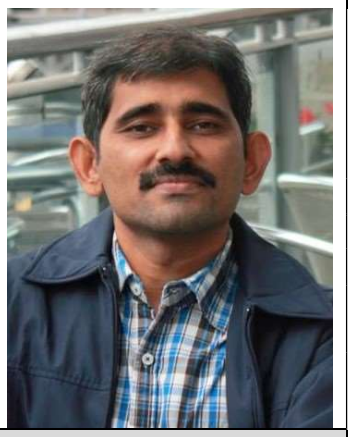
Faculty Details proforma for DU College Web-site

Title	Prof	First Name	Pankaj	Last Name	Khanna	Photograph
Designation		Professor				
Address		Department of Chemistry Acharya Narendra Dev College (University of Delhi) Govindpuri, Kalkaji New Delhi-110019				
Phone No						
Residence						
Mobile		9818009250				
Email		pankajkhanna@andc.du.ac.in kpankaj6@yahoo.co.in				
Web-Page		https://khannapankaj.wordpress.com/ http://wikieducator.org/User:Pankaj_K				

Educational Qualifications

Degree	Institution	Year
B.Sc.(H) Chemistry	University of Delhi	1998
M.Sc. Chemistry	University of Delhi	2000
Ph.D. Chemistry	University of Delhi	2006
PG Diploma Intellectual Property Rights	IGNOU	2011
Two Year Diploma in Computer Applications	NIIT	

Career Profile

Organisation/ Institution	**Designation**	**Duration**	**Role**
Acharya Narendra Dev College (DU)	Professor	2020-Present	Teaching, research and administrative
Acharya Narendra Dev College (DU)	Associate Professor	2017 – 2020	Teaching, research and administrative
Acharya Narendra Dev College (DU)	Assistant Professor Level 12	2014 – 2017	Teaching, research and administrative
University of Delhi	Vice Chancellor's Fellow	2014	On Deputation
Acharya Narendra Dev College (DU)	Assistant Professor AGP 7000	2009 (Aug)-2013	Teaching, research and administrative

Acharya Narendra Dev College (DU)	Assistant Professor AGP 6000	2009 (April)-2009 (Aug)	Teaching and administrative
Deen Dayal Upadhyaya College (DU)	Assistant Professor AGP 6000	2006-2009	Teaching
Shivaji College (DU)	Assistant Professor AGP 6000	2005-2006	Teaching
S.G.T.B. Khalsa College (DU)	Lecturer	2003-2004	Teaching

Administrative Assignments

Member of Committee for revision of various syllabi:

i. Core Committee Member of UGCF-2022 Syllabus, Department of Chemistry, University of Delhi (2022-2023).
ii. Co-convener and Member of various committees under LOCF revision, Department of Chemistry, University of Delhi (2019).
iii. B.Sc. (Hons.) Chemistry erstwhile FYUP mode, Department of Chemistry, University of Delhi (2012-13).
iv. B.Sc. (Hons.) Chemistry Semester mode, Department of Chemistry, University of Delhi (2009).
v. B.Sc. (Prog.) Chemistry Semester mode, Department of Chemistry, University of Delhi (2009).
vi. Third Year Chemistry Course of the restructured B.Sc. (Prog.), Department of Chemistry, University of Delhi (2007).

College Committees:

- **IQAC Member** (2021- Present)
- **Convener** Admission committee (2022-24)
- SOL examination committee (**Superintendent and Deputy Superintendent**)
- **Convener** of IT committee (2012-2014 (Jan.) and 2014 (Sep.)-2016) (In-charge of college website)
- **Convener** of Abhikriya (The Chemistry Society, 2018-2020)

Member of :

- Anusandhan Kosh
- Central Purchase committee (2010-2013)
- IT committee (2009-2012, 2022-24)
- NSS committee (2010-2012 and 2018-2020)
- Annual Events Management committee (2009-2010)
- Alumni Affairs committee
- Editorial committee

Areas of Interest / Specialization

Specialization

- Synthetic Organic and Natural Products Chemistry

Research Interest:

- Synthesis of novel heterocyclic systems of medicinal interest and drug discovery
- In silico studies including Molecular Docking and ADME analysis

- Isolation and structure elucidation of natural compounds
- Interdisciplinary research for Chemistry education
- Flipped classroom and Blended learning (Using blog: https://khannapankaj.wordpress.com/)

Subjects Taught

Organic Chemistry Papers of B.Sc. (H) Chemistry and B.Sc. (Prog.)

Intellectual Property Rights (SEC paper) of B.Sc. (H) Chemistry and B.Sc. (Prog.)

Research Guidance

Recognized as a **PhD Supervisor** by the Department of Chemistry, University of Delhi

Undergraduate Research guidance:

- Innovation projects (2012, DU)
- Innovation projects (2015, DU)
- IEDC project (DST-ANDC)
- ELITE-Summer Projects (ANDC).

Publications Profile

Patents:

1. *Withania somnifera* plant extract and method of preparation thereof. Vijayalaksmi Ravindranath, Alok Gupta, Neha Sehgal, Subhash C. Jain, Suman Thakur and **Pankaj Khanna**. **PCT**/IN2009/000430, Pub. No.:WO/2010/013254, Pub. on **04.02.2010**

i) **US Patent Granted** on 09.07.2013, No. US 8,481,087 B2. Earlier Pub No. US20110229591 A1, Pub. on 22.09.2011.

ii) **Chinese Patent Granted** on 17.10.2012, no. CN102076349 B. Earlier Pub No. CN102076349 A, Pub. on 25.05.2011.

iii) Australian Patent, Pub No. 2009277963, Pub. On 13.01.2011

iv) European Patent, Pub No. 2009787611, Pub. On 11.05.2011

Research Papers Published (Available on https://khannapankaj.wordpress.com/publications/**):**

Year of Publication	**Title**	**Journal**	**Co-author/s**
2023	Copper-Bisbenzimidazole Complexes as Biomimetic Catalysts in Organic Transformations.	*Mini-Rev. Org. Chem.*, **2023**. DOI:10.2174/1570193X20666230102105854 (E-pub ahead of print)	Manisha Jain, Shilpa Yadav, Mansi, Neeti Misra and Leena Khanna.
2022	Hydrotrope assisted green synthesis of dicoumarols and *in silico* and *in vitro* antibacterial, antioxidant and xanthine	*Journal of Biomolecular Structure and Dynamics*, **2022**. DOI:10.1080/07391102.20	Mansi, Deepshikha Gupta, Shilpa Yadav & Leena Khanna

	oxidase inhibition studies.	22.2145368 (**Impact factor 5.23**)	
2022	An understanding of coronavirus and exploring the molecular dynamics simulations to find promising candidates against the Mpro of nCoV to combat the COVID-19: A systematic review.	*Journal of Infection and Public Health*, **2022**. 15(11), 1326-1349. (**Impact factor 7.53**) DOI:10.1016/j.jiph.2022.10.013	Madhur Babu Singh, Ritika Sharma, Durgesh Kumar, Mansi, Leena Khanna, Vinod Kumar, Kamlesh Kumari, Akanksha Gupta, Preeti Chaudhary, Neha Kaushik, Eun Ha Choi, Nagendra Kumar Kaushik, Prashant Singh
2022	A DFT Study on Diels-Alder Reaction of Dibenzazepine and 2,5-Dimethylfuran Using Different Solvents and Temperature Conditions.	*Polycyclic Aromat. Compd.*, **2022**. DOI:10.1080/10406638.2022.2056622	Shilpa Yadav, Neeti Misra, Mansi, Kriti Batra and Leena Khanna.
2021	"In water" synthesis of bis(indolyl)methanes: a review.	*Synth. Commun.*, **2021**, 51(19), 2892-2923. DOI:10.1080/00397911.2021.1957113	Leena Khanna, Mansi, Shilpa Yadav and Neeti Misra.
2021	Multitarget Diallyl Disulfides (DADS) against Aβ Aggregation: Screening through Molecular Docking with $A\beta_{42}$ & Zn^{II}-$A\beta_{16}$, ADME, DFT & Synthetic Strategy.	*ChemistrySelect*, **2021**, 6(17), 4112-4123. DOI:10.1002/slct.202004635	Sugandha Singhal, Neeti Misra and Leena Khanna.
2021	Synthesis, Comparative *in vitro* Antibacterial, Antioxidant & UV fluorescence studies of bis Indole Schiff bases and Molecular docking with ct-DNA & SARS-CoV-2 M^{pro}.	Luminescence. **2021**, DOI: 10.1002/bio.4098.	Sugandha Singhal and Leena Khanna.
2020	Spiro-Indole-Coumarin Hybrids: Synthesis, ADME, DFT, NBO Studies and In Silico Screening through Molecular Docking on DNA G-Quadruplex.	*ChemistrySelect*, **2020**, 5(11), 3420-3433. DOI:10.1002/slct.201904783	L. Khanna, S. Singhal and Subhash C. Jain.
2019	Recent trends in synthesis of benzimidazoles from o-phenylenediamine via	*J. Heterocycl. Chem.*, **2019**, 56, 2702– 2729. DOI:10.1002/jhet.3649	S. Singhal and L. Khanna.

	nanoparticles and green strategies using transition metal catalysts.		
2019	Synthesis, DFT studies, molecular docking, antimicrobial screening and UV fluorescence studies on ct-DNA for novel Schiff bases of 2-(1-aminobenzyl) benzimidazole.	*Heliyon*, **2019**, 5, e02596. DOI:10.1016/j.heliyon.2019.e02596	S. Singhal and L. Khanna.
2019	Hepatic lipoprotein receptor related protein modulators as potential therapeutics for Alzheimer's disease (Poster proceedings)	*Alzheimer's & Dementia*, 2019 15, 7(suppl.), P271 https://www.sciencedirect.com/science/article/abs/pii/S1552526019308015#!	A. Ramachandran, K.V. Rupanagudi, M. Chand, S.C. Jain, H. SaranyaIlamathi, S.S. Thakur, V. Ravindranath
2018	Protective effects of *Aporosa octandra* bark extract against D-galactose induced cognitive impairment and oxidative stress in mice.	*Heliyon*, **2018**, 4, e00951. DOI:10.1016/j.heliyon.2018.e00951	S.S. Panda, A.S. Girgis, A. Prakash, L. Khanna, E.M. Shalaby, N.G. Fawzy and S.C. Jain.
2018	A concise synthesis of 2-alkenyl-3-phenyl-4H-chromen-4-ones via novel C-C bond formation using sulfone as potential intermediate	*Ind. J. Chem.*, **2018**, 57B, 945-954. http://nopr.niscpr.res.in/handle/123456789/44751	L. Khanna and Subhash C. Jain.
2018	Microwave Assisted Synthesis of Spiro Heterocyclic Systems: A Review.	*Curr. Org. Chem.*, **2018**, 22, 67-84 DOI:10.2174/1385272821666170818161517	L.Khanna, S.J. Thomas, A.M. Asiri and S.S. Panda.
2014	Aqua mediated synthesis of spirocyclic compounds.	*Mini-Rev. Org. Chem.*, **2014**, 11, 73-86. DOI:10.2174/1570193X11011140402101831	S.S. Panda, L. Khanna and S.C. Jain.
2013	Synthesis of various s-s linked symmetric bisazaheterocycles: A Review.	*Mini-Rev. Org. Chem.*, **2013**, 10, 268-280. DOI:10.2174/1570193X11310030006	L. Khanna, C.S. Panda and S.S. Panda.
2012	*Withania somnifera* reverses Alzheimer's disease pathology by enhancing low density lipoprotein receptor-related protein in liver. News Report in **The Telegraph** (https://tinyurl.com/4j6avxsa)	*Proc. Natl. Acad. Sci.*, **2012**, 109(9), 3510-3515. (**Impact factor 12.77**) DOI:10.1073/pnas.111220910	N. Sehgal, A. Gupta, R.K. Valli, S.D. Joshi, J.T. Mills, E. Hamel, S.C. Jain, S.S. Thakur and V. Ravindranath

2012	Biginelli Reaction: A Green Perspective.	*Curr. Org. Chem.*, **2012**, 16(4), 507-520. DOI:10.2174/138527212799499859	S.S. Panda and L. Khanna.
2012	Synthetic routes to symmetric bisbenzimidazoles: a review.	*Mini-Rev. Org. Chem.*, **2012**, 9, 381-396. DOI:10.2174/157019312804699474	L. Khanna and S.S. Panda.
2009	Synthesis of novel symmetrical and unsymmetrical bis-spiro[indole-indazolyl-thiazolidine]-2,4'-diones	*Arkivoc*, **2009**, vii, 119-125. DOI:10.3998/ark.5550190.0010.712	A. Saxena, L. Khanna, S. Bhagat and S.C. Jain
2008	A facile synthesis of novel unsymmetrical bis-spiro[indole-pyrazolinyl-thiazolidine]-2,4'-diones	*Arkivoc*, **2008**, xv, 54-64. DOI:10.3998/ark.5550190.0009.f07	M. Jain, R. Sakhuja, S. Bhagat and S.C. Jain
2006	Synthesis of some novel bis-spiro[indole-pyrazolinyl-thiazolidine]-2,4'-diones	*Synth. Commun.*, **2006**, 36,1863-1872. DOI:10.1080/00397910600602560	M. Jain, A. Saxena, S. Bhagat, C. E. Olsen and S.C. Jain
2006	One pot facile synthesis of 5-alkyl-1,2-dihydro-spiro[4H-3,1-benzoxazine-2,3'[3H]indol]-4,2'-diones under microwave irradiation	*Ind. J. Chem.*, **2006**, 45B, 1504-1510	A. Saxena, S. Bhagat, A. Gupta and S.C. Jain
2005	Novel fluorinated spiro [indole-indazolyl-thiazolidine]-2,4'-diones: Design and synthesis	*Phosphorus, Sulfur, Silicon Relat Elem*, **2005**, 180, 1829-1839. DOI:10.1080/10426509089431	S.C. Jain, S. Bhagat, M. Jain and R. Sakhuja
2004	One pot synthesis of novel 1,2-dihydro-5-methyl-spiro[4H-3,1-benzoxazine-2,3′[3H]indol]-4,2′-diones.	*Ind. J. Chem.*, **2004**, 43B, 2381-2385	A. Saxena, R. Goswami, S. Bhagat, and S.C. Jain

Conference Organization/ Presentations

1. **Co-chair** of a session and **Member of the organizing committee**, of the International e-conference on 'Mitigating environmental issues by sustainable approaches (ICMCESA-2022)' organized by Acharya Narendra Dev College, University of Delhi from February 22nd-28th, 2022.
2. **Invited Talk** on the topic 'Prochirality to Asymmetric Synthesis-A Learning Curve' for the students of Amity Institute of Applied Sciences, on 24th December 2021.
3. **Facilitator** in a five-day workshop on 'Empowering Teachers: Current technology based educational contents creation and delivery' at Acharya Narendra College, from 2nd-6th Dec. 2019, under the DBT Star College Scheme.

4. **Organized a One-day Seminar** on Intellectual Property Rights, under the Star College Scheme (held at Acharya Narendra Dev College, University of Delhi, Delhi, on 7th November 2019).
5. **Member of the organizing committee** of two day symposium on 'Safety Measures and Laboratory Ethics' (under the DBT-STAR scheme, held at Acharya Narendra Dev College, University of Delhi, Delhi on 21st-22nd February, 2018).
6. **Organized a workshop** on 'Systematic Use of Digital Information in Academic Activities' under the Star College Scheme, (held at Acharya Narendra Dev College, University of Delhi, Delhi, on 10th November 2017).
7. **Member of the organizing committee** of workshop on *Applications of Free/Open-Source Software in Science Teaching & Research* (held at Acharya Narendra Dev College**,** Delhi on April 14th-15th, 2010).
8. **Member of the organizing committee** of workshop on *Free/Open-Source Software* (held at South Campus**,** University of Delhi, Delhi, on April 16th, 2010).
9. **Member of the organizing committee** of a workshop for B.Sc. (Hons.) Chemistry students on *Use of software to create chemistry documents* (held at Acharya Narendra Dev College**,** Delhi, on June 6th-7th 2011).

Year of Publication	**Title**	**Conference**	**Co-author/s**
2020	**Oral Presentation** entitled "Computational, in vitro studies and Synthesis of Isatin based potentially bio-active molecules"	India International Science Festival (IISF-2020) under the Frontiers Area of Research-Chemical Sciences in the Young Scientist's Conference 22nd – 24th December 2020.	Leena Khanna
2019	Synthesis of potential antibacterial Schiff bases of 2-aminomethyl benzimidazole and their *in silico* pharmacokinetics, in vitro UV fluorescence binding studies with ct-DNA	2019 International Conference on Nanospace Materials (ICNM 2019, University of Queensland, Australia from 1st-4th October 2019).	S. Singhal (Presenter) and L. Khanna
2017	Design of a Virtual Chemistry Lab for Undergraduate Students	3rd India International Science Festival under SYPOG-Young Scientist's Conclave, held at Anna University, Chennai (13th - 16th October 2017).	Neeti Misra, Vibha Gaur, Rahul Dwivedi, Manish Kumar Singh, Sagar Patwal, Sachin Kumar, Shivam Agarwal, Parag Jain, Gaurav Prakash, Kunaal Madaan, Palak Sharma, Shivani Goyal.
2016	An innovative undergraduate virtual chemistry laboratory: Design and Learning Outcomes	19th CRSI National Symposium in Chemistry (University of North Bengal, Siliguri, Darjeeling, West Bengal, on 14th-16th	Neeti Misra, Vibha Gaur et al

		July 2016).	
2013	Automating physical chemistry laboratory using sensors and data acquisition systems	15th CRSI National Symposium in Chemistry NISER, Bhubaneswar, Banaras Hindu University, Varanasi, on Feb. 1-3 2013	Rambir, Sachin, Amita, Amit Garg and Vishal Dhingra
2011	Synthesis of some coumaryl-spiroindoles of pharmaceutical interest	13th CRSI National Symposium in Chemistry NISER, Bhubaneswar, on Feb. 4th-6th 2011.	Subhash C. Jain et al.
2010	Synthesis of new molecules to discover drug candidates	The International Symposium on Trends in Drug Discovery and Development, on 5th-8th January 2010, New Delhi.	Subhash C. Jain et al.
2008	A Clean, Benign and Aqua Mediated Synthesis of Pharamacologically Active Spiro Heterocycles	The 12th Annual Green Chemistry and Engineering Conference (June 24th-26th), Washington DC.	Subhash C. Jain (presenter), Siva Panda and Sunita Bhagat

Research Projects (Major Grants/Research Collaboration)

- **Co-PI** of **Innovation Project**, "Designing a virtual chemistry lab for undergraduate students," University of Delhi, 2015-16.
- **Co-PI** of **IEDC Project** (Innovation & Entrepreneurship Development Centre) "Development of Low-Cost disinfectant using cow urine," under DST sponsored scheme, 2014-15.
- **Co-PI** of **Innovation Project**, "Mobile Phone as a real time sensor based undergraduate laboratory" University of Delhi, 2012-13.

Elite Projects (Co-mentor):

1. Review on synthesis of Heterocyclic compounds and extraction of medicinal plants, 2022 (with Dr Neeti Misra and Dr Kavita Mittal)
2. To extract the coloured component of Hibiscus rosa-sinensis flower and study its potency as a pH indicator, 2019 (with Dr Neeti Misra and Dr Kavita Mittal)
3. Detection of adulterants in milk from different sources & Synthesis of metal complexes of Schiff bases using sonication, 2019 (Dr Neeti Misra, Dr Kavita Mittal and Dr Leena Khanna, USBAS, GGSIP University)
4. Study and extraction of medicinally important plant *S. chirata* & examination of chemical adulteration in food items, 2018 (with Dr Neeti Misra and Dr Kavita Mittal)
5. Spectrophotometric studies of Turmeric extracts and review of its medicinal properties, 2017 (with Dr Neeti Misra and Dr Leena Khanna, USBAS, GGSIP University)
6. Synthesis of some heterocyclic compounds and a review on benzimidazole synthesis, 2017 (with Dr Shallu Sachdeva and Dr Leena Khanna, USBAS, GGSIP University)

Awards and Distinctions

- **Digital Literacy Champion**: By Campus of Open Learning, University of Delhi. Travel to **Edinburgh College, Edinburgh, Scotland** for further Training, July 2015.
- **Vice Chancellor's Fellowship**, University of Delhi- 2014
- **Best Poster Award** and **Certificate of Appreciation** for Research Display at the DU Convocation 2016, for the work done in Innovation Project ANDC-305, "Designing a Virtual Chemistry Lab for Undergraduate Students"
- Joint CSIR-UGC Examination for **J.R.F.**
- Awarded **Senior Research Fellowship** through CSIR.

Association With Professional Bodies

- Reviewer of Frontiers in Chemistry
- Reviewer of Chemistry & Biodiversity
- Reviewer of ChemistrySelect, a Wiley Journal
- Member of Indian Society of Analytical Scientists

Other Activities

1. **Acted as a Jury Member** for the assessment of the prestigious INSPIRE scholarship organized by DST, New Delhi, held on:

i. 10-11 December 2016
ii. 6-7 December 2015
iii. 6-8 October 2014
iv. 8-10 October 2013
v. 21-23 October 2012
vi. 14-16 August 2011

2. **A resource person** for the workshop to 'Develop assessment questions for MOOCs on SWAYAM', organised by CIET, NCERT, New Delhi, from July 19th-21st 2021.
3. **A resource person** for 'Workshop on Development, Enrichment and Review of e-content, Scripts and Video for School MOOCS on SWAYAM', organised by CIET, NCERT, New Delhi, from February 20th-21st, 2020.
4. Online Refresher Course in Chemistry for Higher Education Faculty under ARPIT, with an 'A' Grade (Nov 2018-Feb 2019).
5. **A resource person** for five days workshop on 'Development of guidelines for mentoring of schools by Higher Educational Institutions (HEIs) under Rashtriya Avishkar Abhiyan (RAA)', organised by DESM, NCERT, New Delhi, from 18th March-20th March 2019 and 25th March-28th March 2019.
6. The Research Based Pedagogy Tools workshop (RBPT-Level 2) for undergraduate science teachers organised by and held at IISER Pune, 17th - 19th January 2019.
7. **A resource person** for five days workshop on 'Development of guidelines for mentoring of schools by Higher Educational Institutions (HEIs) under Rashtriya Avishkar Abhiyan (RAA)',

organised by DESM, NCERT, New Delhi, from 17th - 21st December 2018.

8. The pedagogy workshop (RBPT Level 1) for undergraduate science teachers organised by IISER Pune at Indian Institute of Technology, Gandhinagar, Gujarat, (10th - 13th December 2017).
9. **A resource person** in a five-day workshop on "Development of e-Resources for Science at Secondary stage", held at and organized by NCERT, on 30th October – 3rd November 2017.
10. **A resource person** in a five-day workshop on "Development of e-Resources for Science at Secondary stage", held at and organized by NCERT, on 13th– 17th February 2017.
11. A four-week online course on "Teaching with Moodle", a Learn Moodle MOOC by Moodle HQ during January 2017.
12. **A resource person** in a session on "Blogging" at a workshop on "ICT integration in Chemistry" (organized and held at Hindu College, University of Delhi, Delhi, on October 9-10, 2015).
13. **A resource person** in a session on "Blogging" at a workshop on "ICT Usages for Teaching" (held at CPDHE, University of Delhi, Delhi, on September 1-8, 2015).
14. D-LITE program (The Digital Literacy and Innovation for Tomorrow's Education) training under UKIERI at **Edinburgh College, Granton Campus, Scotland, UK,** on July 15-17, 2015.
15. **A resource person** in various sessions of a weeklong workshop on "Trans disciplinary Training" (held at CPDHE, University of Delhi, Delhi on May 7-13, 2014).
16. **A resource person** in some sessions of *Easy Now Techniques Workshop on Multimedia Content Development* (held at Acharya Narendra Dev College**,** Delhi on May 4-7, 2010).

Online live lectures at CEC-UGC's EDUSAT network:

1. **Stereochemistry I:** https://www.youtube.com/watch?v=36Pmfnt1ttY
2. **Stereochemistry II:** https://www.youtube.com/watch?v=HP3OTL7urEs
3. **Stereochemistry III:** https://youtu.be/1ygn_67vcI0
4. **Stereochemistry IV:** https://www.youtube.com/watch?v=iX1-VeMy-9Y
5. **Conformations:** https://youtu.be/uEy7L5T1aN8
6. **Electronic Displacements:** https://youtu.be/r0vaizNWyMs
7. **Electronic Displacements II:** https://youtu.be/semyBtAHgTY
8. **Reaction Intermediates:** https://youtu.be/T1ePwEQ4Fa0
9. **Reaction Intermediates II:** https://youtu.be/n0EPjGlODK8
10. **Acids and Bases (with carbenes):** https://youtu.be/0g8BwLAIEj4
11. **Amino Acid, Peptides and Proteins:** https://youtu.be/pel8P2atSEg
12. **Amino Acid, Peptides and Proteins II:** https://www.youtube.com/watch?v=PFcS081ND5U

Pankaj Khanna
(**Prof Pankaj Khanna**)
Signature of Faculty Member