



THAPAR UNIVERSITY, PATIALA
DEPARTMENT OF CHEMICAL ENGINEERING
NEWSCASTER

Period: [January – June 2014.](#)

Date: June 30, 2014

1. New Faculty Joined

Dr. Raj Kumar Arya joined as Assistant Professor in the Department of Chemical Engineering on 26th June 2014.

2. Research Projects

Sr. No.	Project Title	Funding Agency	Year	Amount (Lacs)	Investigator (s)
1	Floating wick type vertical multiple effect diffusion solar still waste heat recovery	DST	2014	11.224	Dr. Madhup Kumar Mittal and Dr. D. Gangacharyulu
2	Studies on STF – nanoclay based composites for personal armour systems	ARMREB (CDSW) DRDO	2014	29.7644	Dr. Rajeev Mehta
3	Investigation of Hydrodynamics and RTD of Pulp Digester Using Radiotracer Technique	DAE-BRNS, BARC, Mumbai	2014–17	21.38	Dr. Avinash Chandra Dr. H. Bhunia Dr. P.K. Bajpai
4	Synthesis and characterization of high capacity adsorbents for CO ₂ capture	DST	2014–17	26.00	Dr. H. Bhunia Dr. P.K. Bajpai
5	Development of non-ecotoxic polyolefins with controlled environmental degradation by using high energy radiation and pro-oxidants	DAE-BRNS, BARC, Mumbai	2014–17	22.00	Dr. H. Bhunia Dr. P.K. Bajpai

3. Ph.D. Students Admitted

S.No.	Name of Scholar	Supervisor(s)	Thesis Title	Date of Registration
1.	Mr. Gurpreet Singh Saggi (901301002)	Dr. S. Mittal (SCBC)	Effect of agricultural waste combustion on children's health	January 2014

4. Publications (SCI Journals)

Sr. No.	Title of paper	Author(s)	Journal name and other details	Impact factor
1	Ring Opening Polymerization of Lactide in a Monomode Microwave using Stannous Octoate and Dibutyltin Dimethoxide Catalysts	P. Singla, R.Mehta, D. Berek, S.N. Upadhyay	Journal of Macromolecular Science – Part A PAC 51(4), 350-361	0.807
2	Silver ion beam irradiation effects on poly(lactide-co-glycolide) (PLGA)/Clay nanocomposites	Manpreet Kaur, Surinder Singh, Rajeev Mehta	Applied Physics Part A: Material Science and Processing (accepted)	1.545
3	Improvement in Regeneration Properties and Multi-cycle Stability for K ₂ CO ₃ /Al ₂ O ₃ Adsorbents for CO ₂ Removal from Flue Gas	Surajit Sengupta, S. Reddy, R. Dongara, A. Das, H. Bhunia, P.K. Bajpai	Energy & Fuels (accepted)	2.733
4	Mechanical and Morphological Properties of High Density Polyethylene and Polylactide Blends	Gaurav Madhu, Haripada Bhunia, Pramod K Bajpai, Veena Choudhary	Journal of Polymer Engineering (accepted)	0.50
5	Blends of high density polyethylene and poly(L-lactic acid): Mechanical and thermal properties	Gaurav Madhu, Haripada Bhunia, Pramod K Bajpai,	Polymer Engineering & Science, 54(9), 2155-2160, 2014	1.441
6	Kinetics of Biodegradation Polypropylene / Polylactide Blends	Kimi Jain, Gaurav Madhu, H. Bhunia, Pramod K. Bajpai, and M. S. Reddy	Journal of Polymer Materials 31 (1), 63-76, 2014	0.253
7	Process parametric optimization of a divided wall distillation column	Sangal V. K., Kumar V., Mishra I. M.,	<i>Chemical Engineering Communication</i> , 2014, 201(1), 72-87	0.913
8	Optimization of Photocatalytic Process Parameters for the Degradation of Acrylonitrile Using Box Behnken Design	Singh P., Dhir A., Sangal V. K.	Desalination and Water Treatment, 2014 (Accepted)	0.852
9	Performance of diffusion distillation column for production of fuel grade ethanol (DOI: 10.1002/jctb.4495)	Neetu Singh & Ram Prasad	Journal of Chemical Technology and Biotechnology (Wiley)	2.494
10	Reactive Extraction of Pyridine-2-carboxylic Acid (Picolinic Acid) Using Nontoxic Extractant and Diluent Systems	Dipaloy Datta and Sushil Kumar	Journal of Chemical & Engineering Data, 2014, 59 (5), pp. 1540-1548	2.045

5. Invited Lectures

Sl. No.	Name of the Guest	Date	Invited Lecture
1	Dr.N.N. Sharma BITS Pilani, Department of Mechanical Engineering BITS, Pilani-333031	27-03-2014	On-board Pumping in Microfluidic Devices

6. Post-Graduate (M.Tech.) Theses Completed:

(a) M. Tech. Chemical Engineering

Sl. No.	Title of the Thesis	Name of the Student (Roll No.)	Name of the Faculty
1	Studies of CO ₂ sequestration by <i>Anabaena viridabilis</i> in stirred tank batch type photobioreactor	Mr. Abhishek Sharma	Dr. P. K. Bajpai, Dr. Haripada Bhunia
2	Removal of phenol from wastewater using fly ash as adsorbent	Mr. Manish Kumar Dhiman	Dr. Raj Kumar Gupta, Dr. V. K. Bulasara
3	Dairy Waste Water Treatment by Continuous Electrochemical Process	Ms. Poonam Kumari	Dr. V. K. Sangal, Dr. J. P. Kushwaha
4	Adsorption Study for the Treatment of Wastewater using cloisite 15A as an Adsorbent	Ms. Shivani Kalotra	Dr. Rajeev Mehta, Dr. V. K. Sangal

(b) Other P.G. Theses guided by the faculty members of Chemical Engineering

Sl. No.	Title of the Thesis	Name of the Student (Roll No.)	Name of the Faculty
1	Effect of Al ₂ O ₃ /water Nanofluid concentration on heat transfer and fluid flow characteristics in U-type flow crossflow compact heat exchanger	Sandeep Kumar (801283023)	D. Gangacharyulu, ChED & Sumeet Sharma, MED
2	Effect of Copper Oxide nanoparticles dispersed in water/ethylene-glycol mixture (60:40) on heat transfer and fluid flow characteristics in a preheater.	Parul Sharma (Ms) (801283019)	D. Gangacharyulu, ChED & Sumeet Sharma, MED
3	In the area of polymer fibre- Epoxy FRP nanocomposites	Madhavraturi	Dr. Rajeev Mehta Dr. Tarun Nanda
4	Study the effect of OMMT dispersion on mechanical behavior of GFRP nanocomposites	Gurpreet Kaur Dhingra	Dr. Rajeev Mehta Manjeet Singh, Sundeep Singh
5	Mechanical properties of glass-fiber reinforced epoxy nanocomposites: Effect of different nanoclays	Kabal Singh Bhangu	Dr. Rajeev Mehta Bikramjit Sharma
6	Failure analysis of pin joints in carbon-epoxy nanoclay composite laminates	Rohit (M. Tech.)	Dr. Jaswinder Singh Saini Dr. Haripada Bhunia
7	Failure analysis of pin joints in glass-epoxy nanoclay composite laminates	Mandeep Singh (M. Tech.)	Dr. Jaswinder Singh Saini Dr. Haripada Bhunia
8	Studies of CO ₂ sequestration by <i>Chlorella vulgaris</i> in stirred tank batch type photobioreactor	Priyanka (M. Tech.)	Dr. Haripada Bhunia Prof. P. K. Bajpai
9	Biodegradability studies of HDPE/PLLA blends under controlled composting environment	Jasmeet Kaur (M. Tech.)	Dr. Haripada Bhunia Prof. P. K. Bajpai
10	Development of HMMM based Adsorbents by Nanocasting for CO ₂ Capture	Harleen Kaur (M. Tech.)	Dr. Haripada Bhunia Prof. P. K. Bajpai
11	Downstreaming bioactive peptides using nano crystalline molecular sieves	Manish Kumar Sharma (M.Sc. Biotechnology)	Dr. S. Barman Dr. Moushumi Ghosh

7. Student Exchange Programme

Mr. Gurankit, a student of Amity University, Noida did his MTech thesis work under the supervision of Dr. Rajeev Mehta.

8. Conferences Attended

Sr. No.	Title of paper	Author(s)	Conference Details	Dates
1.	Evaluation of Biodegradability of High Density Polyethylene and Poly(Lactic Acid) Blends	Gaurav Madhu, Haripada Bhunia, Pramod K. Bajpai	International Conference on Emerging Materials and Applications (ICEMA 2014). IIT Roorkee (Sharanpur Campus), Saharanpur, U.P.	April 5-6, 2014
2.	Kinetics of carbon dioxide sequestration by <i>Chlorella vulgaris</i> in continuous stirred tank batch photobioreactor	Priyanka, Abhishek Sharma, Haripada Bhunia, Pramod K. Bajpai	Innovation and Development in Chemical Technology (IDCT 2014). National Conference in Chemical Technology Department, Guru Gobind Singh IP University, Delhi	28 Feb-01 March 2014
3.	Kinetics of Thiophene Hydrodesulphurization: Estimation of Effectiveness Factor	Nishant Vohra, Abinash Dalei, Gautam Das, Haripada Bhunia, Sudip K Ganguly	Innovation and Development in Chemical Technology (IDCT 2014). National Conference in Chemical Technology Department, Guru Gobind Singh IP University, Delhi	28 Feb-01 March 2014
4.	Biodegradability studies of Polypropylene/Poly lactide blends (Won 1 st Prize)	Kimi Jain, M. S. Reddy, Haripada Bhunia, Pramod K. Bajpai	Innovation and Development in Chemical Technology (IDCT 2014). National Conference in Chemical Technology Department, Guru Gobind Singh IP University, Delhi	28 Feb-01 March 2014
5.	Optimization and Biodegradability Study of Polyethylene/Poly lactide Blends	Jasmeet Kaur, Gaurav Madhu, Haripada Bhunia, Pramod K. Bajpai	Innovation and Development in Chemical Technology (IDCT 2014). National Conference in Chemical Technology Department, Guru Gobind Singh IP University, Delhi	28 Feb-01 March 2014
6.	Activated Carbon Based Adsorption of 3,4-dichlorophenol	Harleen Kaur, Chittrakshi Goel, Haripada Bhunia, Pramod K. Bajpai	Innovation and Development in Chemical Technology (IDCT 2014). National Conference in Chemical Technology Department, Guru Gobind Singh IP University, Delhi	28 Feb-01 March 2014
7.	CO ₂ Sequestration by <i>Chlorella vulgaris</i>	Abhishek Sharma, Priyanka, Kumar Uddipto, Haripada Bhunia, Pramod K. Bajpai	Innovation and Development in Chemical Technology (IDCT 2014). National Conference in Chemical Technology Department, Guru Gobind Singh IP University, Delhi	28 Feb-01 March 2014

9. Training Programs Attended

Dr. Dipaloy Datta attended an Induction Training Programme at NITTTR, Chandigarh, during January 20-24, 2014.

10. Contributed Chapters

R. Mehta, P. Singla, V. Kumar and S. N. Upadhyay, "Synthesis of poly(lactic acid): a review", **Book Chapter** in Encyclopedia of Biomedical Polymers and Polymeric Biomaterials, to be published by Taylor and Francis (2014).

P. Singla, R. Mehta and S. N. Upadhyay, "Polylactic Acid (PLA): Microwave Assisted Synthesis", **Book Chapter** in Encyclopedia of Biomedical Polymers and Polymeric Biomaterials, to be published by Taylor and Francis (2014).

11. Any Other information

Patent filed: Reddy A. S., Sengupta S, Dongara R., Das A. K., Amte V., Yadav A., Bajpai P. K. & Bhunia H., *New Provisional Specification in Respect of Invention Stabilized Inorganic Oxide Supports and Adsorbents Derived there from for Carbon Dioxide Capture*, application No. 866/MUM/2014 dated March 14, 2014

Dr. S.K. Singh guided two students (Amanpreet Kaur and Divya Sharma) of Biotechnology as Co-Supervisor.

Dr. S.K. Singh was selected as a Research Paper Reviewer for CMSE-2014 (3rd Global Conference on Materials Science and Engineering), scheduled to be held in Shanghai during Oct. 20th-23rd, 2014.

VKB/GCH/HCHED