

Faculty Details proforma for DU Web-site

Title	Professor	First	Shrikant	Last	Kukreti	Photograph
11010		Name		Name		1 notegraph
		Professor				
Address		Department of Chemistry				
		North Campus, University Of Delhi, Delhi				
		110007				1001
Phone No Office						12000
		+91-11-27666726				
Residence		C-11 (29-31) Probyn Road (Chatra Marg),				5.72
		University of Delhi				
		Delhi-110007				
(Residence) +9		+91-11-27	666729			
Mobile						
		+91-11-27				
Email		skukreti@chemistry.du.ac.in,				
		kukretishrikant@yahoo.com				
			ukreti6@gma			
			le.du.ac.in/~	-skukreti/		
Educational Qualifications						
Degree	:	Institution				Year
			versity of Roorkee (IITR)			1989
			nwal University (HNBGU)			1984
B.Sc. Garl		Garhwal U	nwal University (HNBGU)			1981
Career Profile						
Organisation /		Desig	gnation	Dura	tion	Role
Institu					00 D	
University of Delhi		Profe			09 - Present	Teaching and Research
University of Delhi			ciate Profess		$\frac{04 - \text{Sep.'09}}{24 - \text{Sep.'09}}$	Teaching and Research
Princeton University, Princeton, USA		V1S1t	ing Fellow	June	'04-Oct.'04	Research
		D 1		,	01 0 204	T 1' 1D 1
	sity of Delhi	Read			$\frac{01 - \text{Sep.'04}}{1 - \text{Sep.'04}}$	Teaching and Research
Institute Gustave Roussy Villejuif, Paris, France		•	ing Fellow	Oct.	98 – Jan.'99	Research
5	sity of Delhi	e Lectu	iror	Eab '	98-Aug.'01	Teaching and Research
	, Paris and Inst		Doctoral		98-Aug. 01 94-Oct.'97	Research
	e Roussy (CNR			Sep.	7-001.7	ixescareli
	f, Paris, France	· ·	vv			
Administrative Assignments						
Programme Coordinator, DU Pre-Entrance Summer School 2018, ILLL, DU						

Programme Coordinator, DU Pre-Entrance Summer School 2017, ILLL, DU Programme Coordinator, DU Pre-NET Winter School 2016, ILLL, DU Programme Coordinator, DU Pre-Entrance Summer School 2016, ILLL, DU Programme Coordinator, Workshop on Theory & Practical, UG Course on Biochemistry & Environmental Chemistry, Department of Chemistry, DU, July 2012. Coordinator, UGA-ASC CPDHE Refresher Course in Chemistry, December 2011. Resident Tutor, Jubilee Hall, Univ. of Delhi, Delhi (From July 2006 – May 2008.) Resident Tutor, V. K. R. V. Rao Hostel, Univ. of Delhi, Delhi, (From Oct. 2001-Sept.2004) **Areas of Interest / Specialization**

Biophysical and Biochemical aspects of Nucleic Acids, Multistranded-DNA/RNA structures (Triplexes, Quadruplexes etc.), Bimolecular interactions: DNA-Protein, DNA-Drug interactions (using UV-Spectroscopy, UV-thermal denaturation, Circular Dichroism, Fluorescence, High resolution NMR, Gel-filtration chromatography & Gel-electrophoresis (EMSA)

Subjects Taught

M.Sc. (Chemistry) Teaching, Post graduate level Chemistry,

<u>Core courses</u>- (i) Chemistry of Life processes, (ii) Stereochemistry (iii). Reaction Mechanism, <u>Special papers</u>: (i) Nucleic Acids and Carbohydrates, (ii) Proteins and lipids

M.Tech. (Chemical synthesis and Process Chemistry)- Chemistry of Life processes (Unit 204) M.Tech. (Nano Sciences and Nanotechnology)-Biochemistry and Biophysics (Course IX NSNT – 204)

Pre-Ph.D. course work: Biopolymers, Proteins & Peptides

Research Guidance

List against each head (If applicable)

- A. Supervision of awarded Doctoral Thesis- Nineteen
- B. Supervision of Doctoral Thesis, under progress-Seven
- C. Supervision of awarded M.Phil. dissertations- Six

Publications Profile

Publications of S. Kukreti (2016 - 2019)

- Singh, A., Kukreti, R., Sasso, L., Kukreti, S. (2019) Oxidative Stress: A Key Modulator in Neurodegenerative Diseases *Molecules 2019*, 24, 1583, 1-20.
- Komal, Sonia, Kukreti, S., Kaushik, M. (2019) Exploring the potential of environment friendly silver nanoparticles for DNA interaction: Physicochemical Approach *Journal of Photochemistry and Photobiology, B: Biology, 2019, Volume 194, 158-165.*

- **3.** Kaushik, M.; Khurana, S.; Mehra, K.; Yadav, N.; Mishra, S. K.; **Kukreti, S. (2018)** Emerging trends in Advanced Nanomaterials based electrochemical genosensors Current Pharmaceutical Design **2018**, 24.
- 4. Roy, K.; Mahendru,S; Kukreti, R.; Kukreti, S. (2018) Unusual Stability Exhibited by (AT) X N 12 (AT) Y Motif Associated With High Fetal Hemoglobin Levels. Journal of Biomolecular Structure & Dynamics, 2018. DOI: 10.1080/07391102.2018.1532320.
- 5. Kaushik, M.; Mahendru, S.; Chaudhary, S.; Kumar, M.; Kukreti, S. (2018) Prerequisite of a Holistic Blend of Traditional and Modern Approaches of Cancer Management, Current Cancer Therapy Reviews 2018. 14 DOI: 10.2174/1573394714666180417160750
- Urvashi; Tandon, V.; Das, P.; Kukreti, S. (2018) Synthesis of 3,6 Diaryl-1H-Pyrazolo[3,4-b]Pyridines via One-pot Sequential Suzuki-Miyaura Coupling. RSC Adv., 2018, 8, 34883.
- 7. Singh, A.; Kukreti, S. (2018) Homoduplex to i-motif structural switch exhibited by a Cytosine rich strand of MYH 7 heavy chain β gene promoter at physiological pH. RSC Advances 2018, 8, 60, 34202-34214.
- 8. Singh, A. and Kukreti, S. (2018)
 A Triple Stranded G-Quadruplex Formation In The Promoter Region of Human Myosin β (MYH7) Gene.
 Journal of Bimolecular Structure & Dynamics 2018, 36, 11, 2773-2786.
- 9. Kaushik, M., Mahendru, S., Kumar, M., Chaudhary, S., Ahmed, S., Sonia, Kukreti, S. (2018)
 Overview of Chemoresistance in Cancerous Cells.

Frontiers in Drug Design & Discovery **2018**, Vol. 9.

- 10. Kumar, M.; Kaushik, M.; Kukreti, S. (2018) A topological transition from bimolecular quadruplex to G-triplex/tri-G-quadruplex exhibited by truncated double repeats of human telomere. European Biophysics Journal 2018,
- 11. Talwar, P., Gupta, R., Kushwaha, S., Agarwal, R., Saso, L., Kukreti, S., Kukreti, R. (2018)

Viral induced oxidative and inflammatory response in Alzheimer's disease pathogenesis with identification of potential drug candidates: A systematic review using systems biology approach. Curr Neuropharmacol. 2018 Apr 19.

- 12. Sonia, Komal, Kukreti S., Kaushik, M. (2018) Exploring the DNA damaging potential of chitosan and citrate-reduced gold nanoparticles: Physicochemical approach. Int J Biol Macromol. 2018 pii: S0141-8130(18)31220-0.
- Chaudhary, S., Kaushik, M., Ahmed, S., Kukreti, R. and Kukreti, S. (2018) Structural Switch from Hairpin to Duplex/Antiparallel G-Quadruplex at Single-Nucleotide Polymorphism (SNP) Site of Human Apolipoprotein E (APOE) Gene Coding Region ACSOmega 2018, 3, 3173–3182.
- 14. Ahmed, S., Kaushik, M., Chaudhary, S., Kukreti, S. (2018) Formation of G-wires, bimolecular and 2 tetramolecular quadruplex: Cation-induced structural 3 polymorphs of G-rich DNA sequence of human SYTX gene Biopolymers. 2018, 613e23115.
- 15. Ahmed, S., Kaushik, M., Chaudhary, S., Kukreti, S. (2018)
 Structural polymorphism of a cytosine-rich DNA sequence forming i-motif structure: Exploring pH based biosensors
 Int J Biol Macromol. 2018 Jan 10; 111: 455-461.
- 16. Guin, D., Mishra, M. K., Talwar, P., Rawat, C., Kushwaha, S., Kukreti, S., Kukreti, R. (2017)
 A systematic review and integrative approach to decode the common molecular link between levodopa response and Parkinson's disease
 BMC Medical Genomics 2017 10(1):56.
- Kaushik, M., Sonia, Mahendru, S., Tyagi, P. and Kukreti, S. (2017) Multiple dimensions of functional relevance of genosensors Integrated Ferroelectrics 2017, 184, 1-10.
- 18. Chaudhary, S., Kaushik, M., Kukreti, R., Kukreti, S. (2017) Structural switch from a multistranded G-quadruplex to single strands as a consequence of point mutation in the promoter of the human GRIN1 gene. Molecular Biosystems 2017, 13, 1805-1816 [DOI: 10.1039/c7mb00360a]
- 19. Thakral, P., Kukreti, S., Bakhshi, A. K. (2017) In silico metaheuristic tailoring of quaternary copolymers Emerging Materials Research 2017, 6, 2, 1-9, [DOI.org/10.1680/jemmr.15.00054
- **20.** Saxena, S., Joshi, S., Shankaraswamy, J., Tyagi, S., **Kukreti, S. (2017)** Magnesium and molecular crowding of the cosolutes stabilize the i-motif structure at

physiological pH Biopolymers **2017**, 107, 7, e23018.

- 21. Grewal, G. K., Kukal, S., Kanojia, N., Saso, L., Kukreti, S., R. Kukreti. (2017)
 Effect of Oxidative Stress on ABC Transporters: Contribution to Epilepsy Pharmacoresistance.
 Molecules 2017, 22(3)
- 22. Talwar, P., Kanoji, N., Mahendru, S., Baghel, R., Grover, S., Arora, G., Grewal, G. K., Parween, S., Srivastava, A., Singh, M., Vig, S., Kushwaha, S., Sharma, S., Bala, K., Kukreti, S. and Kukreti, R. (2017)
 Genetic contribution of CYP1A1 variant on treatment outcome in epilepsy patients: a functional and interethnic perspective.
 The Pharmacogenomics Journal 2017, 17, 242-251.
- 23. Mahendru, S., Roy, K., Kukreti, S. (2017) Peptide Biomarkers: Exploring the Diagnostic Aspect Current Protein & Peptide Science 2017, 18, 914-919.
- 24. Tomar, V., Chandra, R., Prakash, S., Madan, J., Kukreti, S. (2017) New Cancer Therapeutics: Noscapine and Analogs. Current topics in medicinal chemistry 2017, 17, 174-188.
- 25. Pasricha, S., Sharma, D., Ojha, H., Gahlot, P., Pathak, M., Basu, M., Chawla, R., Singhal, S., Singh, S., Goel, R., Kukreti, S., Shukla, S. (2017) Luminescence, circular dichroism and in silico studies of binding interaction of synthesized naphthylchalcone derivatives with bovine serum albumin. Luminescence 2017, Volume 32, Issue 7,
- 26. Kaushik, M., Singh, A., Kumar, M., Chaudhary, S., Ahmed, S., Kukreti, S. (2017) Structure-Specific Ligand Recognition of Multistranded DNA Structures. Current topics in medicinal chemistry 2017, *17*, 138-147.
- 27. Kaushik, M., Chaudhary, S., Mahendru, S., Ahmed, S., Pathak, A. K., Kukreti, S. (2017)
 MicroRNA: A Multi-Facet Biological Target for Cancer and other Diseases. Clinical Cancer Drugs 2017, 4(1), 2-9.
- 28. Prakash, S., Hazari, P. P., Meena, V. K., Jaswal, A., Khurana, H., Kukreti, S., Mishra, A. K. (2016)
 Biotinidase Resistant ₆₈Gallium-Radioligand Based on Biotin/Avidin Interaction for Pretargeting: Synthesis and Preclinical Evaluation.
 Bioconjug Chem. 2016, Nov 16; 27(11):2780-2790. Epub 2016 Oct 21.
- 29. Kaushik, M., Chaudhary, S., Mahendru, S., Kumar, M., Kukreti, S. (2016)

Genetic variations: Heroes or villains. Journal of Down Syndrome & Chromosome Abnormalities **2016**, 2:2.

- 30. Kumar, M., Kaushik, M., Chaudhary, S., Kukreti, S. (2016) Spectroscopic Studies of the Binding Interactions of Phenothiazininum Dyes (Thionine Acetate, Azure A and Azure B) with Calf-thymus DNA. Journal of Drug Metabolism & Toxicology 2016, 7:3.
- 31. Kumar, M., Kaushik, M., Kukreti, S. (2016) Interaction of an electrochemical redox indicator new methylene blue with DNA using biophysical techniques DOI: 10.5185/amp.2016/108
- 32. Kaushik, M., Mahendru, S., Chaudhary, S., Kukreti, S. (2016) DNA Fingerprints: Advances in their Forensic Analysis Using Nanotechnology. Journal of Forensic Biomechanics 2016, 8:1.
- **33.** Kaushik, M., Kumar, M., Chaudhary, S., Mahendru, S., **Kukreti, S. (2016)** Advancements in Characterization Techniques of Biomolecules: Cyclic Voltamettry, Gel Electrophoresis, Circular Dichroism, and Fluorescence Spectroscopy. Advanced Techniques in Biology and Medicine **2016**, 4:3.
- 34. Kaushik, M., Mahendru, S., Kumar, M., Chaudhary, S., Kukreti, S. (2016) Genomic Databases and Softwares: In pursuit of Biological relevance through Bioinformatics. Advanced Techniques in Biology and Medicine 2016, 4:3.
- 35. Kaushik, M., Sinha, P., Jaiswal, P., Mahendru, S., Roy, K., Kukreti, S. (2016) Protein engineering and de novo designing of a biocatalyst. Journal of Molecular Recognition 2016, 10, 499-503.
- **36.** Kaushik, M., Kaushik, S., **Kukreti, S.** (**2016**) Exploring the characterization tools of Guanine-Quadruplexes. Frontiers in bioscience (Landmark edition) **2016**, 21, 468-478.
- 37. Kaushik, M., Kaushik, S., Roy, K., Singh, A., Mahendru, S., Kumar, M., Chaudhary, S., Ahmed, S., Kukreti, S. (2016)
 A bouquet of DNA structures: Emerging diversity. Biochemistry and Biophysics Reports 2016, 5, 388-395.
- 38. Pathak, M., Mishra, R., Agarwala, P. K., Ojha, H., Singh, B., Singh, A., Kukreti, S. (2016)
 Binding of ethyl pyruvate to bovine serum albumin: Calorimetric, spectroscopic and molecular docking studies

Thermochimica Acta 2016, 633, 140-148.

- 39. Kaushik, S., Kukreti, S. (2016) General techniques for biomolecular characterization. Imperial Journal of Interdisciplinary Research 2016, 2(6), 998-1002.
- 40. Hazari, P. P., Prakash, S., Meena, V.K., Singh, N., Chuttani, K., Chadha, N., Singh, P., Kukreti, S., Mishra, A. K. (2016)
 Synthesis, preclinical evaluation and molecular modelling of macrocyclic appended 1-(2-methoxyphenyl) piperazine for 5-HT 1A neuroreceptor imaging.
 RSC Advances 2016, 6(9), 7288-7301.

Book Chapter

 Kaushik, M., Chaudhary, S., Khurana, S., Mehra, K., Kukreti, S. (2019) Decoding DNA Structure using NMR Spectroscopy DOI:10.2174/9781681086415118070007 In the Book: Application of NMR Spectroscopy: Volume 7

Conference Organization/ Presentations (in the last three years)

Poster Presentations

- Polymorphic Behaviour of A DNA Sequence Present At The Intersection Of Human Comt And Mir4761 Gene Srishty Gulati, Nishu, Md Shoaib, **Shrikant Kukreti** 6th World Congress on Nanomedical Sciences organized by Jamia Hamdard & University of Delhi, Delhi, 7th Jan-9th Jan, **2019**. (Best Poster Award)
- Structural Polymorphism exhibited by G-rich sequences in Human WT1 gene Md Shoaib, Nishu, Srishty Gulati, Shrikant Kukreti 6th World Congress on Nanomedical Sciences organized by Jamia Hamdard & University of Delhi in January, 2019.
- Eukaryotic Telomeric Sequence Under Methylation Nishu, Srishty Gulati, Md. Shoaib, Shrikant Kukreti 6th World Congress on Nanomedical Sciences organized by Jamia Hamdard & University of Delhi, Delhi, 7th Jan-9th Jan, 2019.
- Environment-friendly silver nanoparticles: Investigating the interaction with Calf- Thymus DNA and catalytic reduction of dyes Komal, Sonia, Shrikant Kukreti, Mahima Kaushik
 6th World Congress on Nanomedical Sciences organized by Jamia Hamdard & University of Delhi, Delhi, 7th Jan-9th Jan, 2019.
- 5. Fluorescent sensor based on protein directed gold nanoclusters for the detection of silver

ions and anticancer drugs

Sonia, Komal, Shrikant Kukreti, Mahima Kaushik

6th World Congress on Nanomedical Sciences organized by Jamia Hamdard & University of Delhi, Delhi, 7th Jan-9th Jan, **2019**.

- 6. A Physicochemical approach to study and compare the genotoxic potential of chitosan and citrate reduced gold nanoparticles towards calf thymus DNA Sonia^a, Komal^a, Shrikant Kukreti^a, Mahima Kaushik^{a,b,*}; International Conference on Emerging Trends in Drugs Development and Natural-Products" (January 12-14, 2018)
- 7. A Physicochemical approach to study the genotoxic potential of chitosan and citrate reduced gold nanoparticles towards calf thymus DNA: A physicochemical approach <u>Sonia</u>^a, Komal^a, **Shrikant Kukreti**^a, Mahima Kaushik^{a,b}* One-day Indo-Hungarian symposium on "Recent advances in chemistry and biology" (INHCAB-2017) (11 December, 2017)
- An environmentally benign approach to synthesize Silver nanoparticles using *Epipremnum aureum* leaf extract and its interaction studies with Calf Thymus DNA Komal^a, Sonia^a, Shrikant Kukreti^a, Mahima Kaushik^{a,b}*; One-day Indo-Hungarian symposium on "Recent advances in chemistry and biology" (INHCAB-2017) (11 December, 2017)
- In Search of G-Quadruplex Ligand Anju Singh, Arkaja Goswami, Savita Joshi, Shrikant Kukreti Conference Proceeding in National Conference NCC2016 "Environment & Harmonious Development at Shyam Lal College, University of Delhi, India, 7th-8th April, 2016.
- Interaction of an electrochemical redox indicator New Methylene Blue with DNA using biophysical techniques Mohan Kumar, Mahima Kaushik, Shrikant Kukreti International Conference on Materials Science & Technology (ICMTech -2016) a Department of Chemistry, University of Delhi, India, 1st - 4th March, 2016
- 11. To explore the structural difference between the ε3 and ε4 allele SNP of the humar apolipoprotein (APOE) gene
 Swati Chaudhary, Saami Ahmed, Shrikant Kukreti
 22nd ISCBC International Conference, Recent Trends in Affordable and Sustainable drug discovery and developments at Uka Tarsadia University, Surat, India, 6th 8th Feb, 2016
- Structural polymorphism exhibited by a quasipalindrome present in Human SCAI gene Saami Ahmed, Swati Chaudhary, Shrikant Kukreti
 22nd ISCBC International Conference, Recent Trends in Affordable and Sustainable drug discovery and developments at Uka Tarsadia University, Surat, India, 6th – 8th Feb, 2016

Oral Presentations

 Recognition Of G-Quadruplexes Formed At Promoter Location Of Human Myosin Heavy Chain B Gene (Myh7β) By Natural Alkaloids Anju Singh and Shrikant Kukreti 6th World Congress on Nanomedical Sciences organized by Jamia Hamdard & University of Delhi, Delhi, 7th Jan-9th Jan, **2019**.

- 2. Recognition and destabilization of Parallel G- quadruplex present in Promoter location of Human MYH7gene
 - Anju Singh and Shrikant Kukreti,

Emerging Trends in Drugs Development and Natural-Products (ETDDNP-2018) organized by the Department of Chemistry, University of Delhi, Delhi, India, Jan 12th -14th, **2018**.

- Nucleic Acids : Isolation, Purification & Characterization Faculty Development Program, Daulat Ram College, University of Delhi, Delhi, India 15th -22nd June 2017
- Anti-gene approach: Targeting Genomic Sites International Conference on Structure and Dynamics of Biomolecules, DDU Gorakhpur University, January 27th -28th, 2017.
- Unveiling the Environmental aspect of Biomolecules National Conference on Sustainable Chemical & Material Sciences organized by Department of Chemistry, S. S. Jain Subodh P.G. College, Jaipur, India 5th – 6th August 2016.
- Chemistry of Biomolecules: Unveiling the Environmental Aspects National Conference in Chemistry, Environment & Harmonius Development organized by Shyam Lal College, University of Delhi, Delhi, 7th – 8th April 2016

Research Projects (Major Grants/Research Collaboration)

Research and Development Grant from University of Delhi (2010-2016)

Principal Investigator, DU/DST Purse Grant, "DNA-Protein Interactions: Exploring the Sequence and Structure Specificity", (2009-2011)

Principal Investigator, DST project, "Physicochemical and biochemical investigation of Highly Stable Pyrimidine and Purine Motif DNA triple helical structure", (2004-2007)

Principal Investigator, DBT project, Biophysical and Biochemical Investigations of the Polymorphic DNA Sequences Present in the Regulatory Regions of the β -Globin Gene Cluster", (2004-2007)

Principal Investigator, UGC project, Multi-stranded DNA Recognition: Use of Synthetic ligands (2002-2005)

Awards and Distinctions

Visiting Fellowship, Institute Gustave Roussy, Villejuif, France. [Oct, 1998 to Jan. 1999] Postdoctoral fellowship awarded by **Foundation Pour La Recherche Medicale**, and CNRS, Paris. [Jan 96 - Oct.97].

Marie Curie fellowship awarded by **Commission of European Community (CEC). DST**, Govt. of India [Sept.94 - Oct95].

Teaching & Research Associateship at **Center for Biotechnology**, Jawahar Lal Nehru University, New Delhi. [Aug.91 - Jul.94].

Research Associateship (DST Project) at Center for Biotechnology, Jawahar Lal Nehru University, New Delhi [Jan.90-Jul.91].

Senior Research Fellowship from DST, Govt. of India [1989] Ph. D. Period.

Junior Research Fellowship DST, Govt. of India. [1985-1988] Ph.D. period

Association With Professional Bodies

1. Committees and Boards:

(a) Chairman, Central Pool Grivence Committee, University Of Delhi. (2015-Till Date)

(b) Member, Governing body, Keshav Mahavidyalaya (KMV) DU (2016-).

(c) Member, Panel of Experts, Indo-Us Joint Proposals Review Meet (2012-15) IUSSTF Delhi

(d) Member, Governing body, Hansraj College, DU. (2013-15)

(e) Member, Governing body, Shyamlal College, DU. (2013-15)

(f) UGC-SAP member, Chemistry Dept., Aligarh Muslim University, Aligarh, Uttar Pradesh.

(g) Board of Studies, LMS Govt. College, Rishikesh, Uttrakhand

(h) Member, Committee of Courses for PG including honors courses Delhi University(h)

(i)Member, DST delegation to Ljubljana, Slovenia for participation in Indo-Slovenian JWG meeting, DST, Govt. of India (Nov'10)

(j) Member, DST delegation to Athens, Greece, for participation in Indo-Greece JCST meeting (Nov'10)

(k) Member of delegation to Stockholm, Sweden for participation in JSTC meeting to Department of Science and Technology (Sep'10)

(1) Member, Panel Members for joint projects (2010) Indo-Australian Strategic Research Fund (m) Member Expert Committee, DST, Govt. of India, for evaluation of Indo-South Africa joint projects (2010).

(n) Member, Composite Expert Committee at DST, Govt. of India, for International Cooperation Programmes (2010) "Indo-Austria/ Norway/ South Africa/ Israel/ Japan" research proposals.

2. Memberships

Life Member, Indian Biophysical Society (IBS)

Life Member, National Magnetic Resonance Society (NMRS)

Life Member, Indian Science Congress (ICS)

Life Member, DNA society of India (DSI)

Prof. Shrikant Kukreti

Signature of Faculty Member