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Title	Professor	First Name	Ashok Kumar	Last Name	Prasad	Photograph
Designation		Professor				
Department		Department of Chemistry				
Address (Campus)		North Campus, University of Delhi, Delhi – 110 007				
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Education

Subject	Institution	Year	Details
Ph.D.	University of Delhi	1990	Subject: Chemistry
M.Phil.	University of Delhi	1987	Subject: Chemistry
M.Sc.	University of Bihar	1985	Subject: Chemistry
B.Sc.	University of Bihar	1983	Subject: Chemistry (Hons)

Career Profile

Organization / Institution	Designation	Duration	Role
University of Delhi	Professor	June 2009- todate	Teaching & Research
University of Delhi	Associate Professor	2001-2009	Teaching & Research
University of Southern Denmark, Denmark	Visiting Associate Professor	2008-2009	Honorary Position
Japan Advance Institute of Science Technology	Visiting Professor	2015-2018	Honorary Position
University of Delhi	Scientist 'B'	1996-2001	Research
University of Southern Denmark, Denmark	DANIDA (Denmark) Fellow	1992-1996	Research
Department of Chemistry, University of Delhi	Senior Research Associate	1991-1992	Research
Ranbaxy Research Laboratories, Delhi	Research Associate	1990-1991	Research

Research Interests / Specialization

Nucleic Acid Chemistry: Novel Synthesis of modified nucleosides of biological importance; *Biocatalysis and Biotransformations*: Green Synthetic Methodology Development; *Chemistry of Natural Products*: Isolation of Bioactive compounds; and Synthesis of Bioactive Heterocyclic Compound. Synthesis of Amphiphilic Polymers for Drug Delivery Applications. Carbohydrate Chemistry- Use of monosaccharides for the synthesis of important molecules.

Teaching Experience (Subjects/Courses Taught)

18 Years teaching experience: Organic Chemistry, Bioorganic Chemistry, Photochemistry and Pericyclic Reaction, Organic Reaction Mechanism.

Honors & Awards

- Visiting Professor at Japan Advance Institute of Science Technology, Nomi Ishikawa, Japan (2015-18)
- Excellence in Carbohydrate Research- 2015 by Association of Carbohydrate Chemists & Technologists (India)
- ISCB Award for Excellence in Chemical Sciences- 2014
- Honorary Diploma for Scientific Achievements and International Scientific Collaboration by Russian International Charitable Foundation "Scientific Partnership", Moscow, Russia (March 2013)
- Honorary Visiting Asso. Professor, Department of Physics and Chemistry, University of Southern Denmark, Denmark
- INBRE Lecture (June 2008)
- DANIDA (Denmark) Fellow: 1992-1996
- The CRSI Young Scientist Award- 2007

- Senior Research Fellow (1989): CSIR, New Delhi
- Junior Research Fellow (1986): CSIR, New Delhi
- Junior Research Fellow (1986): UGC-NET, New Delhi
- National Merit scholarship: Government of India, Sessions 1982-83 and 1983-84 during MSc

Publications

Books / Monographs

S. No.	Year of Publication	Title	Book	Co-Author
1.	2005	Biocatalytic Protecting Group Chemistry on Sugars, Nucleosides and their Analogs	Biocatalysis: Chemistry and Biology	Gaurav Shakya
2.	2017	Facile Access to Bromonucleosides Using Sodium Monobromoisocyanurate (SMBI)	Current protocols in nucleic acid chemistry, 68, 1391-1399.	Jyotirmoy Maity, Smriti Srivastava, YS Sanghvi, Roger Stromberg

In Indexed/ Peer Reviewed Journals

S. No.	Year of Publication	Title	Journal
1.	2015	Design and Synthesis of Triazole-Linked *xylo*-Nucleoside Dimers	*Nucleosides, Nucleotides and Nucleic Acids 34*, 388-399.
2.	2015	Synthesis of potential bioactive novel 7-[2-hydroxy-3-(1,2,3-triazol-1-yl)propyloxy]-3-alkyl-4-methylcoumarins.	*J. Heterocyclic Chem. 52*, 1-14.
3.	2015	Mild and Efficient Palladium / BrettPhos-catalyzed Methoxylation and deuteriomethoxylation of Activated Aryl Bromides.	*Tetrahedron Letts. 56*, 2234-2237.
4.	2015	Satructure-activity Relationship Studies of 4-Methylcoumarin Derivatives as Anticancer Agents	*Pharma. Biol.* **2015**, DOI: 10.3109/13880209.2015.1016183.
5.	2015	Self-assembly, Photoresponsive Behaviour and Transport Potential of Azobenzene Grafted Dendronized Polymeric Amphiphiles	*RSC Adv*. 5, 48301-48310
6.	2015	Highly Selective Biocatalytic Transeterifcation Reactions on Aryl 3-hydroxy-2-(hydroxymethyl)-2-methylpropanoates	*Catalysis Letters 145*, 919.
7.	2015	Facile Access to 5'-*S*-(4,4'-Dimethoxytrityl)-2',5'-dideoxyribonucleosides *via* Stable Disulfide Intermediates	*Current Protocols in Nucleic Acid Chemistry* DOI: 10.1002/0471142700.nc0134s62.
8.	2015	Anti-inflammatory and Antioxidant Properties of *Piper* Species: A Perspective from Screening to Molecular Mechanisms	*Current Topics Med. Chem.* **2015**, 15, 886-893.
9.	2015	Inhibition of Alzheimer's BACE-1 by 2,6-Dialkyl-4-chromon-3-yl-1,4-dihydropyridin-3,5-dicarboxylates.	*Med. Chem. Res*. **2015**, *24*, 3230-3241.
10.	2015	Nucleic Acid Based Therapeutics: Harnessing the Specificity	*Research Journal of Contemporary Concerns*. *9*(B), 3-8.
11.	2015	Facile Access to 5'-*S*-(4,4'-Dimethoxytrityl)-2',5'-Dideoxyribo-nucleosides *via* Stable Disulfide	*Current protocols in Nucleic Acid Chemistry*, **2015**, *62*, 1-9.

		Intermediates	
12.	2015	Synthesis of potential bioactive novel 7-[2-hydroxy-3-(1,2,3-triazol-1-yl)propyloxy]-3-alkyl-4-methylcoumarins	*J. Het. Chem.* **2015**, *52*, 1-14.
13.	2015	Design and Synthesis of Triazole-Linked *xylo*-Nucleoside Dimers	*Nucleosides, Nucleotides and Nucleic Acids* **2015**, *34*, 388-399.
14.	2015	Cu(I)-Catalyzed Efficient Synthesis of 2'-Triazolo-nucleoside Conjugates	*J. Het. Chem* **2015**, *52*, 701-710.
15.	2015	Biocatalytic route to C-3′-azido/-hydroxy-C-4′-spiro-oxetanoribo-nucleosides Biocatalytic route to C-3′-azido/-hydroxy-C-4′-spiro-oxetanoribo-nucleosides	*Carbohydrate Research* **2015**, *417*, 19-26.
16.	2015	Gapmer Oligonucleotides: Sugar-modified Wings to Antisense Therapeutics	*Trends Carbo. Res.* **2015**, *7*, 28-43.
17.	2015	A general, mild and efficient palladium-catalyzed 2,2,2-trifluoroethoxylation of activated aryl bromides and bromo-chalcones: bromo-chalcones a new coupling partner in cross-coupling reaction	*Tetrahedron* **2015**, *71*, 8307-8314.
18.	2015	Synthesis of β-*C*-Glycopyranosyl Aldehydes and 2,6-Anhydro-heptitols	*J. Org. Chem.* **2015**, *80*, 11169–11174.
19.	2016	Structure-activity relationship studies of 4-methylcoumarin derivatives as anticancer agents	*Pharmaceutical Biology*, **2016**, *54*, 105-110.
20.	2016	Triphenyl Phosphite-mediated "Green" Synthesis of Novel Carboxycoumarin Amides.	*Current Green Chemistry*, 3(4), 366-373.
21.	2016	Biocatalytic synthesis of novel partial esters of a bioactive dihydroxy 4-methylcoumarin by Rhizopus oryzae lipase (ROL).	*Molecules*, 21(11), 1499/1-1499/11.
22.	2016	Synthesis of macromolecular systems via lipase catalyzed biocatalytic reactions: applications and future perspectives.	*Chem. Soc. Rev.*, 45, 6855-6887.
23.	2016	Chemo-enzymatic synthesis of 3'-O,4'-C-methylene-linked α-L-arabinonucleosides.	*RSC Advances*, 6, 82432-82438.
24.	2016	Coumarin Derivatives as Adjuvants: From In Silico Physicochemical Characterization to In vitro Evaluation against Gram Positive Bacteria.	*Comb. Chem. High Throughput Screen,* 19, 489-496.
25.	2016	Hyperbranched glycerol-based core-amphiphilic branched shell nanotransporters for dermal drug 42. delivery.	*Polymer*, 96, 156-166.
26.	2016	Synthesis and anti-inflammatory activity evaluation of novel triazolyl-isatin hybrids.	*J. Enzyme Inhib. Med. Chem*, 31, 1520-1526.

27.	2016	Mitigation of radiation-induced hematopoietic injury by the polyphenolic acetate 7, 8-diacetoxy-4-methylthiocoumarin in mice.	*Science Reports*, 6, 37305.
28.	2016	Synthesis of β-C-Glycopyranosyl Aldehydes and 2,6-Anhydro-heptitols.	*J. Org. Chem*., 80, 11169–11174.
29.	2016	Synthesis of 3'-azido/-amino-xylobicyclonucleosides	*RSC advances* **2016**, *6*, 17713-17719.
30.	2016	Sugar-based novel chiral macrocycles for inclusion applications and chiral recognition	*Carbohydrate Res.* **2016**, *421*, 25-32.
31.	2017	Synthesis and biological properties of triazole-linked locked nucleic acid.	*Chemical Communications*, DOI: 10.1039/c7cc04092.
32.	2017	Lipase-mediated Synthesis of Sugar-PEG-based Amphiphiles for Encapsulation and Stabilization of Indocyanine Green.	*RSC Advances*, **2017**, 7, 37534-37541.
33.	2017	C-4'-spiro-oxetano-α-L-ribonucleosides	*Carbohydrate Research*, **2017**, *445*, 88-92.
34.	2017	Synthesis, pharmacological evaluation and molecular docking of pyranopyrazole-linked 1,4-dihydropyridines as potent positive inotropes.	*Molecular Diversity*, DOI: 10.1007/s11030-017-9738-7.
35.	2017	Chemoenzymatic synthesis, nanotization and anti-Aspergillus activity of optically enriched fluconazole analogues.	*Antimicrobial agents and chemotherapy*, DOI:10.1128/AAC.00273-17.
36.	2018	Protective effects of new antioxidantcompositions of 4-methylcoumarins andrelated compounds with DL- -tocopheroland L-ascorbic acid	*Journal of the Science of Food and Agriculture*, https://doi.org/10.1002/jsfa.8892
37.	2018	Biocatalytic route to C-4′-spiro-oxetano-xylofuranosyl pyrimidine nucleosides.	*Biocatalysis and Biotransformation*, https://doi.org/10.1080/10242422.2018.143816
38.	2018	Synthesis and Anti-tubercular Activity of 1-β-D-Ribofuranosyl-4-coumarinyloxymethyl- / -coumarinyl-1,2,3-triazole	*European Journal of Medicinal Chemistry*, **2018**, *150*, 268-281
39.	2018	Synthesis of novel 3'-azido-3'-deoxy-α-L-ribo configured nucleosides: A comparative study between chemical and chemo-enzymatic methodologies.	*Nucleoside, Nucleotide and Nucleic Acids*, https://doi.org/10.1080/15257770.2018.1460476
40.	2018	Synthesis of Novel 1-Glycosyl-4-aminomethyl-1,2,3-triazoles.	*Chemistry of Heterocyclic Compounds*, **2018,** *54(3)*, 362–368.
41.	2018	Synthesis of novel unsymmetrical coumarinyl-1,4-dihydropyridines	*Synthetic Communications*, https://doi.org/10.1080/00397911.2017.1416638
42.	2018	Design and synthesis of fluorescent symmetric bis-triazolylated-1,4-dihydropyridines as potent antibreast cancer agents	*Synthetic Communications*, https://doi.org/10.1080/00397911.20

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43.	2018	Mono and dihydroxy coumarin derivatives: Copper chelation and reduction ability	*Journal of Trace Elements in Medicine and Biology*, 2018, *46*, 88-95
44.	2018	Design, Synthesis and Evaluation of1H-1,2,3-Triazol-4-yl-methyl Tethered 3-Pyrrolylisatins as Potent Anti-Breas t Cancer Agents	*ChemistrySelect*, 2018, *3*, 5263 – 5268
45.	2018	Methyl-accepting chemotaxis like Rv3499c (Mce4A) protein in Mycobacterium tuberculosis H37Rv mediates cholesterol-dependent survival	*Tuberculosis*, 2018, *109*, 52-60
46.	2018	PDIM and SL1 accumulation in Mycobacterium tuberculosis is associated with mce4A expression	*Gene,* 2018, *642*, 178-187
47.	2019	Synthesis of 6'-methyl-2'-O,4'-C-methylene-α-L-ribofuranosyl-pyrimidine nucleosides	*ChemistrySelect*, 2019, *4*, 3241-3246
48.	2019	Isatin-Triazole-functionalized rhodamine: A dual sensor for Cu^{+} and Fe^{3+} ions and its application to cell imaging.	*ChemistrySelect*, 2019, *4*, 7532-7540
49.	2019	Biocatalyst CAL-B catalyzed synthesis of modified nucleosides: An overview.	*Synthetic Communications*, 2019, *49*, 1659-1678
50.	2019	Click synthesis of N^{1}-(β-D-ribofuranosyl)-C^{4}-(coumarin-4'-yl)-1,2,3-triazoles.	*Synthetic Communications*, 2019, *49*, 3140-3147.
51.	2019	Bamford-Stevens reaction assisted synthesis of styrene *C*-glycosides.	*Synthetic Communications* 2019, *49*, 1906-1912

Patents

1. Regioselective Acylation of Nucleosides **Ashok K Prasad**, Virinder S Parmar, Rajendra K Saxena and Gaurav Shakya, PCT: **WO2011 / 030353 (International PCT Application No. PCT/IN2010/000594)**.
2. Regioselective Acylation of Nucleosides **Ashok K Prasad**, Virinder S Parmar, Rajendra K Saxena and Gaurav Shakya, ***Indian Patent Application No. 1885/DEL/2009***.
3. Dihydropyrimidinone compounds for the treatment of cardiovascular diseases and process for preparing the same VS Parmar, HG Raj and **Ashok K Prasad** ***International Patent Application No. PCT/IN2009/000344***.
4. Coumarin Compounds for the treatment of Cardiovascular diseases and a process for preparing the same VS Parmar, HG Raj, SC Jain and **Ashok K Prasad** ***International Patent Application No. PCT/IN2009/000359***.
5. Dihydropyrimidinone compounds for the treatment of cardiovascular diseases and process for preparing the same VS Parmar, HG Raj and **Ashok K Prasad** ***Indian Patent Application 1414/DEL/2008***.
6. Coumarin Compounds for the treatment of Cardiovascular diseases and a process for preparing the same VS Parmar, HG Raj, SC Jain and **Ashok K Prasad** ***Indian Patent Application 1495/DEL/2008***.
7. Coumarin Compounds for the Treatment of Mycobacterial Infections. Virinder S Parmar, Ashok K Prasad, Sunil K Sharma, HG Raj, Rashmi Tandon and Mridula Bose ***International PCT Application No. PCT/IN2012/000242***.

Conference Presentations

1. Novel Anti-inflammatory Molecules from *Piper* Species at "Perspective and Challenges in Chemical and Biological Sciences" organized by IASST(Guwahati) and ISCBC(Lucknow), Guwahati, 28-30th Jan. 2012.

2. Glucose to Modified Nucleosides and pH sensitive Polymer for Drug Delivery Applications at "Frontiers in Pharmaceutical Sciences: Global Perspectives" organized by University of Rhode Island, USA, 28-30th Sept. 2012.

3. Glucose to pH sensitive Sugar-PEG Based Polymer and LNA Monomers: A Biocatalytic Approach at Department of Chemistry, Punjab University, 13-14th Feb. 2012.

4. Novel Nucleic Acid Architecture: Towards Antisense Drug Development at "Medicinal Chemistry and Pharmaceutical Sciences" organized by NIPER(RBL)-CDRI, Lucknow, 23-25th Feb. 2012.

5. Glucose to LNA and PEGylated Polymers for Targeted Drug Delivery Applications: Biocatalytic Approach at "National Seminar on Recent trends in Chemistry"organized by department of Chemistry, Sri Venkateshwara College, University of Delhi, 20-22 **M**arch 2012.

6. Biocatalysis: Synthesis of LNA and Sugar-PEG Based Co-Polymer for Drug Delivery Applications. Lucknow Univ. March 2012.

7. Greener Methodologies for Synthesis of LNA and Sugar-PEG Based Co-Polymer for Drug Delivery Applications. Professional Development Course, BHU, Varanasi, March 2012.

8. Natural Products and Their Analogs as Anti-inflammatory and Anti-TB Agents, BHU, Varanasi, March 2012.

9. Glucose to LNA, Nonionic Nucleoside Dimers and Sugar-PEG Based Co-Polymer for Drug Delivery Applications, Department of Chemistry, BITS, Pilani, May 2012.

10. Glucose to Modified Nucleosides and pH Sensitive Polymers for Drug Delivery Applications in National Conference CARBO XXVII on Prospects and Perspectives of Glycoscience and Allied Technology held at CFTRI, Mysore on 11 – 14 December 2012.

11. Chemoenzymatic Synthesis of Nucleosides and pH sensitive Sugar-PEG Co-Polymer of Importance at DRDE, Gwalior, Feb. 2013.

12. Glucose to Nucleosides and pH sensitive Sugar-PEG Based Co-Polymer of Importance: A Biocatalytic Approach at "Catalysis applied to biomass-towards sustainable processes and chemicals" organized by Universite De Technology De Compiegne, France, 12-13th March 2013.

13. at "21st ISCB International Conference (ISCBC- 2015) organized by CDRI Lucknow, 25-28 February 2015.

14. Biocatalytic route to therapeutically important sugar modified nuscleosides at "Catalysis applied to biomass-towards sustainable processes and chemicals" II organized by Universite De Technology De Compiegne, France, 27-28th March 2014.

15. Glucose to Novel Nucleosides and Macrocyclic Architectures, MS University Baroda, Badodara, 17 July 2015.

16. Glucose to Novel Nucleosides and Macromolecules of Importance, Gorakh University, 13 July 2015.

17. Sugar Based Chiral [2]Pseudorotaxane and Amphiphiles for Drug Delivery Applications. ICMR Laboratory, Bhubaneswar, April 2015.

18. Sugar Modification for the Synthesis of Novel Nucleosides, Amphiphiles and Macromolecules of Importance. Indi-Japan International Symposium at JAIST, Japan, 2-3 March 2015.

Total Publication Profile

Books: **2**

In Indexed/ Peer Reviewed Journals **240**

Patent **7**

Conference Presentations **18**

Professional Societies Memberships

- Membership of "International Society for Nucleosides, Nucleotides and Nucleic Acids", France
- Life membership of "Indian Science Congress Association", Calcutta
- Life member of "Chemical Research Society of India (CRSI)", Bangalore
- Life member of "Association of Carbohydrate Chemists and Technologists (India)"
- Life member of "Indian Society of Chemists and Biologists", Lucknow
- Life Member of "Biotechnology Research Society of India"

Projects (Major Grants / Collaborations)

Principal Investigator, DU-DST Purse Grant Research Project entitled "Enzyme-mediated transformations of potential applications in environment and pharmaceutical sectors" (2010-2013).

Principal Investigator, DBT Research Project entitled "Biocatalytic synthesis and development of PEG-sugar based polymeric architectures for applications in drug delivery" (2009-2013).

Principal Investigator, NMPB Research Project entitled "Development of natural products/natural-product based cardiovascular agents" (2010-2013).

Co-Principal Investigator, IGSTC Research Project entitled "Chemoenzymatic synthesis and development of biodegradable, structurally persistent core-shall nano-architectures for drug delivery applications" (2012-15).

Principal Investigator, DRDO Research Project entitled "Chemical Synthesis and Characterization of 7,8-Diacetoxy-4-Methylthiocoumrins for Evaluation of its in vitro efficacy in Radiprotection and Mitigation" (2012-13).

Principal Investigator, DRDO Research Project entitled "Synthesis and Studies on Fire Extinguishing Capabilities of Some Fluorophosphonodiesters and Fluorophosphotriesters" (2013-15).

Principal Investigator, DRDO Research Project entitled "Synthesis Characterization, Cytotoxicity and Cellular Uptake Study of Sugar-PEG Based Amphiphiles as Potential Delivery Agents" (2015-16).

Principal Investigator, Rasayan research project entitled "Synthesis of nucleoside- based bioactive compounds and their precursors" (2015-16).

Principal Investigator, DIPAS - CARS-12 Research Project entitled "Synthesis and study of Aggregation Behaviour of Sugar-PEG Based Amphiphilic Co-polymers for the Encepsuetion of Dihydropyridine Derivatives" (2017-18).

Principal Investigator, CFEES - DRDO Research Project entitled "Synthesis of Flame Retardent Polyurethrene (PU) based Adhesive" (2018-20).

Other Details

(Signature of Faculty Member)

(Signature & Stamp of Head of the Department)