Elena AntónValadés, Karla Frydenvang,

JetteSandholmKastrup, EttoreNovellino, Giuseppe Campiani, and Darryl S. Pickering; *J. Med. Chem.*, 2011, 54, 4793-4805. *Impact Factor-5.6*

17. Discovery of Bis-homo(hetero)arylpiperazines as Novel Multifunctional Ligands Targeting Dopamine D<sub>3</sub> and Serotonin 5-HT<sub>1A</sub> and 5-HT<sub>2A</sub> Receptors. <http://pubs.acs.org/doi/abs/10.1021/jm100294b>  
StefaniaButini, Giuseppe Campiani, Silvia Franceschini, Francesco Trotta, **Vinod Kumar**, EgeriaGuarino, Giuseppe Borrelli, Isabella Fiorini, EttoreNovellino, CaterinaFattorusso, Marco Persico, NausicaaOrteca, Karin Sandager-Nielsen, Thomas Amos Jacobsen, Kim Madsen, Jorgen Scheel-Kruger, and Sandra Gemma; , *J. Med. Chem.*, 2010, 53, 4803-4807. *Impact Factor- 5.6*
18. Development of Antitubercular Compounds Based on a 4-Quinolylhydrazone Scaffold. Further Structure-activity Relationship Studies. <http://www.sciencedirect.com/science/article/pii/S096808960900604X#>  
Sandra Gemma, Luisa Savini, Maria Altarelli, Pierangela Tripaldi, Luisa Chiasserini, Salvatore Sanna Coccone, **Vinod Kumar**, Caterina Camodeca, Giuseppe Campiani, EttoreNovellino, Sandra Clarizio, Giovanni Delogu, and Stefania Butini, *Bio. Med. Chem.*, 2009, 17, 6063-6072. *Impact Factor-2.90*
19. Larvicidal and Structure–Activity Studies of Natural Phenylpropanoids and Their Semisynthetic Derivatives against the Tobacco Armyworm Spodopteralitura (Fab.) (Lepidoptera: Noctuidae). <http://onlinelibrary.wiley.com/doi/10.1002/cbdv.200800345/abstract>  
AnuBhardwaj, Dhananjay Kumar Tewary, Rakesh Kumar, **Vinod Kumar**, Arun Kumar Sinha, and Adarsh Shankera; *Chemistry and Biodiversity*, 2010, 7, 168-177. *Impact Factor-1.9*
20. Specific Targeting of Peripheral Serotonin 5-HT<sub>3</sub>Receptors. Synthesis, Biological Investigation and Structure-Activity Relationships. <http://pubs.acs.org/doi/abs/10.1021/jm900018b>  
Elena Morelli, Sandra Gemma, Roberta Budriesi, Giuseppe Campiani, Ettore Novellino, Caterina Fattorusso, Bruno Catalanotti, Luisa, Salvatore Sanna Coccone, Sindu Ros, Giuseppe Borrelli, **Vinod Kumar**, Marco Persico, Isabella Fiorini, Vito Nacci, Pierfranco Ioan, Alberto Chiarini, Michel Hamon, Alfredo Cagnotto, Tiziana Mennini, Claudia Fracasso, Molena Colovic, Silvio Caccia, and Stefania Butini, *J. Med. Chem.*, 2009, 52, 3548-3562. *Impact Factor- 5.6*
21. Unique versatility of Ionic liquids as clean and efficient decarboxylation catalyst: A metal and quinoline free paradigm towards synthesis of Indoles, Styrenes, Stilbenes and Arene derivatives under microwave in aqueous condition. <http://onlinelibrary.wiley.com/doi/10.1002/adsc.200800537/pdf>  
Abhishek Sharma, Rakesh Kumar, Naina Sharma, **Vinod Kumar** and Arun K. Sinha, *Adv. Synth. Catal.*, 2008, 350, 2910-2920. *Impact Factor-5.53*
22. Neutral Ionic Liquid [hmim]Br as a Green Reagent and Solvent for the Mild and Efficient Dehydration of Benzyl Alcohols into (*E*)-Arylalkenes Under Microwave Irradiation. <http://onlinelibrary.wiley.com/doi/10.1002/ejoc.200800657/full>  
Rakesh Kumar, Abhishek Sharma, Naina Sharma, **Vinod Kumar** and Arun K. Sinha, *Eur. J.Org. Chem.*, 2008, 5577-5582. *Impact Factor-3.34*
23. Isolation and purification of acetylshikonin and β-acetoxyisovalerylshikonin from the cell suspension cultures of *Arnebiaeuchroma*(Royle) Johnston using rapid preparative HPLC. <http://onlinelibrary.wiley.com/doi/10.1002/jssc.200700489/abstract>  
Nandini Sharma, Upendra K. Sharma, Sonia Malik, ShashiBhushan, **Vinod Kumar**, Subash C. Verma, Naina Sharma, Madhu Sharma, Arun K. Sinha *J. Sep. Sci.* 2008, 31, 629-635. *Impact Factor-2.6*
24. RP-HPTLC densitometric determination and validation of vanillin and related phenolic compounds in accelerated solvent extract of *Vanilla planifolia*. <http://onlinelibrary.wiley.com/doi/10.1002/jssc.200700229/abstract>  
Upendra K. Sharma, Nandini Sharma, Ajai P. Gupta, **Vinod Kumar**, Arun K. Sinha *J. Sep. Sci.* 2007, 30, 3174-3180. *Impact Factor-2.6*
25. An Unusual, Mild and Convenient One Pot Two Step Access to (*E*)-Stilbenes from Hydroxy Substituted Benzaldehydes and Phenylacetic Acids Under Microwave Activation: Revelation of a New Facet on the Classical Perkin Reaction. <http://www.sciencedirect.com/science/article/pii/S0040402007014305>  
Arun K. Sinha, **Vinod Kumar**, Abhishek Sharma, Anuj Sharma and Rakesh Kumar *Tetrahedron*, 2007, 63, 11070-11077. *Impact Factor-2.80*
26. DDQ catalyzed benzylicacetoxylation of arylalkanes: A case of exquisitely controlled oxidation under sonochemical activation. <http://www.sciencedirect.com/science/article/pii/S0040402007012276>

**Vinod Kumar**, Abhishek Sharma, Meenakshi Sharma, Upendra Sharma and Arun K. Sinha, *Tetrahedron*, 2007, 63, 9718-

27. Remarkable Synergism in Methylimidazole-Promoted Decarboxylation of Substituted Cinnamic acids in basic water medium under Microwave Irradiation: A Clean Synthesis of Hydroxylated (*E*)-Stilbenes. <http://www.sciencedirect.com/science/article/pii/S0040402007009076>
- Vinod Kumar**, Abhishek Sharma, Anuj Sharma and Arun K. Sinha, *Tetrahedron*, 2007, 63, 7640-7646. *Impact Factor-2.80*
28. Microwave-assisted Mild Conversion of Natural Dihydrotagetone into 5-Isobutyl-3-methyl-4,5-dihydro-2(3H)-furanone: an Analogue of Whisky Lactone. <http://www.publish.csiro.au/paper/CH06380> Arun K. Sinha, Bhupender P. Joshi, Anuj Sharma, Vinod Kumar and Ruchi Acharya, *Aust. J. Chem.*, 2007, 60, 124-127. *Impact Factor-1.87*
29. An Efficient Chemoselective Strategy for the Preparation of (*E*)-Cinnamic Esters from Cinnamaldehydes Using Heterogeneous Catalyst and DDQ. <http://www.sciencedirect.com/science/article/pii/S004040200601773X> Arun K Sinha, Anuj Sharma, AnandSwaroop and **Vinod Kumar**, *Tetrahedron*, 2007, 63, 1000-1007. *Impact Factor-2.80*
30. Solid-supported Green Synthesis of Substituted Hydrocinnamic Esters by Focused Microwave Irradiation. <http://onlinelibrary.wiley.com/doi/10.1002/hlca.200690049/abstract> **Vinod Kumar**, Anuj Sharma and Arun K Sinha, *Helv. Chim. Acta*, 2006, 89, 483-495. *Impact Factor-1.38*
31. A Chemoselective Hydrogenation of the Olefinic Bond of  $\alpha,\beta$ -Unsaturated Carbonyl Compounds in Aqueous Medium Under Microwave Irradiation. <http://onlinelibrary.wiley.com/doi/10.1002/adsc.200505315/abstract> Anuj Sharma, **Vinod Kumar** and A. K Sinha, *Adv. Synth. Catal.*, 2006, 348, 354-360. *Impact Factor-5.53*
32. A Microwave-Accelerated Esterification of  $\alpha,\beta$ -Unsaturated Acids with Alkyl or Aryl Carbonochloridate and Triethylamine in Acetonitrile as a Novel Esterifying Reagent Mixture. <http://onlinelibrary.wiley.com/doi/10.1002/hlca.200590058/abstract> Vinod Kumar, Anuj Sharma and Arun K. Sinha, *Helv. Chim. Acta*, 2005, 88, 811-816. *Impact Factor-1.38*

## Patents

1. A green process for the preparation of substituted cinnamic esters with *trans*- selectivity; Sinha; A K, Sharma; A, Swaroop; A, **Kumar; V** (US 7,741,508, Jun. 2010)
2. A microwave induced process for the preparation of substituted stilbenes and its analogs; Sinha; A. K., **Kumar; V** and Sharma; A, (US20070276172, filed).
3. A Microwave Induced one Pot Process for the Preparation of Arylethenes; Sinha; A. K., **Kumar; V** and Sharma; A, (US 7,759,527, Jul 2010)

## Workshop/Conferences

Successfully attended “**Training Programme on Technological Entrepreneurship 2007**” held at Central Leather Research Institute (CLRI) Chennai, India, from Feb. 12 to March 11, 2007. The one month training was a composite management programme which was exclusively taught by the faculty of Indian Institute of Management (IIM), Bangalore and Ahamdabad. The programme touched upon areas like development of managerial skills, leadership qualities, innovative thinking, intellectual property management, communication skills and finance management

- Attended an orientation programme organized by University of Hyderabad from January 8, 2015 to February 04, 2015
- Attended refresher programme organised by Kurukshetra University, Kurukshetra from June 16 to July 6, 2015
- Attended refresher programme organised by HRDC HP University Shimla, Shimla from July 16 to August 5, 2017

## Conferences attended

1. Presented poster entitled “An Ecofriendly Method for Hydrogenation of Olefinic Compounds under Microwave Irradiation on a Solid support.” V. Kumar, A. K. Sinha and A. Sharma; at International Conference on Chemistry Biology Interface: Synergistic New Frontiers (CBISNF), PP24-66, November 21-26, 2004, Vigyan Bhawan, New Delhi, India.
2. Presented poster entitled “A Microwave Assisted Green Synthesis Of Bioactive Phenylpropanoid: Kekoul Occurring In *Asarum Sieboldii*” Vinod Kumar, Anuj Sharma and Arun K. Sinha at national conference on ‘Recent Trends In Synthetic And Polymer Chemistry ( RTSPC-1)’, PP-46, December 5-6, 2005, Himachal Pradesh university Shimla.
3. “Solid Supported Green Synthesis of (*E*)-cinnamaldehydes under Microwave Irradiations.” Anuj Sharma, Vinod Kumar, and Arun K. Sinha. (Second International Symposium on Green/Sustainable Chemistry. 10-13, January, 2006, University of Delhi, Delhi-110007 (India).
4. Presented poster entitled “Decarboxylation of Substituted Cinnamic acids in Basic Water Medium under Microwave Irradiation:

- A Green Synthesis of Hydroxylated (*E*)-Stilbenes.” Vinod Kumar, Abhishek Sharma and Arun K. Sinha. (CARBO-XXI, Recent developments in Carbohydrate Chemistry. PP 58, November 26-29, 2006, department of Chemistry, University of Delhi, Delhi-110007 (India).
5. “Comparison of different analytical techniques for the qualitative and quantitative determination of vanillin and related phenolic compounds in *Vanilla planifolia* pods.” Upendra K Sharma, Nandini Sharma, Ajai P Gupta, Vinod Kumar, Arun K. Sinha. National symposium on “Latest Developments in the Analytical Sciences.” PP-18, April 9-11, 2007, Department of Chemistry, Himachal Pradesh University Shimla.
  6. Presented poster entitled “Drug Abuse Treatment: Buprenorphine Derivatives as Potential Pharmacotherapies for Cocaine Abuse.” Vinod Kumar, Benjamin Greedy, Faye Bradbury, John Traynor and Stephen Husbands. Biological and Medicinal Chemistry 4<sup>th</sup> Post Graduate Symposium. Dec. 10, 2010, Department of Chemistry, Lensfield road, Cambridge, UK.
  7. Presented poster entitled “Synthesis, Biological Evaluation and SAR Studies of 14-phenylacetyl Substituted Naltrexone Derivatives”. Vinod Kumar, Lawrence Toll, Wilma Polgar, and Stephen Husbands. Neuroscience Network University of Bath Third Early-Career researcher’s Symposium May 10, 2011, University of Bath, Bath, UK.
  8. Poster presented by student entitled “Synthesis of Some Piperazine Containing Scaffolds as Potential MAO Inhibitors” Sheetal, Ashish Ranjan Dwivedi, and Vinod Kumar. 50<sup>th</sup> Annual Convention of Chemists; December 04-07, 2013; Department of Chemistry & Centre for Advanced Studies in Chemistry; Panjab University, Chandigarh
  9. Poster presented by student entitled “Design and *In Silico* Screening of Combretastatin Analogues as Potential Microtubule Polymerization Inhibitors” Vijender Saini and Vinod Kumar in a National Seminar on “Chemistry for Better Tomorrow: Current Trends and Challenges” March 8, 2014 at Postgraduate Department of Chemistry, Mata Gujri College Shri Fatehgarh Sahib, Punjab. (**First Prize**)
  10. Poster presented by student entitled “Ionic Liquid Mediated Regioselective Synthesis of Alkylimidazoles under Microwave Conditions and Their Antimicrobial Potential” Ashish Ranjan Dwivedi, Ramandeep Kaur, Sandeep Singh and Vinod Kumar in a National Seminar on “Chemistry for Better Tomorrow: Current Trends and Challenges” March 8, 2014 at Postgraduate Department of Chemistry, Mata Gujri College Shri Fatehgarh Sahib, Punjab, India.
  11. Poster presented by student entitled “*In Silico* Screening of 1-Benzhydrylpiperazine Derivatives as Putative MAO inhibitors” Bhupinder Kumar and Vinod Kumar in a Seminar on “Recent Trends in Molecular Medicine” December 5, 2014 at Central University of Punjab, Centre for Genetic Diseases and Molecular Medicine, Bathinda, Punjab, India
  12. Poster presented by student entitled “Design and *in silico* study of Imidazole Based Combretastatin as Putative Anticancer Agents” Sapna Kumari and Vinod Kumar in a Seminar on “Recent Trends in Molecular Medicine” December 5, 2014 at Central University of Punjab, Centre for Genetic Diseases and Molecular Medicine, Bathinda, Punjab, India.
  13. Poster presented by student entitled “Design and *in silico* Evaluation of putative Selective Estrogen Receptor Modulator Through Hybrid Molecular Approach” Shelly Pathania and Vinod Kumar in a Seminar on “Recent Trends in Molecular Medicine” December 5, 2014 at Central University of Punjab, Centre for Genetic Diseases and Molecular Medicine, Bathinda, Punjab, India
  14. Poster presented by student entitled “*In Silico* Screening of Combretastatin analogue as potential microtubule inhibitor” Vivek Prakash Gupta and Vinod Kumar in a Seminar on “Recent Trends in Molecular Medicine” December 5, 2014 at Central University of Punjab, Centre for Genetic Diseases and Molecular Medicine, Bathinda, Punjab, India
  15. Award presentation by student entitled “Design, Synthesis and Screening of Phenylpiperazine and 1-Benzhydrylpiperazine Derivatives as Putative MAO inhibitors” Bhupinder Kumar, Shelly Pathania and Vinod Kumar in a “51<sup>st</sup> Annual Convention of Chemists 2014” (**won prize**) held on December 9-12, 2014 at Department of Chemistry, Kurukshetra University, Kurukshetra, Haryana, India.
  16. Award presentation by student entitled “Design, Synthesis and *in silico* Studies of Imidazole-Based Combretastatin Analogues as Putative Anticancer Agents” Sapna Kumari, Vivek Prakash, Sandeep Singh and Vinod Kumar in a “51<sup>st</sup> Annual Convention of Chemists 2014” held on December 9-12, 2014 at Department of Chemistry, Kurukshetra University, Kurukshetra, Haryana, India.
  17. Attended an International conference on “Nascent Developments in Chemical Sciences: Opportunities for Academia-Industry Collaboration (NDCS-2015)” and a poster was presented by student entitled “Design, Synthesis and Screening of 1-Benzhydrylpiperazine Derivatives as Putative MAO Inhibitors” Bhupinder Kumar and Vinod Kumar; held on Oct. 16-18, 2015 at Department of Chemistry, BITS-Pilani, Rajasthan.
  18. Poster presentation by a students entitled Design, Synthesis and Evaluation of Pyrimidine Bridged Combretastatin Analogues as Putative Anti-Proliferative Agent” Harmeet, Vivek Kumar and Vinod Kumar in the International conference on “Nascent Developments in Chemical Sciences: Opportunities for Academia-Industry Collaboration (NDCS-2015)” held on Oct. 16-18, 2015 at Department of Chemistry, BITS-Pilani, Rajasthan.
  19. Poster presentation “Design, Synthesis and Evaluation of Pyrimidine Bridged Combretastatin Derivatives as Putative Antiproliferative Agents” Bhupinder Kumar, Sapna, Sandeep Singh and Vinod Kumar; in the International Symposium on Current Trends in Drug Discovery and Research (CTDDR)” held at CDRI Lucknow from Feb. 25-28, 2016.

### Research Grants

<b>UGC BSR</b>	<b>Rs 6,00,000.00</b>
<b>DST</b>	<b>Rs 30,09,600.00</b>
<b>BRNS</b>	<b>Rs 26,97,000.00 (Co-PI)</b>
<b>DST Scientist Exchange Grants</b>	<b>Rs. 10,00,000.00</b>



## **Other Achievements**

### **Technology Development:**

- Involved in the upscaling of process from lab scale for the synthesis of FEMA approved flavoring agent, vinyl guaiacol (FEMA No. 2675). The pilot scale technology has been successfully transferred to a reputed aroma industry.

### **Collaboration**

#### **International**

##### **Prof., Ira-Ida Skvortsova**

Department of Therapeutic Radiology and Oncology,  
University of Innsbruck, Innsbruck, Austria

#### **National**

##### **Dr. Damanpreet singh**

Scientist-C and Assistant Professor in Biological Sciences (AcSIR)  
Pharmacology and Toxicology Laboratory  
Division of Food and Nutraceuticals  
CSIR-Institute of Himalayan Bioresource Technology  
Palampur, H.P.-176061, India

##### **Dr. Sandeep Singh**

Centre for Genetic Diseases and Molecular Medicine  
Central University of Punjab,  
Bathinda