


## **BIO-DATA**

	Name : <b>Dr. Vinod Kumar Tyagi</b> Present position: Professor and Head Department of Oil & Paint Technology Harcourt Butler Technological Institute Kanpur, (U.P.)
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### **ADDRESS FOR COMMUNICATION**

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**Date of birth:** December 11, 1959

### **Academic Qualifications:**

Sl. No.	Degree	Year	Institution	University	Division
1.	B. Tech. Chemical Technology (Oil Technology)	1984	H.B.T.I, Kanpur	Kanpur	First
2.	M. Tech. Chemical Technology (Oil Technology)	1986	H.B.T.I, Kanpur	Kanpur	First
3.	Ph.D. Chemical Technology (Oil Technology)	1992	H.B.T.I, Kanpur	Kanpur	-

**TOPIC OF Ph.D. THESIS:** *'Studies on changes taking place during deep-fat frying of foods.'*

**AREAS OF RESEARCH INTEREST:** *Novel Surfactants and Oleo-chemicals*

**AWARDS AND SCHOLARSHIPS:**

1. **Institute Merit Scholarship** during B. Tech. programme 1981-82.
2. Junior Research Fellowship of **Ministry of Human Resource Development, Govt. of India** during M. Tech. programme 1984-86.
3. Senior Research Fellowship of **Ministry of Human Resource Development, Govt. of India** during Ph.D. programme 1986-88.

**WORK EXPERIENCE:** *28 years of teaching and research experience.*

<b>Sl. No.</b>	<b>Designation</b>	<b>Organization</b>	<b>Duration</b>
1.	Professor	Department of Oil and Paint Technology, Harcourt Butler Technological Institute Kanpur.	06.04.2005 to till date
2.	Assistant Professor	Department of Oil and Paint Technology, Harcourt Butler Technological Institute Kanpur	06.04.1997 to 05.04.2005
3.	Lecturer	Department of Oil and Paint Technology, Harcourt Butler Technological Institute Kanpur	6.4.1988 to 05.04.1997
4.	Senior Research Fellow	Ministry of Human Resource Development, New Delhi, Govt. of India	12.9.1986 to 5.4.1988
5.	Junior Research Fellow	Ministry of Human Resource Development, New Delhi, Govt. of India	31.10.1984 to 30.4.1986

### Details of the Industrial Trainings completed:

S. No.	Name of organization	Duration	Nature of job	Sponsoring organization
1.	<b>Wipro Enterprises Ltd., SIDCUL, Haridwar, Uttarakhand</b>	Dec 22 to Dec 27, 2014	Took in-plant training in fatty acid and soap plant to understand the practical aspects of plant engineering and planning.	<b>Center of Excellence, TEQIP-II World Bank Project</b>
2.	<b>Godrej Consumers Product Ltd., Malanpur, M.P.</b>	July 01 to July 04, 2014	Took in plant training for the manufacture of soaps, fatty acids and updated the recent technological advancements related to fat splitting and soaps	<b>Center of Excellence, TEQIP-II World Bank Project</b>
3.	<b>Shriram Foods and Fertilizers Industries, New Delhi</b>	Dec 3, 1992 to Jan 3, 1993	Took practical training to update the technical knowledge regarding procurement, processing, quality control and research & development for technology up gradation and to cope up with the recent advancement in the field of oils, fats and allied products	<b>QIP, Govt. of India</b>
4.	<b>Godrej Soaps Ltd., Bombay</b>	May 26 to June 25, 1993	Took in plant training for the manufacture of soaps, detergents and other oleo chemicals and updated the recent technological advancements related to oils and allied products	<b>QIP, Govt. of India</b>

### Details of the sponsored research projects completed:

S. No.	Title of the project	Duration	Amount (in lacs)	Sponsoring agency	Status
1.	Effect of deep-fat frying on polyunsaturated fatty acids (PUFA) rich oils & oil blends	2 Years	1.88	DST, New Delhi under scheme for young scientists(SYS)	Completed
2.	Development of eco-friendly cationic surfactants for laundry deter-gent compositions	3 Years	12.87	DST, New Delhi under SERC Scheme	Completed
3.	Development of novel phosphate anionic Gemini surfactants and	2 years	15.00	AICTE, New Delhi	Completed

	evaluation of their surface active and performance properties in mixed anionic surfactant systems				
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### Academic Assignments:

1. Setting Questions for Question Bank for the position of Food Supply Officer conducted by Uttar Pradesh Public Service Commission, Allahabad.
2. Setting Question papers of M. Sc Industrial Chemistry and evaluation of answer sheets of **Guru Nanak Dev University, Amritsar.**
3. Setting undergraduate and post graduate question papers of various courses of Chemical Technology (Oil Technology) and evaluation of answer sheets of **Uttar Pradesh Technical University, Lucknow.**
4. **Head Examiner**, B. Tech. Chemical Technology (Oil Technology) answer sheets of even semester examination (May- June 2007) and odd semester examination (Dec 2007) of **Uttar Pradesh Technical University, Lucknow.**
5. **Member**, Soaps and Detergents Sectional Sub-committee, **Bureau of Indian Standards**, New Delhi in 2005-2006.
6. **Reviewer** of research papers for publication in national and international journals viz. **Journal of American Oil Chemists' Society** , **Journal of Surfactants and Detergents.**, **Langmuir** , **Indian Journal of Chemical Technology**, **Journal of Food Scientists' and Technologists' of India** .
7. Delivered lectures on **Technology for production of Biodiesel from Jatropha Oil** in trainers training and their alternative use as bio -fuel at **C. S. Azad University of Agriculture and Technology, Kanpur.**
8. Delivered lecture on **“Testing of Raw Materials & Finished Products and its impact on quality of detergency”** at MSME-Development Institute, Kanpur on September 24, 2009.
9. Delivered an invited talk entitled, **“Gemini surfactants: A new class of surfactants”** in National Conference on Recent Innovations in Oil & Food Technology at North Maharashtra University, Jalgaon on Aug. 23, 2010.
10. Delivered a lecture on **Soaps and Detergents** in Orientation Programme of PGTs in Chemistry at Sarsaul, Kanpur in July, 2010.

11. Delivered expert lectures in Reorientation Training Program in Ras Shastra and Bhaishayya Kalpna organized at State Ayurvedic College, Lucknow during Feb. 28, 2011- Mar. 05, 2011.
12. Delivered a lecture on **“Jatropha Curcas (Ratan Jyot) as a Renewable Source of Biofuel”** in Trainer’s Training programme on Tree Borne Oilseeds for Development of Wasteland/Degraded Land at C.S. Azad University of Agriculture & Technology, Kanpur on Nov. 29, 2012.
13. Delivered lecture on "Novel surfactants" in a Hindi Conference organized at DMRDE, Kanpur on Feb 04, 2016.

### **Academic visits with duration to foreign countries:**

1. Attended International conference entitled, “84<sup>th</sup> Annual Meeting and Expo” of **American Oil Chemists’ Society** at **Anaheim, California, USA** during April 23- May 7, 1993 and presented two research papers.
2. Attended International conference entitled, “89<sup>th</sup> Annual Meeting and Expo” of **American Oil Chemists’ Society** at **Chicago, Illinois, USA** during May 8-23, 1998 and presented one research paper.
3. Attended International conference entitled, “98<sup>th</sup> Annual Meeting and Expo” of **American Oil Chemists’ Society** at **Quebec City, Canada** during May 13-19, 2007 and presented two research papers.
4. Attended International conference entitled, “101<sup>st</sup> Annual Meeting and Expo” of **American Oil Chemists’ Society** at **Phoenix, Arizona, USA** during May 16-19, 2010 and presented two research papers.

### **Administrative Experience:**

1. **Head of the Department**, Department of Oil and Paint Technology, Harcourt Butler Technological Institute, Kanpur since July 2014.
2. **Coordinator**, Centre of Excellence (CoE) on **Applied Research, Training & Education in Lipid Science** running in Department of Oil & Paint Technology under TEQIP-II of World Bank Project since December 28, 2013.
3. **Member Secretary**, Centre of Excellence (CoE) on **Applied Research, Training & Education in Lipid Science** running in Department of Oil & Paint Technology under TEQIP-II of World Bank Project from July 2013 to December, 2013.
4. **Member**, Board of Studies of under graduate and post graduate programme of Chemical Technology (Oil Technology) of HBTI, Kanpur during September 2013.
5. **Chairman, Council of Students Activities**, HBTI, Kanpur from June, 2011 to November, 2015.

6. **Nodal Officer**, Dr. B. R. Ambedkar Engineering College of Information Technology, Bijnor from December, 2011 to January 2012.
7. **Dean, Academic Affairs** H.B.T.I, Kanpur from November 2008 to June, 2009.
8. **Member Secretary**, Academic Council, HBTI, Kanpur during January 2009.
9. **Member**, Board of Studies of under graduate and post graduate programme of Chemical Technology (Oil Technology) of HBTI, Kanpur during July 2009.
10. **In- charge**, Testing (Oil Technology), H.B.T.I, Kanpur since September, 2008.
11. **Senior Examination Superintendent**, H.B.T.I, Kanpur during May 2007 to March 2008.
12. **Presiding Officer, Graduate Aptitude Test of Engineering (GATE)** 2008 Examination.
13. **Center Superintendent**, H.B.T.I. Examination Centre for I.G.N.O.U., June 2007 Examination and December 2007 Examination.
14. **Center Superintendent**, H.B.T.I. Examination Centre for IICHE, September 2007 Examination.
15. **UPTU Observer**, SEE-UPTU 2007 Counseling at BIT, Meerut.
16. **Nodal Officer**, SEE-UPTU 2007 Examination at RKGIT, Ghaziabad
17. **Member**, Advisory Panel of **Government of India** for selection of class two officers.
18. **Member**, Uttar Pradesh Technical University panel for affiliation/ increase in intake of various courses affiliated to **Uttar Pradesh Technical University, Lucknow** (June 2006, June 2007, June 2008, June 2009 and June 2013).
19. **Officer In-charge**, Community Centre, West Campus, H.B.T.I., Kanpur, from 2007 to January, 2012.
20. **Member, Procurement Cell, TEQIP, World Bank** Project from 2005 to 2008.
21. **Convener, Physical Verification Committee**, TEQIP, World Bank Project from 2005 to 2008.
22. **Assistant Dean Academic Affairs** HBTI, Kanpur from July 2002 to Jan 2005.
23. **Assistant Dean Students Welfare** HBTI, Kanpur for the session 2001-2002.
24. **Assisted, Training and Placement Cell**, H.B.T.I, Kanpur during July 1998-2000.
25. **Organizing Secretary** of National Seminar on “Packaging Technologies: Strategies for 21<sup>st</sup> Century” held at HBTI, Kanpur during December 18-19, 1999.
26. **Elected Hony. Secretary**, Oil Technologists’ Association of India (Central Zone) during 1997-2001.
27. **Warden** of undergraduate hostels for session 1994-95, 1995-96, 1997-98, 1998-99 and 1999-2000.
28. **Convener**, Sports Sub-council HBTI, Kanpur for the session 1990-91 and 1991-92.

### **Conferences/ Seminar/Workshop organized:**

- National seminar on “**Packaging Technology: Strategies for 21<sup>st</sup> Century**” at HBTI, Kanpur **during Dec. 18-19, 1999 and worked as Organizing Secretary.**
- Organized a national workshop on “**Advances in Oil Processing**” at HBTI, Kanpur during September 28-29, 2013 under TEQIP-II and worked as Convener.
- Organized a Workshop on “**Advances in Soaps and Detergents**” under CoE on Applied Research, Training and Education in Lipid Science during March 27-28, 2014 at H. B. T. I., Kanpur under TEQIP-II and worked as Co- Chairman.
- Organized a Workshop on “**Innovative Practices in Vegetable Oil Processing**” under CoE on Applied Research, Training and Education in Lipid Science during Sept 27-28, 2014 at H. B. T. I., Kanpur under TEQIP-II and worked as Chairman.
- Organized a National seminar on “**Newer oleo chemicals : Production and Industrial Applications** ” under CoE on Applied Research, Training and Education in Lipid Science during Jan 10-11, 2015 at H. B. T. I., Kanpur under TEQIP-II and worked as Chairman.
- Organized a Workshop on “**Testing and Evaluation of Eco-friendly Coatings**” under CoE on Applied Research, Training and Education in Lipid Science during March 14-15, 2015 at H. B. T. I., Kanpur under TEQIP-II and worked as Chairman.

### **Short courses/ Training Programmes organized:**

1. Organized a short course on, “**Cosmetics**” through OTAI (CZ) during December, 1998 at H.B.T.I., Kanpur.
2. Organized a short course on, “**Resins and Adhesives**” through OTAI (CZ) during May 3-15, 1999 at H.B.T.I., Kanpur.
3. Organized a short course on “**Hair care products**” through OTAI (CZ) during June 7-12, 1999 at HBTI, Kanpur.
4. Organized a short course on, “**Cosmetic products: Manufacture and Marketing**” during Feb.13- 22, 2006 at HBTI, Kanpur, under Technical Education Quality Improvement Programme (TEQIP) of World Bank Project.
5. Organized a short course on, “**Manufacture of Soaps and Detergents**” through Science and Technology Entrepreneurs Park (STEP) during Jan.2, 2007-March 2, 2007 at H.B.T.I., Kanpur.
6. Organized a short course on “**Manufacture of Hair-care Products**” during Feb-8-14, 2009 at HBTI, Kanpur, under TEQIP of World Bank Project.
7. Organized a Training Programme on “**Manufacture of cosmetic products**” during May 30-June 04, 2016 under Center of Excellence established at HBTI, Kanpur, under TEQIP - II.

8. Organized a Training Programme on “**Manufacture of low cost plastic products**” during July 04 - July 09, 2016 under Center of Excellence established at HBTI, Kanpur, under TEQIP - II.
9. Organized a Training Programme on “**Manufacture of low cost paints from indigenous cheap raw materials**” during July 27 - August 01, 2016 under Center of Excellence established at HBTI, Kanpur, under TEQIP - II.



### Refresher courses completed:

S. No	Name of Refresher Course	Name of the institution	Period		Sponsorship
			From	To	
1.	<b>Reliability &amp; Safety in Process Industry</b>	HBTI, Kanpur	Sep.28, 1998	Oct.12, 1998	AICTE-ISTE, New Delhi
2.	<b>Experimental Methods in Thermal Sciences</b>	IIT, Kanpur	Aug.2, 1999	Aug.7, 1999	QIP,MHRD, New Delhi
3.	<b>Application of Computers in Textile Industry</b>	GCTI, Kanpur	June3, 2000	June17, 2000	AICTE-ISTE, New Delhi
4.	<b>Textiles in 21<sup>st</sup> Century</b>	GCTI, Kanpur	July3, 2000	July15, 2000	AICTE-ISTE, New Delhi
5.	<b>Industrial Safety and Hazards Management</b>	University of Roorkee, Roorkee	June13, 2001	June27, 2001	QIP-AICTE, New Delhi
6.	<b>Effective Teaching Strategies in Engineering Classroom</b>	IIT, Kanpur	Dec10, 2001	Dec.14, 2001	QIP-AICTE, New Delhi
7.	<b>Air Pollution and Its Control</b>	IIT, Kanpur	Nov11, 2002	Nov15, 2002	QIP-AICTE, New Delhi
8.	<b>Environmental Economics &amp; Environmental Impact Assessment (EIA)</b>	IIT, Kanpur	May18, 2004	May24, 2004	QIP-AICTE, New Delhi
9.	<b>Quality Control Techniques in Chemical and Allied Industries</b>	HBTI, Kanpur	Sept. 28, 2005	Sept. 30, 2005	TEQIP, World Bank Project
10.	<b>Modern Analytical Techniques for Research and Industry</b>	HBTI, Kanpur	Nov. 10, 2008	Nov.14 2008	TEQIP, World Bank Project
11.	<b>Modeling and Simulation of Chemical Process</b>	HBTI, Kanpur	Feb. 24, 2009	Feb, 29, 2009	TEQIP, World Bank Project
12.	<b>Statistical Analysis for Engineers</b>	IIT, Kanpur	July 2, 2012	July 6, 2012	QIP-AICTE, New Delhi
13.	<b>Industry-Academia Interaction for Strengthening Technical Education under TEQIP-II</b>	PHD House, Gomti Nagar, Lucknow	August 30, 2013	-	PHD Chamber of Commerce and Industry, Lucknow & Harcourt Butler Technological Institute, Kanpur
14.	<b>Management Capacity Enhancement Programme for Administrators</b>	IIM Lucknow, Noida Campus	September 23, 2013	September27, 2013	TEQIP-II, World Bank Project

## **Courses taught in institute:**

### ***U.G. Level***

1. Sources, characteristics and composition of oils, fats and waxes.
2. Petroleum products
3. Solvent extraction of oil bearing materials
4. Post harvest technology of oil seeds.
5. Tailor-made oils and fats
6. Petroleum processing technology
7. Equipment design project
8. Refining and hydrogenation of oils
9. Techno-economic feasibility project
10. Technology of soaps and fat splitting
11. Refining of oils
12. Project
13. Oil and allied products formulation lab
14. Analysis of soap products
15. Seminar

### ***P.G. Level***

1. Chemistry and technology of oils and allied products
2. Oleo chemicals
3. Technology of modified and specialty fats and oils
4. Equipment and plant design
5. Advanced oil chemistry and oleo chemicals
6. Novel Surfactants: Production and applications.
7. Interfacial science and engineering
8. Advanced emulsion technology
9. Dissertation
10. Research project

## **Books Published:**

1. Published a book entitled **“Esteramide quaternaries derived from piperazine and fatty acids”** (ISBN 978-3-8433-9374-4) in March, 2011.
2. Published a book entitled **“Imidazoline surfactants derived from diethylenetriamine and fatty acids”** (ISBN 978-3-8465-4868-4) in December, 2011.

## Research Experience:

### (a) List of publications

#### *Published*

1. Prashant Katiyar, Shailendra Kumar Srivastava & V.K. Tyagi, A current scenario and novel approaches to degrade the lignocellulosic biomass for the production of biodiesel. **J. Fundam Renewable Energy Appal.** Vol.5, 161 (2015).
2. Gunjan and V. K. Tyagi, Synthesis of Rice Bran Fatty Acids (RBFAs) based cationic surfactants and evaluation of their performance properties in combination with nonionic Surfactant *Tenside Surfactants Detergents*, Vol.6, 497( 2014).
3. Shilpa Tyagi and V. K. Tyagi, “Novel cationic gemini surfactants and methods for determination of antimicrobial activity” a review paper accepted in *Tenside Surfactants Detergents*, Vol 5, 379(2014).
4. Divya Tripathy and V. K. Tyagi, “Effect of fatty imidazolines on properties of laundry detergent compositions based on cationic surfactants”, *IOSR-JAC*, Vol. 7, 5 (2014).
5. Ayushi Singh and V. K. Tyagi, “Arginine Based Novel Cationic Surfactants: A Review”, *Tenside Surfactants Detergents*, Vol. 51, 3 (2014).
6. Sakshi Tyagi and V. K. Tyagi, “Interaction of anionic gemini surfactants with other surfactants” a review paper published online on September 05, 2013 in *J. Dispersion Sci. Tech*, 2013.
7. Nimisha Chandra and V. K. Tyagi, “Studies on SDLC (Sodium di lauraminocystine) and SDMC (Sodium di myristaminocystine)”, a research paper published online in *J. Dispersion Sci. Tech*, 2013.
8. Nimisha Chandra and V.K. Tyagi, “Amino Acids Based Surfactants: Chemistry, Types, Synthesis, Properties and Applications” *J. Dispersion Sci. Tech.* Vol. 34, 6 (2013).
9. Bajpai, Divya and V. K. Tyagi, “Nonionic surfactants: An overview”, *Tenside Surfactants Detergent* Vol. 47,190 (2010).
10. Shukla, Dipti and V. K. Tyagi, “Development of cleavable surfactants”, *Tenside Surfactants Detergents* Vol. 47,7(2010).
11. Bajpai, Divya and V. K. Tyagi, “Synthesis and characterization of imidazolium surfactants based on tallow fatty acids and diethylenetriamine (DETA)”, *European Journal of Lipid Science and Technology* Vol.110, 935 (2008).
12. Mishra, Shilpi and V.K. Tyagi, “Synthesis and performance properties of cationic fabric softeners synthesized from fatty acids and 1(2-hydroxyethylpiperazine), *Journal of Surfactants and Detergents.* Vol.11, 167(2008).

13. Bajpai, Divya and V. K. Tyagi, "Synthesis, characterization and surface active properties of imidazolium surfactant derived from oleic acid and diethylenetriamine" *Tenside Surfactants and Detergents* Vol. 45, 5 (2008).
14. Mishra, S.K. , Tyagi, Rashmi and V. K. Tyagi, "Sulphited oil based fat liquors for leather processing", *J. Indian Leather Technologists' Association* Vol. 58, 491 (2008).
15. Shukla, Dipti and V. K. Tyagi, Synthesis and surface –active properties of anionic gemini surfactants with two long alkyl chains and two phosphate head groups", *European Journal of Lipid Science and Technology* Vol. 110, 81 (2008).
16. Gaur, Vivekanand, Tyagi, V. K. and P. K. Tiwari, "Influence of acidic catalysts on epoxidation of soyabean oil using per acid formed in-situ", *Paint India.*, Vol. 58 (3), 105 (2008).
17. Madaan, Parag and V. K. Tyagi, "Quaternary pyridinium salts: A review" *J. Oleo. Sci.*, 57(4), 197 (2008).
18. Madaan, Parag and V. K. Tyagi, "Synthesis and characterization of antimicrobial 4-amino-decyl pyridinium bromide cationic surfactant", *Surface Review and Letters*, Vol. 15(5), 531 (2008).
19. Bajpai, Divya and V. K. Tyagi, "Surface active and performance properties of cationic imidazolium surfactants based on different fatty acids", *Surface Review and letters* Vol. 15(4), 361 (2008).
20. Shukla, Dipti and V. K. Tyagi, Preparation and performance properties of a series of novel anionic gemini surfactants, *Tenside Surfactants and Detergents*, 45(2), 72 ( 2008).
21. Bajpai, Divya and V. K. Tyagi, Microwave synthesis of cationic fatty imidazolines and their characterization" *Journal of Surfactants and Detergents*, 11, 79 (2008).
22. Bajpai, Divya and V. K. Tyagi, Synthesis of fatty imidazolines based on palm fatty acids and diethylene triamine through microwave irradiation and their charaterization, *Heterocyclic Communications* 13(6), 377 (2007) .
23. Mishra, Shilpi and V. K. Tyagi, Synthesis and characterization of palm fatty acids and 1(2-hydroxyethyl piperazine) based cationic fabric softeners, *Surface Review and Letters* 14, 1129 (2007).
24. Shukla, Dipti and V. K. Tyagi, Anionic gemini surfactants: Synthesis and surface active properties, *Surface Review and Letters* 14, 991 (2007).
25. Bajpai, Divya and V. K. Tyagi, "Laundry detergents: An overview" *J. Oleo. Sci.*, 56(7), 327 (2007).
26. Mishra, Shilpi and V. K. Tyagi, "Esterquats: The novel class of cationic fabric softeners", *J. Oleo. Sci.*, 56(6), 269 (2007).
27. Tyagi, Rashmi, Tyagi, V.K. and S.K. Pandey "Imidazoline and its derivatives: An overview", *J. Oleo. Sci.*, 56, (5), 11 (2007).
28. Rachna and V. K. Tyagi, Gels: Novel detergents for laundry applications" *J. Oleo. Sci.*, 55(11), 555 (2006).
29. Roy, Preeti, Tyagi, V. K. and R. K. Khanna, "Synthesis and characterization of N-N'-ethylene-bis(1-dodecylsuccinamic acid , *J. lipid Sci. & Tech.*, 38,119 (2006).
30. Bajpai, Divya and V. K. Tyagi, "Biodiesel: Source, production, composition properties and its benefits, *J. Oleo. Sci.*, 55(10), 487 (2006).

31. Deepika and V. K. Tyagi, "Sulfosuccinates as mild surfactants" *J. Oleo. Sci.*, 55(9), 429 (2006).
32. Shukla, Dipti and V. K. Tyagi, "Cationic gemini surfactants: A Review, *J. Oleo. Sci.*, 55(8), 381 (2006).
33. Bajpai, Divya and V. K. Tyagi, "Fatty imidazolines: Chemistry, synthesis, properties and their industrial applications, *J. Oleo. Sci.*, 55(7), 319 (2006).
34. Tyagi, Rashmi and V. K. Tyagi, "Synthesis and characterization of tallow-fatty acids and triethanolamine based ester-quats, *J. Oleo. Sci.*, 55(7), 337 (2006).
35. Mishra, Shilpi and V. K. Tyagi, "Biodegradable ester-amide fabric softeners, *J. Oleo. Sci.*, 55(6), 267 (2006).
36. Shukla, Dipti and V. K. Tyagi, "Anionic gemini surfactants: A distinct class of surfactants, *J. Oleo. Sci.*, 55(5), 215 (2006).
37. Gautam, K. K. and V. K. Tyagi, "Microbial surfactants: A Review, *J. Oleo. Sci.*, 55(4), 55 (2006).
38. Singh, S. K., Bajpai M. and V. K. Tyagi, "Amine oxide: A Review, *J. Oleo. Sci.*, 55(3), 99 (2006).
39. Tyagi, Rashmi and V. K. Tyagi, "Studies on ester-quats synthesized by palm fatty acids and triethanolamine", *J. Oil Technol. Assocn. India*, 37, 3 (2005).
40. Roy, Preeti, Tyagi, V. K. and R.K. Khanna, "Gemini surfactants; structural and performance properties, *J. Oil Technol. Assocn. India*, 36,139 (2004).
41. Pandey, S. K., Tyagi, Rashmi and V. K. Tyagi, "Palm fatty acids and deta (diethylenetriamine) based imidazolium softeners and their characterization" *J. Oil Technol. Assocn. India*, 36, 15 (2004).
42. Pandey, S.K, Tyagi, Rashmi and V. K. Tyagi. "Stearic acid and diethylenetriamine based imidazolium softeners and their characterization" *J. Oil Technol. Assocn. India*, 35, 55(2003).
43. Tyagi Rashmi, Tyagi, V. K. and R. K. Khanna "Performance evaluation of esterquat formulations on different substrates" *J.Oil Technol. Assocn. India* 35, 1 (2003).
44. Tyagi Rashmi, Tyagi, V. K. and R. K. Khanna, "Triethanolamine and stearic acid based esterquats and their characterization " *J.Oil Technol. Assocn. India*, 33, 135(2001).
45. Singh, Shubha and V.K. Tyagi, "Deep fat frying of foods-its significance on nutrition and health" *J. Food Science Technol.* 38, 545 (2001).
46. Singh, Shubha and V.K. Tyagi, "Edible Oil Packaging: An Overview" *Popular Plastics and Packaging*, XIV, 67, 4 (2000).
47. Singh, Shubha and V.K. Tyagi, "Assessment of frying oil quality by determination of polar components" *J. Oil Technol. Assocn. India*, 32, 66(2000).
48. Tyagi, V. K., Dubey, S.K. and Shubha Singh; "Changes in properties of sunflower-groundnut oil blends during frying of foodstuffs", *Ibid*, 31, 122(1999).
49. Tyagi,V. K., Vasishtha, A.K. and Shishir Sinha, " Evaluation of frying oils in deep fat frying , *J. Oil Technol. Assocn. India*, 30, 3 (1998).
50. Tyagi, V. K. and A. K. Vasishtha , "Changes in the characteristics and composition of oils" during deep fat frying". *J. Am. Oil Chem. Soc.* 73, 449 (1996).

51. Tyagi, V. K. and A. K. Vasishtha, “ Effect of deep fat frying on the characteristics and composition of soyabean oil” *J. Oil Technol. Assoc. India*, XXVI, 111(1994).
52. Kumar, Pramod, Tyagi, V. K. and M. S. Saxena, “Surface active compounds and their role in pigment dispersion” *Paint India*, XLIV,31(1994).
53. Tyagi.,V. K and Pramod Kumar, “Formation of polymeric fractions in frying fats”, *J. Oil Technol. Assoc. India*, XXVI, 13(1994).

### ***Presented***

54. Prashant Katiyar, Shailendra Kumar Shrivastava and V.K. Tyagi “Innovative Technologies useful for the decomposition of Lignocellulose Biomass: Biodiesel production”. A paper presented in National conference entitled, Newer Oleochemicals: Production and Industrial applications organized by **Centre of Excellence (CoE)** established on Applied Research, Training and Education in Lipid Science at Department of Oil and Paint Technology, HBTI, Kanpur during January 10-11,2015.
55. Vaibhav Gupta and V.K. Tyagi, “Surfactants for Hard Surface Cleaning”. A paper presented in National conference entitled, Newer Oleochemicals: Production and Industrial applications organized by **Centre of Excellence (CoE)** established on Applied Research, Training and Education in Lipid Science at Department of Oil and Paint Technology, HBTI, Kanpur during January 10-11,2015.
56. Nimisha Chandra and V.K. Tyagi, “Studies on amino acid based gemini surfactants derived from L-cystine and fatty acids” a research paper accepted for presentation in international conference entitled “9<sup>th</sup> World Surfactant Congress and Business Convention” held at **Barcelona, Spain** during June 10-12, 2013.
57. Gunjan and V. K. Tyagi, “Synthesis and performance properties of esterquats derived from rice bran fatty acids (RBFAs) and alkanolamines” a research paper presented in international conference entitled “International Conference on Advances in Chemical Engineering” held at **NIT Raipur, Chhatisgarh, India** during April 5-6, 2013.
58. Divya Bajpai and V. K. Tyagi, “Studies of surfactants for the development of fluoro polymer” a paper accepted for presentation in International Conference entitled **103<sup>rd</sup> AOCS annual meeting and expo** held at **Long Beach, California, USA** during April 29—May 2, 2012.
59. V. K. Tyagi and Nidhi Sharma, “Surface active and performance properties of alkyl polyglycoside surfactants derived from fatty alcohols” a research paper accepted for presentation in International Conference entitled **102nd AOCS annual meeting and expo** held at Cincinnati, Ohio, **USA** during May 01-04, 2011.
60. V.K. Tyagi and Gunjan, “Synthesis and properties of esterquats derived from rice bran fatty acids and triethanolamine”, a research paper accepted for presentation in International Conference entitled **102nd AOCS annual meeting and expo** held at Cincinnati, Ohio, **USA** during May 01-04, 2011.
61. V.K. Tyagi and Divya Bajpai, “Effect of fatty imidazolines on properties of laundry detergent compositions based on nonionic surfactants” a research paper presented in International Conference entitled **101<sup>th</sup> AOCS annual meeting and expo** held at **Phoenix , Arizona , USA** during May 16-19, 2010.
62. V. K. Tyagi and Dipti Shukla “Influence of hydrophobic chain length on the properties of phosphate based gemini surfactants” a research paper presented in International Conference

- entitled **101<sup>th</sup> AOCS annual meeting and expo** held at **Phoenix, Arizona, USA** during May 16-19, 2010.
63. V.K. Tyagi and Shilpi Mishra, "Synthesis, characterization, and properties of tallow fatty acids based esteramide quats" a research paper accepted for presentation in International Conference entitled **100<sup>th</sup> AOCS annual meeting and expo** held at **Orlando, Florida, USA** during May 3-6, 2009.
  64. V. K. Tyagi and Dipti Shukla, "Surface active and performance properties of double chain surfactants having ethylene spacer", a research paper accepted for presentation in International Conference entitled **100<sup>th</sup> AOCS annual meeting and expo** held at **Orlando, Florida, USA** during May 3-6, 2009.
  65. V.K. Tyagi and Divya Bajpai, "Effect of hydrophobic chain on surface active/performance properties of imidazolium surfactants" a research paper accepted for presentation in International Conference entitled **100<sup>th</sup> AOCS annual meeting and expo** held at **Orlando, Florida, USA** during May 3-6, 2009.
  66. Rashmi Tyagi and V. K. Tyagi, "Properties of oleic acid based esterquats synthesized by using different alkanolamines" a research paper presented in **98<sup>th</sup> AOCS annual meeting and expo** held at **Quebec city, Canada** during May 13-16, 2007.
  67. V. K. Tyagi and Dipti Shukla, "Synthesis and properties of anionic gemini surfactant with two didocyl and two phosphate head groups" a research paper presented in **98<sup>th</sup> AOCS annual meeting and expo** held at **Quebec city, Canada** during May 13-16, 2007.
  68. V. K. Tyagi, Divya Bajpai and Shilpi Mishra, "Convenient synthesis of quaternized long chain fatty imidazolines through microwave irradiation and their characterization", a research paper presented in **98<sup>th</sup> AOCS annual meeting and expo** held at **Quebec city, Canada** during May 13-16, 2007.
  69. S.K. Pandey and V.K. Tyagi, "Studies on quaternization of stearic acid based imidazolines", a research paper presented in a **National Level Technical Symposium ARENA 03** organized at **MNIT, Jaipur** during March 21-22, 2003.
  70. Rashmi Tyagi, V.K. Tyagi and R.K. Khanna, "Tallow-based ester quats for laundry applications," a research paper presented in **OTAI-JOCS Asian conference-2002** on Lipids, fats and oils and International Exhibition held at New Delhi during December 6-8, 2002.
  71. S.K. Pandey, Rashmi Tyagi, and V.K. Tyagi, "Stearic acid –based imidazolium softeners and their characterization," a research paper presented in **OTAI-JOCS Asian conference-2002** on Lipids, fats and oils and International Exhibition held at New Delhi during December 6-8, 2002.
  72. Rashmi Tyagi, V.K. Tyagi and R.K. Khanna "Cationic surfactants from palm fatty acids for fabric softening formulations", a research paper presented in **International Seminar** on "Rice bran and Palm : Edible and Industrial Applications organized by OTAI at H.B.T.I., Kanpur during September 21-22, 2002.
  73. S.K. Mishra and V.K. Tyagi, "Sulphited rice bran oil for fat liquor formulations" a research paper presented in **International Seminar** on "Rice bran and Palm: Edible and Industrial Applications" organized by OTAI at H.B.T.I., Kanpur during September 21-22, 2002.
  74. Rakhi Shanker, Pramod Kumar and V.K. Tyagi, "High solids coatings for a better environment", a paper presented in **National Symposium** on Environmental Challenges for the New Millennium held at **HBTI, Kanpur** during Nov. 24-25, 2000.

75. Shubha Singh and V.K. Tyagi, "Selection of packaging materials for edible oils", a paper presented in **National Seminar** on Packaging Technology: Strategies for 21<sup>st</sup> Century held at HBTI, Kanpur during Dec. 18-19, 1999.
76. Shubha Singh and V. K. Tyagi, "Assessment of frying oil quality by determination of polar components", a paper presented in an **AOCS-OTAI International Conference and Exposition** on "Oil seeds and vegetable oil processing" held at New Delhi during Feb. 19-22, 1999.
77. V.K. Tyagi "Evaluation of quality characteristics of sunflower – groundnut oil blends during deep fat frying", a paper presented in **89<sup>th</sup> AOCS Meeting and Expo** at **Chicago, Illinois, USA** during May 10-13, 1998.
78. V. K. Tyagi, S. K. Dubey and Shubha Singh, "Changes in properties of sunflower – groundnut oil blends during frying of food stuffs", a research paper presented in **International Seminar and Exposition** on "Scenario in Oils, Oleochemicals and Surfactants Industries" organized by Oil Technologists Association of India at Lucknow during 10-12, 1998.
79. V. K. Tyagi, A. K. Vasishtha and Shishir Sinha, "Evaluation of frying oils in deep fat frying", a paper presented in **International seminar** on Challenges Facing Fats ,Oleochemicals and Surfactants in the 21<sup>st</sup> Century and Expo" held at Bombay, during Dec. 19-22, 1995.
80. V. K. Tyagi and A. K. Vasishtha, "Changes in physico-chemical characteristics of frying fats", a paper presented in the **84<sup>th</sup> annual meeting** of the **American Oil Chemists' Society** held at **Anaheim, California, USA** during April 25-29, 1993.
81. V. K. Tyagi and A. K. Vasishtha, "Changes taking place in the fatty acids profile of soybean oil during deep frying" a paper presented in the **84<sup>th</sup> annual meeting** of the **American Oil Chemists' Society** held at **Anaheim, California , USA** during April 25-29, 1993.
82. Pramod Kumar, V. K. Tyagi and M.S. Saxena "Surface active compounds and their role in pigment dispersion", a paper presented in 47<sup>th</sup> annual convention of **Oil Technologists' Association of India** held at HBTI, Kanpur during March 20-21, 1993.
83. V.K. Tyagi, and Pramod Kumar, "Formation of polymeric fractions in frying fats", a paper presented in 47<sup>th</sup> annual convention of **Oil Technologists' Association of India** held at HBTI, Kanpur during March 20-21, 1993.

**(b) Reviewer of research papers for publication in following journals:**

1. Journal of Surfactants and Detergents
2. Langmuir
3. Journal of Association of Food Scientists & Technologists of India
4. European Journal of Lipid Science and Technology
5. Tenside Surfactants Detergents
6. Thermochemica Acta



© Details of guidance provided to M.Tech. & Ph. D. students

*M.Tech. Guided*

S.No.	Name of Candidate	Year	Topic
1.	Mr. Shishir Sinha	1995	Studies on frying characteristics of oils& oil blends
2.	Mr. Vivekanand Gaur	1996	Studies on epoxidation of soyabean oil
3.	Mr. Sarvesh Kr. Dubey	1998	Studies on frying stability of sunflower-groundnut oil blends
4.	Mr. Alok Awasthi	1999	Preparation and modification of epoxidised soybean oil for heat resistant systems
5.	Mr. Anuj Jain	2000	Studies on metal - working lubricants
6.	Mr. Vikal Kr. Singh	2001	Synthetic lubricants from vegetable oil derivative
7.	Ms. Rakhi Shanker	2001	High solids coatings
8.	Mr. Santosh Kr. Mishra	2002	Sulphited oil based fat liquors for leather applications
9.	Mr. Deepak Rastogi	2002	Silicone emulsions for hair care products
10.	Mr. Shishir Kumar Pandey	2003	Studies on imidazolium derivatives
11.	Ms Preeti Roy	2004	Synthesis and characterization of 2-dodecen-1 yl succinic anhydride and ethylene diamine based anionic surfactants
12.	Mr. Harendra Singh Parihar	2004	Studies on synthesis and characterization of polyoxyethylene amine surfactants.
13.	Mr. Krishan Kumar Gautam	2005	Synthesis of bio -surfactants from myristic acid using lipase
14.	Ms. Deepika Choudhary	2005	Sulfosuccinates as mild surfactants
15.	Ms. Rachna	2005	Formulation of gels as fabric cleaner
16.	Mr. Parag Madaan	2007	Studies on synthesis and characterization of pyridinium surfactants
17.	Ms. Nidhi Sharma	2011	A study on alkyl polyglycosides (APGs) based surfactants
18.	Ms. Nimisha Chandra	2012	Studies on amino acid based gemini surfactants derived from lauric and myristic acid.
19.	Ms. Sakshi Tyagi	2013	Anionic gemini surfactants and their properties in mixed surfactant systems
20.	Ms. Shilpa Tyagi	2013	Cationic gemini surfactants for antimicrobial activities

21.	Ms. Ayushi Singh	2013	Studies on arginine based surfactants
22.	Ms. Swati Bhadauria	2014	Studies on novel phosphate anionic gemini surfactants
23.	Ms. Neelam Singh	2014	Studies on amino acids based gemini surfactants derived from Lysine and fatty acids
24.	Mr. Satnam Singh	2014	Studies on novel methyl diethanol amine based esterquats
25.	Mr. Vaibhav Gupta	2015	Studies on synthesis of alkyl polyglucosides for hard surface cleaning
26.	Mr. Prateek Srivastav	2016	Amino acid based surfactants for medical applications.

### ***Ph.D Guided***

1.	Ms. Shubha Singh	2002	Studies on frying characteristics of blended vegetable oils	Awarded
2.	Ms. Shilpi Mishra	2009	Synthesis and characterization of ester-amide quaternaries.	Awarded
3.	Ms. Divya Bajpai	2009	Studies on imidazoline surfactants for laundry detergent compositions.	Awarded
4.	Ms. Dipti Shukla	2010	Synthesis and characterization of anionic gemini surfactants	Awarded
5.	Ms. Gunjan	2010	Development of eco-friendly cationic surfactants for laundry detergent compositions	In progress
6.	Mr. Prashant Katiyar	2013	Biodiesel production from crop residues	In progress

**(d) Conferences/seminars/Workshop attended**

S. No.	Name of conference/ seminar attended	Name of organizing institution	Duration	Place
1.	Occupational Health and Safety Management	TEQIP-II, H.B.T.I., Kanpur and Engineering Staff	October 3-5, 2016	Kanpur
2.	Intellectual Property Rights (IPR) and Patenting	TEQIP-II, H.B.T.I., Kanpur and Engineering Staff College of India	during August 27-29, 2016	Kanpur
3.	TEQIP-II National Workshop on outcome based education and NBA accreditation	SPFU, Lucknow and ESCI, Hyderabad	July 1-3, 2016	Lucknow, (Uttar Pradesh)
4.	Sharing of Innovative Ideas and Achievements of Centers of Excellence	MHRD & NPIU under TEQIP-II at Siddaganga Institute of Technology	April 21-23, 2016	Tumkur, Karnataka
5.	Recent innovations in oil and food technology	Division of oils, fats & waxes technology and Division of food technology, Deptt. of Chemical Technology, North Maharashtra University, Jalgaon.	August 23, 2010	Jalgaon Maharashtra, India
6.	101 <sup>st</sup> AOCS meeting and expo, a joint world congress with JOCS	American Oil Chemists' Society	May 16-19, 2010.	Phoenix, Arizona, USA
7.	98 <sup>th</sup> AOCS meeting and expo, a joint world congress with JOCS	American Oil Chemists' Society	May 13-16, 2007.	Quebec City, Canada
8.	National seminar on Packaging Technology: Strategies for 21 <sup>st</sup> Century	Oil Technologists' Association of India(Central Zone)	Dec. 18-19, 1999	HBTL, Kanpur.
9.	AOCS-OTAI International Conference and exposition on oilseeds and vegetable oil processing.	American Oil Chemists' Society and Oil Technologists' Association of India	Feb. 19-22, 1999	New Delhi
10.	89 <sup>th</sup> AOCS annual meeting & expo	American Oil Chemists' Society	May 10-13, 1998	Chicago, Illinois, USA
11.	International seminar and exposition on world scenario in oils, oleo chemicals and surfactants.	Oil Technologists' Association of India	April 10-12, 1998	Lucknow
12.	52 <sup>nd</sup> Annual convention and symposium of Oil Technologists' Association of India	Oil Technologists' Association of India(Central Zone)	Nov. 15-16, 1997	HBTL, Kanpur

13.	International seminar on challenges facing fats, oleo chemicals and surfactants in the 21 <sup>st</sup> century and expo.	Oil Technologists' Association of India (Western Zone)	Dec. 19-22 1995	Bombay
14.	84 <sup>th</sup> AOCS annual meeting & expo	American Oil Chemists' Society	April 25-29, 1993	Anaheim, California, USA.
15.	47th Annual convention of Oil Technologists' Association of India	Oil Technologists' Association of India(Central Zone)	March 20-21, 1993	HBTI, Kanpur
16.	Advances in surface coatings and their applications	Oil Technologists' Association of India(Central Zone)	Dec. 9-10, 1989	HBTI, Kanpur
17.	42nd Annual convention and symposium on "Advances in the Technology of oils and	Oil Technologists' Association of India(Central Zone)	Feb. 21-22, 1987	HBTI, Kanpur
18.	National Seminar on "Oil seed products for edible purposes".	Oil Technologists' Association of India and Association of Food	March 1-2, 1986	HBTI, Kanpur

### **Membership of professional bodies:**

1. **Fellow member**, Institution of Engineers (India)
2. **Life Member**, Oil Technologists' Association of India.
3. **Member**, Harcourtians' Association.

### **Consultancy provided:**

1. M/s Om Chemicals and Pesticides, Unnao (U.P.).
2. M/s Jyoti Capsules, Kanpur (U.P.).
3. M/s Neeraj and Company, Kanpur (U.P.)

### **Extra-curricular activities:**

1. Getting **First prize** in Annual Athletic Meet and Run for Unity and Integrity organized at Republic Day almost every year since joining in the Institute as faculty in 1988.
2. Represented various organizing committees of cultural council of HBTI Kanpur.
3. Nominated Executive Member of Photography Council of HBTI, Kanpur for the session 1988-89.
4. Elected Treasurer for faculty club of HBTI, Kanpur for the session 1988-89 and 1989-90.
5. Ex-Officio Executive Member of Sports Sub-council of HBTI, Kanpur for the session 1992-93.
6. **Elected Secretary**, HBTI Teachers' Association for the session 1993-94 and 1994-95.
7. **Elected Vice-President**, HBTI Teachers' Association for the session 1995-96, 1997-98, 1998-99.
8. **Officiating President**, HBTI Teachers' Association for the session 1998-99.
9. **Elected Secretary**, HBTI Teachers' Association for the session 2005-2006 and 2006-2007.
10. **Elected President**, HBTI Teachers' Association for the session 2007-2008.
11. Nominated Member of Sports Sub-council of HBTI, Kanpur for the session 2008-09.

12. Represented Uttar Pradesh state in 9<sup>th</sup> National Masters Aquatic Championship, 2012 held at Bhopal (M. P.) during October 27-30, 2012.
13. Represented Uttar Pradesh state in 10<sup>th</sup> National Masters Aquatic Championship, 2013 held at Rajkot (Gujarat) during October 25-27, 2013.
14. Represented Uttar Pradesh state in 11<sup>th</sup> National Masters Aquatic Championship, 2014 held at Gulberga (Karnataka) during November 21-23, 2014.
15. Represented Uttar Pradesh state in 12<sup>th</sup> National Masters Aquatic Championship, 2015 held at Bhopal (M.P) during October 09-11, 2015.
16. Represented Uttar Pradesh state in 13<sup>th</sup> National Masters Aquatic Championship, 2016 held at Hyderabad (Telangana) during October 21-23, 2016.

Date: 17/08/2016

Place: Kanpur

(Prof. V. K. Tyagi)

