

# RISHI GUPTA

Assistant Professor

Department of Biotechnology, Central University of Haryana  
Mahendergarh, -123029, Haryana; E-mail: [rishigupta@cuh.ac.in](mailto:rishigupta@cuh.ac.in)



## EDUCATION

**University of Delhi South Campus, New Delhi, India (2013)**

PhD, Microbiology

Thesis: Bioconversion of plant residues into ethanol

**CCS University (MMPG College), Meerut, India (2006)**

MSc, Biotechnology

Dissertation: Bioconversion of Saccharum spontaneum into ethanol

**CCS University (Meerut College), Meerut, India (2004)**

BSc, Biology

## AREA OF SPECIALIZATION

Lignocellulose Biotechnology, Biomass Bioconversion; Bioethanol Biotechnology

## EXPERIENCE

**Assistant Professor (August 2015-till date)**, Department of Biotechnology, Central University of Haryana, Mahendergarh, Haryana

**Principal Investigator (May 2013-till date)**, Fast Track Young Scientist Project, funded by Department of Science and Technology, New Delhi

**Project:** *Process development for the production of xylitol from plant material*

**Post-Doctoral Research Fellow (2012-2013)** University of Delhi South Campus, New Delhi

**Project:** *Genetic modification of Saccharomyces cerevisiae for efficient fermentation of glucose and xylose sugar to improve bioethanol production*

## GRANTS AND AWARDS

**Post Doctoral - DST Fast Track Young Investigator Award (2013)**

Science and Engineering Research Board, Department of Science and Technology, Government of India

**Pre Doctoral – CSIR Senior Research Fellowship Award (2011)**

Human Resource Development Group, Council of Scientific and Industrial Research, India

**International Travel Grant for paper presentation in 6<sup>th</sup> Annual symposium on environment, Athens, Greece (2011)**

Department of Science and Technology, Government of India, and  
Indian National Science Academy, New Delhi, India

**AMI Young Scientist Award in Environmental Microbiology (2010)**

Association of Microbiologists of India, India

**CSIR-National Eligibility Award (NET) (2014)**

Council of Scientific and Industrial Research, India

## ONGOING PROJECT

S. No.	Title of project	Name of the Implementing Institution	Name of Funding Agency	Scheme	Duration of project
1	Process development for the production of xylitol from plant material	University of Delhi South Campus, New Delhi	Department of Science and Technology	Fast Track Scheme	2013-2016

## RELATED PROFESSIONAL ACTIVITIES

### Professional Associations

Life Member of Association of Microbiologist of India (LM 805-2010), India

Life Member of Biotech Research Society of India (LM 1147), India.

### Reviewer of peer reviewed International Journals

Scientific Reports

Bioresource Technology

Annals of Microbiology

Journal of Biomedicine and Biotechnology

### International educational visits

Prof. Matti T. Karp, Department of Chemistry and Bioengineering, Tampere University of Technology, Finland (2011).

Prof. Annele Hattaka, Lignin Biodegradation Group, Department of Microbiology, University of Helsinki, Finland (2011).

## PATENT FILED

Ramesh C Kuhad & **Rishi Gupta**. A Process for production of fermentable sugars from lignocellulosic substrate. (CBR No. 4201; IN1348DEL2011 dated: 9<sup>th</sup> May, 2011).

## PEER REVIEWED PUBLICATIONS

1. **Gupta, R.**, Mehta, G., Kuhad, R.C. (2015). Scale-up of abatement of fermentation inhibitors from acid hydrolysates for efficient conversion to ethanol as biofuel. *Journal of Chemical Technology and Biotechnology*. <http://dx.doi.org/10.1002/jctb.4775>
2. Sharma, A., Thakur, V.V., Shrivastava, A., Jain, R.K., Mathur, R.M., **Gupta, R.**, Kuhad R.C. (2014). Xylanase and laccase based enzymatic kraft pulp bleaching reduces adsorbable organic halogen (AOX) in bleach effluents: A pilot scale study. *Bioresource Technology*. <http://dx.doi.org/10.1016/j.biortech.2014.06.066>
3. Antil, P., **Gupta, R.**, Kuhad, R.C. (2014) Simultaneous saccharification and fermentation of pretreated sugarcane bagasse to ethanol using new thermotolerant yeast. *Annals of Microbiology*. DOI 10.1007/s13213-014-0875-2
4. Deswal, D., **Gupta, R.**, Nandal, P., Kuhad RC. (2014). Fungal pretreatment improves amenability of lignocellulosic material for its saccharification to sugars. *Carbohydrate Polymers* 99:264-269
5. Kumar S., **Gupta R.**, Kumar G., Sahoo D. and Kuhad R.C. (2013). Bioethanol production from *Gracilaria verrucosa*, a red alga, in a biorefinery approach. *Bioresource Technology*. 135: 150-156.

6. Singh, R., **Gupta, R.**, Adsul M, Kuhad RC, Gokhale D.V., Verma A.J. (2013). Biodegradation of Styrene-Butadiene-Styrene Copolymer via sugars attached to the polymer chain. *Advances in Materials Physics and Chemistry*. 3:112-118
7. Kumar L, Kumar D, Nagar S, **Gupta R**, Garg N, Kuhad RC and Gupta VK (2013). Modulation of xylanase production from alkaliphilic *Bacillus pumilus* VLK-1 through process optimization and temperature shift operation. *3 Biotech*. Doi:10.1007/s13205-013-0160-2
8. **Gupta R.**, Mehta G and Kuhad R.C. (2012). Fermentation of pentose and hexose sugars from corncob, a low cost feedstock into ethanol. *Biomass and Bioenergy*. 47:334-341.
9. **Gupta R**, Kumar S., Gomes J. and Kuhad R.C. (2012). Kinetic study of batch and fed-batch enzymatic saccharification of pretreated substrate and their subsequent fermentation to ethanol. *Biotechnology for Biofuels* 5:16
10. Deswal D., **Gupta R.**, and Kuhad R.C. (2012). Statistical optimization of process parameters for exoglucanase production by brown rot fungus *Fomitopsis* sp. RCK2010. *Applied Biochemistry and Biotechnology*. 168:2004-2016.
11. Kumar A., **Gupta R.**, Khasa Y.P. and Kuhad R.C. (2012). Enhanced xylanase production from *Streptomyces* sp. RCK-2010, an actinomycete, and its application in saccharification of cellulotics. *Journal of Molecular Catalysis B: Enzymatic*. 74:170-177.
12. **Gupta R.**, Khasa Y.P. and Kuhad R.C. (2011). Evaluation of pretreatment methods in improving the enzymatic saccharification of cellulosic materials. *Carbohydrate Polymers*. 84:1103-1109.
13. **Gupta R.**, Mehta G., Khasa Y.P. and Kuhad R.C. (2011). Fungal delignification of lignocellulosic biomass improves the saccharification of cellulotics. *Biodegradation*. 22:797-804.
14. Kuhad R.C., **Gupta R.**, Khasa Y.P. and Singh A. (2010). Bioethanol production from *Lantana camara* (red sage): Pretreatment, saccharification and fermentation *Bioresource Technology* 101: 8348-8354.
15. Kuhad R.C., Mehta G., **Gupta R.** and Sharma K.K. (2010). Fed batch enzymatic saccharification of newspaper cellulotics improves the sugar content in the hydrolysates and eventually the ethanol fermentation by *Saccharomyces cerevisiae*. *Biomass and Bioenergy* 34:1189-1194.
16. Deswal D., Sharma A., **Gupta R.** and Kuhad R.C. (2011). Application of lignocellulolytic enzymes produced under solid state cultivation conditions. *Bioresource Technology*. 115:249-254.
17. **Gupta R.**, Sharma K.K. and Kuhad R.C. (2009). Separate hydrolysis and fermentation (SHF) of *Prosopis juliflora*, a woody substrate, for the production of cellulosic ethanol by *Saccharomyces cerevisiae* and *Pichia stipitis*-NCIM 3498. *Bioresource Technology*. 100(3): 1214-20.

## Review Articles

1. Kuhad R.C., **Gupta R.**, Khasa Y.P. and Singh A. (2011). Bioconversion of pentose sugars to ethanol: Current and Future prospects. *Renewable and Sustainable Energy Reviews*. 15:4950-4962.
2. Kuhad R.C., **Gupta R.**, and Singh A. (2011). Microbial Cellulases and their industrial applications. *Enzyme research*. Doi:10.4061/2011/280696

## Book Chapters

1. **Gupta R**, Mehta G, Deswal D, Sharma S, Jain KK, Devi N, Khasa YP and Kuhad RC. (2013). Cellulases and their biotechnological applications. **In: Biotechnology of Environmental Management and Resource Recovery**. (Editors) Kuhad, R.C. and Singh A. Springer Verlag, Germany. pp 89-106.
2. **Gupta R.**, Bhardwaj K.N., Choudhary C., Chandna P., Jain K.K., Kaur A., Kumar S., Shrivastava B., Ninawe S., Singh A., Kuhad R.C. (2013). Biofuels: the environment friendly energy carriers. **In: Biotechnology of Environmental Management and Resource Recovery**. (Editors) Kuhad, R.C. and Singh A. Springer Verlag, Germany. 125-150.

3. Kuhad R.C., **Gupta R.** and Khasa Y.P. (2010). Bioethanol production from lignocellulosics: an overview. In: **Waste from Wealth** (Editors) Lal, B. and Sharma P.M. TERI Press Delhi. Pp. 53-106.
4. Kapoor, R.K., Chandel, A.K., Kuhar, S., **Gupta, R.** and Kuhad R.C. (2007). Bioethanol from crop residues, production, forecasting and economics: An Indian perspective. In: **Lignocellulose Biotechnology: Future Prospects.** (Editors) Kuhad, R.C., Singh, A. Pp. 247-260.
5. Sharma A., Shrivastava A., Sharma S., **Gupta R.** and Kuhad R.C. (2013). Microbial pectinases and their applications. In: **Biotechnology of Environmental Management and Resource Recovery.** (Editors) Kuhad, R.C. and Singh A. Springer Verlag, Germany. pp 107-124.
6. Kuhad R.C., **Gupta R.** and Khasa Y.P. (2011). Microbial decolorization of colored industrial effluents. In: **Microorganisms in Environmental Management and Biotechnology** (Editors) Dr. B. N. Johri and Dr. T.Satyanarayana. Springer verlag, Germany. Pp. 787-813
7. Shukla P., Nigam V., **Gupta R.,** Kuhad R.C. and Singh A. (2013). Sustainable enzyme technology for environment: biosensors for monitoring of pollutants and toxic compounds. In: **Biotechnology of Environmental Management and Resource Recovery.** (Editors) Kuhad, R.C. and Singh A. Springer Verlag, Germany. pp 69-76.
8. Kuhad, R.C. and **Gupta, R.** (2009). Biological remediation of Petroleum contaminants. In: **Advances in Applied Bioremediation. Soil Biology Series Vol. 17.** (Editors) Dr. Ajay Singh, Dr. Ramesh C. Kuhad and Dr. O. P. Ward. Springer Verlag, Germany.
9. Kapoor R.K., **Gupta R.** and Singh A. (2013). Patenting trends in bioremediation technologies for oil contaminated sites. In: **Biotechnology of Environmental Management and Resource Recovery.** (Editors) Kuhad, R.C. and Singh A. Springer Verlag, Germany. pp 289-313.

## CONFERENCE PRESENTATIONS

1. **Gupta R** and Kuhad RC (2011). Fungal delignification of lignocellulosic biomass improves the saccharification of cellulose. Paper presentation in 4<sup>th</sup> Interdepartmental Twinning program and minisymposium, Tammella, Tampere, Finland (September, 2011).
2. **Gupta R**, Mehta G and Kuhad RC (2011). Production of ethanol, the second generation biofuel from corncob an agriculture residue. Paper presentation in 6<sup>th</sup> Annual International Symposium on Environment, Athens Institute of Education and Research, Athens, Greece (May, 2011).
3. **Gupta R**, Kumar S, Gomes J and Kuhad RC (2011). Kinetic analysis of batch and fed-batch enzymatic saccharification pretreated substrate and their subsequent fermentation to ethanol. Poster presentation in 52<sup>nd</sup> Annual Conference of Association of Microbiologists of India, Punjab University, Chandigarh, India.
4. **Gupta R**, Mehta G and Kuhad RC (2010). Scale up of enzymatic saccharification of delignified cellulose. Poster presentation in 51<sup>st</sup> Annual Conference of Association of Microbiologists of India, BIT Mesra, Ranchi, India.
5. **Gupta R**, Mehta G and Kuhad RC (2009). Fungal delignification of lignocellulosic biomass improves the saccharification of cellulose. Poster presentation in 50<sup>th</sup> Annual Conference of Association of Microbiologists of India, NCL, Pune, India
6. **Gupta R**, Mehta G and Kuhad RC (2009). Production of cellulosic ethanol from sugarcane bagasse. Poster presentation in an International conference on Climate Change and Sustainable Management of Natural Resources ITM Universe, Gwalior, India.

**Dr. Rishi Gupta**