

Annual Report

Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.

Academic Year 2018 - 2019

PROFORMA-I: Achievements of Faculty

S.No.	Department	Faculty Name	Achievement
1	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Prof.Sanchita Chauhan	Dean, Faculty of Engg. & Technology, Panjab University, Chandigarh
2	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Prof. Seema Kapoor	Coordinator , Swachh Bharat Abhiyan, Panjab University (July to October 2018) Enactus Faculty Advisor : Team bagged KPMG Business Ethics Grant 2018 Secretary, Faculty of Engg. & Technology, Panjab University, Chandigarh
3	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Prof. Anupama Sharma	Member, Board of Studies , Department of Chemical Engineering, Thapar University, Patiala Member Selection Committee for SRF/RA, HRDG-CSIR, New Delhi School of Chemical Engineering, Lovely Professional University, Jalandhar
4	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Dr. Sanjeev Gautam	Member of Editorial Board, Heliyon, Journal Elsevier Since Jan. 2015 Member of Editorial Board, Journal of Nanomaterials, Science and Education Publishing Since 2014 Warden, Boys Hostel No. 3, Panjab University, Chandigarh Coordinator, Equal Opportunity Cell for PWD, Panjab University, Chandigarh Grievance Redressal Officer, Persons With Disability, Panjab University, Chandigarh

PROFORMA-II: Lectures Delivered By Visiting Scholars

Lectures delivered by Visiting Scholars during the Academic Year 2018 - 2019

S.no	Department	Name	Address	Topic	Level	Place	Date(s)
1	Promising Center For Sensors and Electronic Devices.	Prof. Ahmad Umar	Najran University ,Kingdom of Saudi Arabia	Nano Science and Nano Technology	International	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	08-08-2018
2	Reliance Industries	Dr .R. V.Jasra	Reliance Industries		National	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	14-08-2018
3	DUIET, Debrugargh	Dr. Manjit Ghose	DUIET, Debrugargh	Joint Research	National	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	20-08-2018
4	DUIET, Debrugargh	Dr. Ashim Kumar	DUIET, Debrugargh	Joint Research	National	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	20-08-2018
5	DUIET, Debrugargh	Dr. Keshav Bishav Kumar	DUIET, Debrugargh	Joint Research	National	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	20-08-2018
6	DUIET, Debrugargh	Dr. Sumit Kumar	DUIET, Debrugargh	Joint Research	National	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	20-08-2018
7	Dr. SSBUCET, Panjab University, Chandigarh	Prof.R.K.Wanchoo	Dr. SSBUCET, Panjab University, Chandigarh	SAR preparation for NBA	National	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	21-08-2018
8	IIT, Ropar	Dr. Narinder Singh	IIT, Ropar	Emerging Research of Nano Technology	National	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	30-11-2018
9	Physical and theoretical Chemistry	Prof. Michael Springborg	University of Saarl and Saarbrucken, Germany	Interaction session with M.E & Ph.d. Students	National	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	08-03-2019

10	IIT, Ropar	Dr. Nitin	IIT, Ropar	One day Interaction session on Startup and Entrepreneurship	National	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	28-03-2019
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PROFORMA-III: Extension Lectures

S.No	Department	Topic of Activity	Category of activity	Level of Activity	Duration in days	No. of participants	Institution/Place	Date(s)
1	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Magneto-Convection in rotating Nanofluids: Local Thermal Non-equilibrium Model	Extension Lectures	International	3	50	IIT Mandi, INDIA	17-06-2019 to 19-06-2019
2	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Magneto-Convection for Nanofluids: LTNE Model	Extension Lectures	International	3	55	Department of Mathematics and Statistics, Himachal Pradesh University, Shimla- 5	23-11-2018 to 25-11-2018
	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Patenting Material Science inventions	Extension Lectures	National	5	50	NIT Srinagar in FDP	24-06-2010 to 28-06-2019
4	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	The Future of Food Systems	Extension Lectures	National	1	40	HRDC, Panjab University	06-08-2020
5	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Advances in Separation Processes and Purification Techniques	Extension Lectures	National	1	50	SLIET, Longowal	07-06-2019
6	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Use of Technology for Professional Development at Capacity Building for students	Extension Lectures	National	1	60	USOL Panjab University Chandigarh	06-06-2019
7	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Sustainability of Polymer (Plastics) Industry	Extension Lectures	National	1	50	Hotel Mountview, Chandigarh	04-06-2019
8	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Waste utilization-perspectives for a better future at Waste Management Practices for Environment Sustainability	Extension Lectures	National	1	70	SLIET Longowal, Sangrur	14-09-2018
9	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Carbon NanoTubes primed Wheat, Oats & Rice seedlings: Effect on yield, anatomy and toxicity	Extension Lectures	National	1	50	Organised by Indian Chemical Council, Hotel Mountview Chandigarh	07-09-2018

10	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Getting greener with materials research: way forward	Extension Lectures	International	2	30	Green Tech-2018, Lakeland organized by Florida Polytechnic University USA	18-07-2019 to 19-07- 2019
11	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Getting Industry ready 2020	Extension Lectures	National	2	50	Dibrugarh University DUIET (Engg)	21-05-2019 to 22-05- 2019
12	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Pedagogy to Andragogy	Extension Lectures	National	51	50	Dibrugarh University DUIET (Engg) from	17-12- 2018 to 21-12- 2018
13	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Nanotechnology-future prospects at St John's High School (SJOBA Vocational Seminar	Extension Lectures	National	1	65	Sector 26 Chandigarh	23-10-2018

PROFORMA-IV: Faculty Positions
Details of Faculty during the Academic Year 2018 - 2019

Designation	Faculty Name
Chairperson	Prof. Sanchita Chauhan
Professor (11)	Amritpal Toor (Ph.D.), Anupama Sharma (Ph.D.), Anupama Thakur (Ph.D.), Meenakshi Goyal (Ph.D.), Neeta Sharma (Ph.D.), Ritu Gupta (Ph.D.), SanChita Chauhan (Ph.D.), Seema Kapoor (Ph.D.), Sushil Kumar Kansal (Ph.D.), U S Shivhare (Ph.D.), Urvashi Gupta (Ph.D.)
Associate Professor (3)	Gaurav Verma (Ph.D.), Santanu Basu (Ph.D.), Subodh Kumar Aggrawal (Ph.D.)
Assistant Professor (11)	Sanjeev Gautam (Ph.D.), Amit Sobti (Ph.D.), Baljinder Kaur Gill (Ph.D.), Gargi Ghoshal (Ph.D.), Gaurav Rattan (Ph.D.), Harjit Kaur (NET), jodh Singh (M.E.), Maninder Kaur (M.E.), Nidhi Singhal (PG Diploma), Sonia Sharma (Ph.D.), Surinder Singh (M.E.),
Temporary Basis (2)	Twinkle Bedi(M.E. & MBA), Harpreet Kaur(M.Sc)
Guest Faculty(11)	Navneet Kaur(M.E.), Neha Mahajn(M.E.), Bhawna Aggarwal(Ph.d), Monica prabhakar(Ph.D), Shilpi Ahluwalia(M.E.), Sehdev Saini(M.E.), Mukul Kataria(M.E.), Twinkle Kamra(M.Sc), Radha Sharma(Ph.D), Shikha Sharma(MBA), Roopali Garg(MBA)
Research Fellows	Umang Bedi, Amandeep Kaur, Amanjot Kaur, Vivek Kumar, Narinder Singh, Purba Chakraborty, Vikas Sharma, Sahil Kapoor, Girish Gupta, Aashima, Hasanpreet Kaur, Kanupriya Sharma, Shaffy, Priyanka Verma, Preeti Beniwal, Disha Gularia

PROFORMA-V: Student Enrollment
Program level Student Enrollment during the Academic Year 2018-2019

	SC		ST		BC		Others (Including General)		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
B.E. (Chemical)									
1st Year	10	7	1	1	3	0	44	22	88
2nd Year	12	2	5	1	3	1	57	13	94
3rd Year	9	3	6	2	2	2	48	20	92
4th Year	8	3	6	0	3	0	42	19	81
B.E. (Food Technology)									
1st Year	1	0	0	0	2	0	11	16	30
2nd Year	0	0	3	0	2	0	17	12	34
3rd Year	3	2	0	0	1	1	12	9	28
4th Year	0	3	0	1	1	1	13	13	32
B.E. (Chemical)-MBA									
1st Year	0	0	0	0	0	0	11	17	28
2nd Year	0	0	0	0	0	0	14	10	24
3rd Year	3	0	0	1	0	2	19	13	38
4th Year	4	2	1	0	2	0	17	10	36
5th Year	3	1	0	1	2	0	18	7	32
M.E. (Chemical)									
1st Year	1	0	0	0	0	0	7	6	14
2nd Year	2	0	1	0	0	0	6	7	16
M.E (Food Tech.)									
1st Year	0	1	0	0	0	0	0	3	4
2nd Year	2	1	0	0	0	1	3	2	9
M.Sc (Ind. Chem.)									
1st Year	0	0	0	0	1	0	5	8	14
2nd Year	1	1	0	0	1	0	7	9	19

PROFORMA-VI: Summary of Publications

Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.

Dr. S.S. Bhatnagar University Institute of Chemical Engineering and Technology (SSBUICET) (formally known as Department of Chemical Engineering and Technology (DCET)) was established in 1958 in collaboration with a leading Institute of Engineering Education in USA, the Illinois Institute of Technology, Chicago. Professor R.E. Peck from IIT Chicago joined as the first Head of Department. Later in 1999, in view of the growing demand Undergraduate programme in Food Technology was introduced and in 2007, Five year integrated programme of Bachelors degree in Chemical Engineering with MBA was introduced. The institute has been bestowed with numerous projects like TEQIP-III, a World Bank Project, Special assistance Grant from UGC, FIST from DST and individual grants from AICTE, UGC, DST, IUAC, MoFI, CSIR etc.

Publications: Books (with / without ISBN)

Publications: Books Chapters/Reference/General

AS Kumar, R Desika, M Gandhi, S-T Huang, G. Verma, MD Rajagopalan, B Purushotham: Electrochemistry of Photochemicals and Natural Products. Phytocompounds: source and Bioactivities, Stadium Press, 2019.

Singh R, Kumar V, Verma A, Sobti A. and Toor A. P.: Agnihotri A K., Reddy. K. and Bansal A. (Editors), Photocatalytic Activity of Bi-doped TiO₂ for Phenol Degradation Under UV and Sunlight Conditions , *Springer Nature Singapore* Pte Ltd. (2019).

Verma A, Toor A P, Bansal P, Sangal V and Sobti A.: Agnihotri A K., Reddy. K. and Bansal A. (Editors), TiO₂-Assisted Photocatalytic Degradation of Herbicide 4-Chlorophenoxyacetic Acid: Slurry and Fixed-Bed Approach , *Springer Nature Singapore* Pte Ltd. (2019).

Jitendra P Singh, Richa Bhardwaj, Aditya Sharma, Baljeet Kaur, Sung O Won, Sanjeev Gautam, Keun Hwa Chae: [Fabrication of Magnetic Tunnel Junctions](#), in "Advanced Applications in Manufacturing Engineering", Woodhead publishing, pages 53-77 (2019) (978-0-08-102414-0, online Nov 2018)

Urvashi Gupta and Jyoti Ahuja: *Magneto Convection in Rotating Nanofluid Layer: Local Thermal Non-Equilibrium Model* "Journal of Nanofluids" (American Scientific Publishers), 8(2), 430-438, 2019

Urvashi Gupta, Veena Sharma, Anuradha Chowdhary and A. Sharma: *Electro-Hydrodynamics Convection in Dielectric Rotating Maxwellian Nanofluid Layer* "Journal of Nanofluids" (American Scientific Publishers), 8(3), 477-489, 2019.

Urvashi Gupta, Jyoti Sharma and Shushant Shukla: *A Revised Model for Magneto convection in Binary Nanofluids* "International journal of Mathematical, Engineering & Management Sciences", 4(1), 131-138, 2019

Urvashi Gupta and Jyoti Ahuja: *Rayleigh-Bénard Convection for Nanofluids for more Realistic Boundary Conditions (Rigid-Free and Rigid-Rigid) using Darcy model* "International journal of Mathematical, Engineering & Management Sciences", 4(1), 139-156, 2019.

Urvashi Gupta, Veena Sharma, Anuradha Chowdhary: *Electrothermal convection in dielectric Maxwellian nanofluid layer* "Journal of Applied Fluid Mechanics" (Regional Information Center for Science and Technology) ,11(3), 765-777, 2018.

Surinder Singh, S. K. Sharma & S. K. Kansal: Batch extraction of gossypol from cottonseed meal using mixed solvent system and its kinetic modeling, *Chemical Engineering Communications*.(2019) online published impact Factor: 1.431

Ritika, Kaur, M., Umar, A., Mehta, S.K., Singh, S., Kansal, S.K., Fouad, H., Alothman, O.Y. Rapid: Solar-light driven superior photocatalytic degradation of methylene blue using MoS₂-ZnO heterostructure nanorods photocatalyst, *Materials*, 11 (11), (2018) art. no. 2254.

Neeta Sharma, Jatinder Singh & Neha Dhiman: Effect of Fe(II) on the Adsorption of Mn(II) from Aqueous Solution Using Esterified Saw Dust: Equilibrium and Thermodynamic Studies, *Indian Chemical Engineer*, 60 (3) 255- 268 (2018)

Neeta Sharma & Neha Dhiman: Kinetic, Mechanistic, Equilibrium and Thermodynamic Studies for the Adsorption of Paracetamol on Agricultural based Adsorbents and Nanometal Oxides , *International. Journal of Research in Chemistry and Environment* 9(2), 11-20. April 2019

Removal of pharmaceutical drugs from binary mixtures by use of ZnO nanoparticles *Environmental Technology & Innovation*, Vol 15, 2019, 100392

Excess Thermodynamic Properties of a binary liquid mixture of Isopropylbenzene and N, N dimethylformamide at T= 293.15 K, 303.15 K and 313.15 K, *Journal of Emerging Technologies and Innovative Research*, 5(11): 222-232 (2018).

Prabhjot Kaur, Gargi Ghoshal, Ashay Jain: Bio-utilization of Fruits and Vegetables Waste to Produce B-Carotene in Solid State Fermentation; Characterization and Antioxidant Activity. *Process biochemistry*, 76, 155-164, 2019. Impact Factor 2.66

Gargi Ghoshal, Sapna Mehta: Effect of Chitosan on Physico-chemical, Rheological Attributes of Bread. *Food Science and Technology International*, 25(3), 198-211, 2019. Impact Factor 1.081

Rajan Sharma, Gargi Ghoshal, Usman, Kanwar, Swati, Yadav, Kamlender, Basu, Santanu and Mazumder, Koushik: Recent trends in food packaging. *Nutrition and Food Science*. 48(5), 764-779. Effect of wheat straw arabinoxylan and B-glucan stearic acid ester composite coatings on post-harvest shelf life extension of apple (Royal Delicious). *Carbohydrate Polymers* (2019), 209, 338-349. Devendra, Patel, S.S., Birwal, Preeti, Basu, Santanu, Deshmukh, G. and Datir, R.: Brahmi (*Bacopa monnieri*) as functional food ingredient in food processing industry. *Journal of Pharmacognosy and Phytochemistry* (2018). 7(3), 189-194.

M. Kumar, G. rattan, R. Prasad: Promotional effects of Au on gamma Alumina supported cobalt based catalyst for total oxidation of Methane”, *Bulgarian Chemical Communications*, vol 50, Issue 3, Page 437 - 444, 2018.

Kumar P, Sharma K. & Verma G.: Role of shell type of core/shell nanoparticles on luminescence properties of PVK-CdS/X nanocomposite films. *Applied Physics A*, 125(2019).

Verma G: Weathering, salt spray corrosion and mar resistance mechanism of clay (nano-platelet) reinforced polyurethane nanocomposite coating. *Progress in Organic Coating*, 129 (260-270) 2019

Kaur P, Verma G. & Sekhon S.S.: Biomass derived Hierarchical Porous Carbon Materials as Oxygen Reduction Reaction Electrocatalysts in Fuel Cells. *Progress in Materials Science* 102 (1-71) 2019.

Tiwari R.N., Gandharv C. A. Dharmvir K., Kumar S. Verma G.: Scale Minimization in Sugar Industry Evaporators using Nanoporous Industrial Bio-solid Waste Bagasse Fly Ash. *Suagr Tech* 2018.

Kaur R., Verma G., Matiyal B. Thakur N.: Preparation of Nanosized Bioapatite (Bap) by cryogenic Grinding from Sintered Scales of Silver Carp *Hypophthalmichthys molitrix* (Cuvier and Valenciennes). *Current Science* 115 (2018).

Sharma K., Kumar P., Verma G.: Effect of nanocrystals concentration on optical and luminescent properties of PVK:ZnSe nanocomposites. *Materials Science Poland* 36 (2018).

Pathania S., Sharma K. Ahmad M, Kumar P., Verma G.: Study of structure and optical properties of sonochemically synthesized ZnO:Cs nanocrystals. *Material Focus* 7 (2018).

Rupal Malika, Ankita Goyal, Sarita Yadav, Nancy Gupta, Neetu Goel, Anupama Kaushik, Vinod Kumar K.B. Tikoo, Sonal Singhal: Functionalized magnetic nanomaterials for rapid and effective adsorptive removal of fluoroquinolones: Comprehensive experimental cum computational investigations, *Journal of Hazardous Materials*, 364, 2019, Pages 621-634 (Impact factor 6.434)

Paramdeep Kaur, Anupama Kaushik, Sonal Singhal: Comparative evaluation of photocatalytic performance of hexagonal ferrites procured via sol-gel route, *Materials Today: Proceedings*, 14(2), 2019, Pages 426-434

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Komal, Kanu Gupta, Simranjeet Kaur, Jasleen Kaur, Anupama Kaushik, Sonal Singhal: A comparative analysis of source based distinctly functionalized nanostructured cellulose for the adsorptive removal of toxic colorants, *Cellulose*, 2019, 26(3), 1703-1724 (Impact factor 3.809)

Rupal Malik, Anil Kumar Pinnaka, Manpreet Kaur, Vinod Kumar, Kulbhushan Tikoo, Sandeep Singh, Anupama Kaushik, Sonal Singhal: Water soluble glutathione CdS QDs with exceptional antimicrobial properties synthesized via green route for fluorescence sensing of fluoroquinolones, *Chemical technology and Biotechnology*, 2019, 94(4), 1082-1090 (Impact factor 2.587)

Kanu Gupta, Jasleen Kaur, Anupama Kaushik, Sonal Singhal: Stabilization of Magnetic Ferrite Nanostructures with Cellulose Derived From Biomass for the Abatement of Environmental Pollution, *Materials Today: Proceedings*, 14(2), 2019, Pages 417-425

Monica Bansal, Dharamender Kumar, Ghanshyam S. Chauhan, *Anupama Kaushik*: Preparation, characterization and trifluralin degradation of laccase-modified cellulose nanofibers, *Materials Science for Energy Technologies*, June 2018, 1(1), 29-37

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Asymptotic behavior *Powder Technology* 345:82-90 (2019)

Guliani D., Kaur K, Singh N, Sobti A. & Toor A. P.: Catalytic performance of sulfate-grafted graphene oxide for esterification of acetic acid with methanol *Chemical Engineering Communications* 206 (5): 592-604 (2019).

Sobti A., Toor A. P., Wanchoo R K.: Oscillatory and steady shear rheological properties of aqueous polyacrylamide solutions *Chemical Data Collections* 17-18: 356-369 (2018)

Sraw A., Kaur T, Pandey Y, Sobti A., Wanchoo R K, Toor A. P.: Fixed bed recirculation type photocatalytic reactor with TiO₂ immobilized clay beads for the degradation of pesticide polluted water *Journal of Environmental Chemical Engineering* 6:7035-7043(2018)

Ritika, Kaur, M., Umar, A., Mehta, S.K., Singh, S., Kansal, S.K., Fouad, H., Alothman, O.Y.: Rapid solar-light driven superior photocatalytic degradation of methylene blue using MoS₂-ZnO heterostructure nanorods photocatalyst (2018) *Materials*, 11 (11).

Sharma, S., Umar, A., Sood, S., Mehta, S.K., Kansal, S.K.: Photoluminescent C-dots: An overview on the recent development in the synthesis, physiochemical properties and potential applications (2018) *Journal of Alloys and Compounds*, 748, pp. 818-853.

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Surinder Singh, S. K. Sharma & S. K. Kansal: Batch extraction of gossypol from cottonseed meal using mixed solvent system and its kinetic modeling, *Chemical Engineering Communications*.(2019) online published

Richa Bhardwaj, Baljeet Kaur, Jitendra Pal Singh, Manish Kumar, H.H. Lee, Parmod Kumar, R.C. Meena, K. Asokan, Keun Hwa Chae, Navdeep Goyal, Sanjeev Gautam: [Role of Low Energy Transition Metal Ions in Interface Formation in ZnO Thin films and their effect on Magnetic Properties for spintronics applications](#), *Appl. Surf. Sci.*, 479 (2019) 1021-1028. I.F. =4.439

Monika Duhan, Harminder Kaur, Richa Bhardwaj, Naveen Kumar, Sanjeev Kumar, Anita Gupta, Sanjeev Gautam: [Magnetic metamorphosis of structurally enriched sol-gel derived SnO₂ nanoparticles](#), *Vacuum*, 166 (2019) 385-392. I.F. =2.067

Kanika Upadhyay, Navdeep Goyal, Sanjeev Gautam: [Solvothermal assisted synthesis of CoSb₃ phase evolution: Morphology and electrical study for thermoelectric applications](#), *Vacuum*, 163 (2019) 142-147. I.F. =2.067

Mayuri Sharma, Rezaq Naji Aljawfi, Kavita Kumari, KH Chae, S Dalela, S Gautam, PA Alvi, Shalendra Kumar: [Investigation of local geometrical structure, electronic state and magnetic properties of PLD grown Ni doped SnO₂ thin films](#), *Journal of Electron Spectroscopy and Related Phenomena*, 232 (2019) 21-28. I.F. =1.604

Mayuri Sharma, Rezaq Naji Aljawfi, Kavita Kumari, KH Chae, S Gautam, S Dalela, PA Alvi, Shalendra Kumar: [Investigation of local atomic structure of Ni doped SnO₂ thin films via X-ray absorption spectroscopy and their magnetic properties](#), *Journal of Materials Science: Materials in Electronics*, 30(1) (2019) 760-770. I.F. = 2.324

Anil Kumar, R.K.Sharma, N. Goyal, Sanjeev Gautam: [Synthesis, characterization & study of Ni-doped CdS nanoparticle for high voltage application](#), *Vacuum*, 160 (2019) 75-80. I.F. =2.067

Mojtaba Amini, Fatemeh Bakhshi Ghameshloo, Sanjeev Gautam, Keun Hwa Chae: [Nickel cobaltite nanoparticles: preparation, characterization, and catalytic activity](#), *IONICS*, 01 (2019) 1-8. I.F. =2.354

Richa Bhardwaj, J.P. Singh, K. H. Chae, Navdeep Goyal, Sanjeev Gautam: [Electronic and magnetic structure investigation of vanadium doped ZnO nanostructure](#), *Vacuum*, 158 (2018) 257-262. I.F. =2.067

Abhishek Katoch, Richa Bhardwaj, Navdeep Goyal, Sanjeev Gautam: [Synthesis, structural and optical study of Ni-doped Metal-organic framework for adsorption based chemical sensor application](#), *Vacuum*, 158 (2018) 249-256. I.F. =2.067

Sanjeev Gautam, K. H. Chae, J. Llanos, O. Peña, K Asokan: [Electronic structure of Ln₂O₂Te \(Ln=La, Sm and Gd\) by X-ray absorption spectroscopy](#), *Vacuum*, 158 (2018) 39-41. I.F. =2.067

Mohsen Janmohammadi, Mojtaba Amini, Naser Sabaghnia, Ali Akbari, Sanjeev Gautam, Keun Hwa Chae: [Synthesis of copper nanoparticles supported on MoO₃ using Sun spurge leaf extract and their catalytic activity](#), *Appl. Organomet. Chem.* 32(11) (2018) e4531

Amini, M., Kafshdouzsani, M.H., Akbari, A., Gautam, Sanjeev, Shim, C.-H., Chae, K.H.: [Spinel copper ferrite nanoparticles: Preparation, characterization and catalytic activity](#), *Appl. Organomet. Chem.* 32(9) (2018) e4470.

Ashish Ravalia, Bharat Kataria, Savan Katba, Sadaf Jethva, Megha Vagadia, K. Asokan, Sanjeev Gautam, Keun Hwa Chae, D.G. Kuberkar: [Electronic excitation induced modifications in the ferroelectric polarization of BiFeO₃ thin films](#), *Vacuum*, 155 (2018) 572-577 I.F. =2.067

Publications: Papers Published in Proceedings of Conferences

Kaur, Harjit, Kaushik Sanjay Optimising Resource Allocation for SQM: A Comparative Case Study in Pharmaceutical Industry , International Conference Global Issues in Management (GIM-2019) ,Feb 25-26, 2019 , Organised by University Business School , Panjab University, Chandigarh

Kaur, Maninder, Effect of total solids concentration on biogas production from rice straw and bagasse” paper presented in CHEMCON-2018 on 27th to 30th December, 2018 organized by NIT , Jalandhar.

Kaur, Maninder “Biodegradation of crops residue through anaerobic digestion” in CHASCON-2019 on 13th to 15th march, 2019 organized by Panjab University , Chandigarh.

Rattan, Gaurav, A sutudy of oxidation of Co over alumina supported CuO – CeO₂ – ZrO₂ catalysts, presented at ICACSE – 2018 at NIT Tiruchirapalli, Tamilnadu.

Maninder Kumar, Ram Prasad, Gaurav Rattan, Effect of Cerium addition to gamma alumina supported CoO_x, presented at CHEMCON – 2018, NIT Jalandhar

Jodh singh, Rajesh Kumar, Munish Gupta, Harmesh Kumar. Thermal conductivity analysis of CuO/water nanofluid using factorial design. In International Conference on Advancement in Engineering and Technology (ICAET-2019) form March 15-16, 2019 at BGIET, Sangrur (Punjab).

Jodh Singh. Production and stability issues of Nanofluids. In International Conference on Advanced Materials, Energy and Environmental Sustainability from 14-15, December, 2018 at UPES Dehradun, Uttrakhand, India

High Performance Materials from Nanocellulose derived from Waste Lignocellulosic Biomass Keynote talk in the 4th International Conference on Bioinspired and Biobased Chemistry & Materials held in Nice, October 14-17, 2018

Gargi Ghoshal, Antiosteoporotic effect of Cissus Quadrangularis- A review, CHASCON-2019, 13th to 15th March, 2019

Department	Publication Type	International	National	Others
DrSSBhatnagar University Institute of Chemical Engg. & Tech.	Non-Peer Review Journals	0	0	0
DrSSBhatnagar University Institute of Chemical Engg. & Tech.	Publication (Conference Proceedings)	04	05	0
DrSSBhatnagar University Institute of Chemical Engg. & Tech.	Publication (Peer Review journals)	53	03	0

PROFORMA-VII: Research Schemes

Sponsored Research Projects during the Academic Year 2018 2019

S.No.	Department	Funding Agency	Name of Project	Outlay (INR)	Funds Sanctioned (I NR)	Type	Status	Duration(in years)	Research Team	Principal Investigator
1	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	DST	Utilizing the versatile platform of biomass derived nanocellulose based magnetic nanocomposites for the facilitative removal of organic pollutants from wastewater	-	49 Lacs	Major	Ongoing	2019-21		Prof. Anupama Sharma
2	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	CSIR	Magnetically Modified Superhydrophobic Porous Cellulose Sponge from Waste Lignocellulosic Biomass for Oil Water Separation	-	Allocation yet to be received	Major	Ongoing	2019-2022		Prof. Anupama Sharma
3	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	DST	Providing potable water using functionalised cellulose as catalyst from locally available biomass		48 Lacs	Major	Ongoing	2018-2021		Prof. Anupama Sharma
4	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	World Bank	TEQIP-III		7 Crore	Major	Ongoing	2017-20		Prof. Amrit Pal Toor & Department Faculty
5	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	UGC	SAP		111.50 Lakhs	Major	Ongoing	2018-23		Prof. Sanchita Chauhan & Department Faculty
6	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	AICTE	MODROB		6 Lakhs	Major	Ongoing	2017-20		Prof. Sushil Kumar Kansal
7	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	UGC-DAE	Electronic structure investigation of mixed Cu-co ferrosphenel(MFe204-type): XAFS Study	213000	11.64 lakhs	Major	Ongoing	2015-20		Dr. Sanjeev Gautam

8	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	UGC- IUAC	<i>Radiation induced Interface and magnetic study of ZnFe₂O₄/ Insulator/Co-Ferrite</i>	217000	6,74,000	Major	Ongoing	2018-2021		Dr. Sanjeev Gautam
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PROFORMA-VIII: Seminars/Conferences/Symposia/Workshops Organized by the Department

Details of Seminars, Conferences, and Workshops organized during the Academic Year 2018 - 2019

S.no	Department	Title of event	Funding Agency	Place	Date(s)	No. of Participating Faculty	Name of Organizer
1	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Aanwik19 , Zero Waste Technical Fest	TEQIP-III	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	15.03.19 to 17.03.19	10	Prof. Anupama Sharma
2	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Chocolate For the students of Food Technology	Mr Mandeep Singh, Product ion Manager, Mondelez International, Baddi	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	14-09-2018	10	Prof. Gargi Ghoshal
3	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Research Methodology Workshop		Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	17-9 -2018 to 19-9-2018	4	Prof. S.K. Kansal
4	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Art of living student excellence and learning program		Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	04-02 -2019 to 09-2-2019	7	Prof. S.K. Kansal
5	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Corporate Trainer and free lancer for 2 nd year and 3 rd year B.E. (Chemical) students		Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	28-02 -2019 to 01-03-2019	7	Prof. Anupama Sharma
6	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Innovative Approaches in Teaching and Research , for faculty and Research Scholars		Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	8		Prof. Ritu Gupta

7	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Workshop on study opportunities in UK		Dr SS Bhatnagar University Institute of Chemical Engg. & Tech	8		Prof. Anupama Sharma
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PROFORMA-IX: Seminars/Conferences/Symposia/Workshops Attended by the Faculty

Details of Seminars, Conferences, and Workshops attended by the Faculty during the Academic Year 2018 - 2019

S.No.	Department	Name	Title of event	Type	Level	Place	Date(s)	Organized By
1	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Prof. Neeta Sharma	Professor Ram Chand Paul National symposium	Symposia	National	Department of Chemistry Panjab University Chandigarh	22-23rd February, 2018	Department of Chemistry & Centre of Advanced Studies in Chemistry, Panjab University, Chandigarh
2	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Prof. Harjit Kaur	International Conference Global Issues in Management (GIM-2019)	Conference	International	UBS, Panjab University, Chandigarh	Feb 25-26, 2019	
3	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Dr. Gargi Ghoshal	CHASCON-2019	Conference		Panjab University, Chandigarh	13-15 th March, 2019	
4	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Ms. Nidhi Singhal	Refresher Course in Economics and Business Management	Refresher Course		University Business School, Panjab University Chandigarh	December 07-27,2018	
5	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Ms. Harjit Kaur	Refresher Course in Economics and Business Management	Refresher Course		University Business School, Panjab University Chandigarh	December 07-27,2018	
6	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Prof. Seema Kapoor	Enhancement of bone cement properties			13 th Chandigarh Science Congress CHASCON-2019, P.U., Chandigarh	13-15 March 2019	
7	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Prof. Jodh Singh	International Conference on Advancement in Engineering and Technology (ICAET-2019) form March at BGIET, Sangrur Biotechnica Chandigarh	Conference	International	BGIET, Sangrur, Punjab, India	15-16, March, 2019	
8	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Prof. Jodh Singh	International Conference on Advanced Materials, Energy and Environmental Sustainability (ICAMEES-2019)	Conference	International	UPES, Dehradun , Uttrakhand, India	14-15, December,2018	
9	Dr SS Bhatnagar	Prof.S.K.K	CHEMCON-2018			NIT Jalandha	28 December	

	University Institute of Chemical Engg. & Tech.	ansal					2018	
10	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Prof.S.K.K ansal	TEQIP-III national conference on “Research and Innovation in chemical engg. & technology	Conference	National	SLIET, Longowal	March 1-2, 2019	
11	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Prof.S.K.K ansal	Short term course on Environmental wellness by DCRUST	Short term course		Murtha	8-12 April, 2019	

PROFORMA-X: Ph.D. Awards

Research Scholars Awarded Doctorate during the Academic Year 2018- 2019

S.No.	Department	Name of Candidate	Title of the Thesis	Gender	Category	Nationality	Supervisor(s)
1	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Neha Dhiman	Studies On The Removal Of Some Common Drugs From Aqueous Solutions Using Metal Oxide Nanoparticles And Agricultural Based Adsorbents- A Comparison	Female			Prof. Neeta Sharma
2	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Mr. Rajkumar	Development of Starch based Active Packaging : Characterization and Application in Food Packaging	Male			Dr. Gargi Ghoshal/ Prof. Meenakshi Goyal
3	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Usman Ali	Development of biodegradable fruit coating materials from agricultural byproducts	Male			Dr. Santanu Basu
4	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Dr. Dheeraj Ahuja	Synthesis and Characterization of Castor Oil Based Polyurethane Nanocomposites for Shape Memory Application	Male			Prof. Anupama Sharma
5	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Dr. Lokesh Kumar	Synthesis and Characterization of Nano-Hydroxyapatite/Poly urethane Nano-Composite Scaffolds	Male			Prof. Anupama Sharma
6	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Anil Sharma	Bandgap Engineering of Cadmium Sulphide (CdS) nanoparticle	Male			Prof. Navdeep Goyal and Dr. Sanjeev Gautam
7	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Amardeep Bharti	Investigation of Light trapping by plasmonic nanostructure in flexible photovoltaic cell	Male			Prof. Navdeep Goyal and Dr. Sanjeev Gautam

PROFORMA-XI: Miscellaneous

1. Any other noteworthy achievement of the department during this Academic Year 2018 - 2019

S.no	Department	Achievement
1	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	TEQIP-III, UGC-SAP, 59 NIRF Ranking-2018,
2	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Bestowed with 'DISTINGUISHED FACULTY IN ENGINEERING' (Major Area of Study - Chemical Engineering) award in June 2019 in the 5 th Faculty Awards - VIFA 2019 by Venus International Foundation (VIF), Chennai.
3	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Evaluation of Thin films, Aweratek Corporation UDA, Nanotechnology thin films/coatings on Dec 2017 to November 2019
4	Dr SS Bhatnagar University Institute of Chemical Engg. & Tech.	Optical properties Drg. Roger Terill, San Jose State University, Materials Jan 2019 to ongoing

2. Number of collaborations during the Academic Year during this Academic Year 2018–2019

Title	Name of Agency & Contact Details	Date	Valid Upto	Level	Nature	Source of Financial
Panjab University- KIST Beamlines at Pohang Accelerator Lab	Keun Hwa Chae (khchae@kist.re.kr) Korea Institute of Science and Technology, Seoul, South Korea	07-05-2017	06-05-2022	Exchange Research Student	Research advanced experiments/discussions	KIST

3. Faculty selected to visit other Labs/Institutions/Industries in India and abroad.

Name of faculty	Place	Date	Type	Remarks
Dr. Sanjeev Gautam	Florida Polytech University, Lakeland	July 11 - July 20, 2018	International Collaboration and International Workshop on Green Chemistry Engineering and Technology(GCET-2018)	Partially funded by PURSE-II international visit grants
Dr. Sanjeev Gautam	Korea Institute of Science and Technology, Seoul, South Korea	May 31 - June 29, 2019	International collaboration visit as Synchrotron expert to Pohang Accelerator Lab, Pohang, South Korea	Funded by KIST

4. Patents Filed during the Academic Year 2018-19.

Title of Patent	Patent Application No.	Current Status
IMPROVED CALCIUM ORTHOPHOSPHATE FOR BIOMEDICAL APPLICATIONS AND METHOD THEREOF	201811030244	Filed