

**ACHIEVEMENTS OF
DEPT. OF BIOTECHNOLOGY ENGINEERING
(2017-18)**

Funded Projects:

1. **Mr. Vinayak B. Shet and Dr. C. Vaman Rao**
Production of Bioethanol from coffee pulp with mucilage. **Rs. 1,50,000**, Funded by **New Age Incubation Network (NAIN), ICT Society, Dept. of IT, BT and S&T, Government of Karnataka.**
2. **Mr. Vinayak B. Shet and Dr. C. Vaman Rao**
Manufacturing eco friendly adhesives from jackfruit seed **Rs. 1,75,000**, Funded by **New Age Incubation Network (NAIN), ICT Society, Dept. of IT, BT and S&T, Government of Karnataka.**

KSCST funded student's projects

1. Development of rapid detection kit for environmental pollutants using biosynthesized nanoparticles. Under the guidance of **Ms. Sneha Nayak and Dr. C. Vaman Rao. Rs. 6000/-**
2. Process development for the production of bioethanol from coffee berry pulp in lab scale and bioreactor. Under the guidance of **Mr. Vinayaka B. Shet and Dr. C. Vaman Rao. Rs. 10,000/-**
3. Glycerol as a feedstock for microbial lipid production. Under the guidance of **Ms. Harshitha J and Dr. C. Vaman Rao. Rs. 10,000/-**

Grants Received

1. **Dr. C. Vaman Rao** received a grant from AICTE for Modernization and Removal of obsolescence Scheme (MODROBS) of Down Stream Processing Lab: **Rs. 14,92,000/** (Rs. 12,28,706/- for non recurring and Rs. 2,63,294 for recurring).
2. **Dr. C. Vaman Rao** received a grant from BIRAC-DBT (Biotechnology Industry Research Association Council of Dept. of Biotechnology, Ministry of Science and Technology): **Rs. 49, 89000/-**.

Staff Achievements

1. A paper titled "**Potential bio-conversion of waste paper into value added products: an Economical, Ecofriendly and Bio-refinery approach**" was presented by Dr. Anilkumar H. S, Associate Professor, at **National Conference on Science and Technology "Recent Advances in Physical, Chemical, Mathematical and Biological Sciences for Energy, Health and Environment"** (NCST-RU-2017) organized by **The Indian Science Congress Association-Bengaluru Chapter** in association with **Mangalore University, Faculty of Science and Technology** on 8 -9th Sept 2017.

2. A paper on “**Antibiotic functionalized nanostructures as potent drug delivery agents against multi drug resistant bacteria**” was presented by Dr. Vidya S. M, Professor, at **National Conference on Science and Technology “Recent Advances in Physical, Chemical, Mathematical and Biological Sciences for Energy, Health and Environment” (NCST-RU-2017)** organized by **The Indian Science Congress Association-Bengaluru Chapter** in association with **Mangalore University, Faculty of Science and Technology** on 8 -9th Sept 2017.
3. **Dr. Shyama Prasad Sajankila**, Associate Professor, Department of Biotechnology Engg., was invited to judge "Oral Presentation" on 23rd February 2018; in Two day National Conference on “Recent Trends in Biotechnology - 2018” organized by the Department of Chemistry and Biotechnology, Karnatak Science College, Dharwad.

Staff Invited for lectures:

1. A lecture on “**Microbes in solid waste and its novel application**” was delivered by Dr. Chetan D. M, Assoc. Professor at National Conference on “**Recent Trends in Biotechnology-2018 (RTBT-2018)**” organized by Dept. of Chemistry & Biotechnology, Karnatak University, Dharwad on 23rd Feb- 24th 2018.
2. A lecture on “**Nanotechnology in Health** ” was delivered by Dr. Shyam Prasad Sanjankila, Assoc. Professor at National Conference on “**Recent Trends in Biotechnology-2018 (RTBT-2018)**” organized by Dept. of Chemistry & Biotechnology, Karnatak University, Dharwad on 23rd Feb- 24th 2018.
3. A lecture on “Current Trends in Drug Design and Discovery” was delivered by Dr. Bharath B. R., Asst. Professor at National Conference on “**Recent Trends in Biotechnology-2018 (RTBT-2018)**” organized by Dept. of Chemistry & Biotechnology, Karnatak University, Dharwad on 23rd Feb- 24th 2018.

Ph. D students invited lecture

A lecture on “**Application of bioprocess engineering and environment biotechnology principles in bio-energy**” was delivered by Mr. Santhosh Poojary, Scientific Assistant, BRIDC, at National Conference on “**Future Prospects of Biotechnology in Indian Scenario**” organized by Adhiyaman College of Engineering, Hosur on 28th Feb- 1st March 2018.

UG Students Achievements

1. A paper titled “**Ecofriendly Synthesis of Silver Nanoparticles Using Oil Seed Cake and its Application in Biodiesel for Performance Evaluation of 4 Stroke Diesel Engine**” was presented by **Nireeksha K , Sanjana S and Shreya S Jathan** (VII Sem) in National Conference on Emerging Trends in Mechanical Engineering held on 4th and 5th August 2017 , **St. Joseph’s Engineering College, Mangalore**. This work was carried out under the guidance of Mrs



- Sneha Nayak** Asst. Professor, Biotechnology Engineering, **Mr Santhosh G** Asst. Professor, Mechanical Engineering and **Dr. C . Vaman. Rao**, Professor & Head Biotechnology Engineering.
2. A paper titled “Process Improvement in Microwave Assisted Acid Digestion of Oil Cake” was presented by **Ms. Ashwini G Shenoy, Ms. Soumya M Rao, Ms. Inchara Crasta and Ms. Udbhavi KB** of 5th semester B.E. Biotechnology at **Symbiot 2017** organized by **Biotechnology Department, MIT, Manipal** in association with **Institution of Engineers Biotechnology Chapter** on 11th & 12th August 2017. This paper was awarded as the **third best paper** in the conference. This presentation was part of their Project based Audit course carried out under the guidance of **Mr. Venkatesh Kamath H. and Dr. C. Vaman Rao**.
 3. A paper titled “Rational antibody Designing for the Clearance of Endotoxin” was presented by **Ms. Angel Mendonca, Ms. Kavitha S G, Ms. Padmini M R and Ms. Varshitha B N** of 5th semester B.E. Biotechnology at **Symbiot 2017** organized by **Biotechnology Department, MIT, Manipal** in association with **Institution of Engineers Biotechnology Chapter** on 11th & 12th August 2017. This presentation was part of their Project based Audit course carried out under the guidance of **Dr. Bharath B. R**
 4. A paper titled “Comparative evaluation of growth and polysaccharide production by *Lactobacillus rhamnosus* and *Lactobacillus acidophilus*” was presented by **Ms. Anushree M, Ms. Anushri U, Ms. Chithralekha and Ms. Manasadeepika** of 5th semester B.E. Biotechnology at **Symbiot 2017** organized by **Biotechnology Department, MIT, Manipal** in association with **Institution of Engineers Biotechnology Chapter** on 11th & 12th August 2017. This presentation was part of their Project based Audit course carried out under the guidance of **Dr. Dr. Vidya S. M**
 5. A paper titled “Chemical and biological synthesis of silver Nanoparticles - A comparative study” was presented by **Mr. Shreyas Rai M, Mr. Prekshananda A A, Ms. Ramya Hande and Mr. Sarvesh C Prabhu** of 5th semester B.E. Biotechnology at **Symbiot 2017** organized by **Biotechnology Department, MIT, Manipal** in association with **Institution of Engineers Biotechnology Chapter** on 11th & 12th August 2017. This presentation was part of their Project based Audit course carried out under the guidance of **Ms. Sneha Nayak and Dr. C. Vaman Rao**.
 6. A paper titled “Production of lactic acid from biodiesel industry residues using *Lactobacillus rhamnosus*” was presented by **Ms. Alva Melita A, Ms. Amrutha K, Ms. Ananya, Ms. Jenishia Menezes and Mr. Nakhul Pai** of 5th semester B.E. Biotechnology at **Symbiot 2017** organized by **Biotechnology Department, MIT, Manipal** in association with **Institution of Engineers Biotechnology Chapter** on 11th & 12th August 2017. This presentation was part of their Project based Audit course carried out under the guidance of **Mr. Venkatesh Kamath and Dr. C. Vaman Rao**.
 7. A paper titled “Co-utilization of Pongamia seed cake hydrolysate and glycerol for bio-oil production” was presented by **Devika Bhat, Dikshita Adyanthaya, Roopakshi and Saniha Khathija** of 5th semester B.E. Biotechnology at **Symbiot 2017** organized by **Biotechnology Department, MIT, Manipal** in



- association with **Institution of Engineers Biotechnology Chapter** on 11th & 12th August 2017. This presentation was part of their Project based Audit course carried out under the guidance of **Ms. Harshitha J** and **Dr. C. Vaman Rao**.
8. A paper titled “Statistical Modeling of Microwave Assisted Acid Digestion” was presented by **Ms. Ashwini G Shenoy, Ms. Soumya M Rao**, and co-authored by **Ms. Inchara Crasta and Ms. Udbhavi KB** of 5th semester **B.E. Biotechnology** at National Level Conference RACEE 2017 organized by Chemical Engg Department, SSN College of Engineering, Chennai on 18th August 2017. This paper was **awarded as the Best paper** in the conference. This presentation was part of their Project based Audit course carried out under the guidance of **Mr. Venkatesh Kamath H.** and **Dr. C. Vaman Rao**.
 9. A poster on “Production of lactic acid from biodiesel industry residues using *Lactobacillus rhamnosus*” was presented by **Ms. Alva Melita A, Ms. Amrutha K, Ms. Ananya, Ms. Jenishia Menezes** and **Mr. Nakhul Pai** of 5th semester **B.E. Biotechnology** at National Conference on Science and Technology “Recent Advances in Physical, Chemical, Mathematical and Biological Sciences for Energy, Health and Environment” (NCST-RU-2017) organized by **The Indian Science Congress Association-Bengaluru Chapter** in association with **Mangalore University, Faculty of Science and Technology** on 8 -9th Sept 2017. This presentation was part of their Project based Audit course carried out under the guidance of **Mr. Venkatesh Kamath** and **Dr. C. Vaman Rao**.
 10. A poster titled “Co-utilization of Pongamia seed cake hydrolysate and glycerol for bio-oil production” was presented by **Devika Bhat, Dikshita Adyanthaya, Roopakshi and Saniha Khathija** of 5th semester **B.E. Biotechnology** at National Conference on Science and Technology “Recent Advances in Physical, Chemical, Mathematical and Biological Sciences for Energy, Health and Environment” (NCST-RU-2017) organized by **The Indian Science Congress Association-Bengaluru Chapter** in association with **Mangalore University, Faculty of Science and Technology** on 8 -9th Sept 2017. This presentation was part of their Project based Audit course carried out under the guidance of **Ms. Harshitha J** and **Dr. C. Vaman Rao**.
 11. A poster titled “Chemical and biological synthesis of silver Nanoparticles - A comparative study” was presented by **Mr. Shreyas Rai M, Mr. Prekshananda A A, Ms. Ramya Hande** and **Mr. Sarvesh C Prabhu** of 5th semester **B.E. Biotechnology** at National Conference on Science and Technology “Recent Advances in Physical, Chemical, Mathematical and Biological Sciences for Energy, Health and Environment” (NCST-RU-2017) organized by **The Indian Science Congress Association-Bengaluru Chapter** in association with **Mangalore University, Faculty of Science and Technology** on 8 -9th Sept 2017. This presentation was part of their Project based Audit course carried out under the guidance of **Ms. Sneha Nayak** and **Dr. C. Vaman Rao**.
 12. A poster on “Bioethanol Production by Co-fermentation of Non-edible oil cake and Glycerol using *Rhizobium leguminosarum* and *Saccharomyces cerevisiae*” was presented by **Ms. Chandrika Tantri**, M. Tech part I student at National Conference on Science and Technology “Recent Advances in

- Physical, Chemical, Mathematical and Biological Sciences for Energy, Health and Environment” (NCST-RU-2017)** organized by **The Indian Science Congress Association-Bengaluru Chapter** in association with **Mangalore University, Faculty of Science and Technology** on 8 -9th Sept 2017. This presentation was part of the final year project carried out under the guidance of **Mr. Venkatesh Kamath and Dr. C. Vaman Rao.**
13. A poster titled **“TRAF6 Inhibition for LPS neutralization”** was presented by **Ms. Angel Mendonca, Ms. Kavitha S G, Ms. Padmini M R and Ms. Varshitha B N** of 6th semester B.E. Biotechnology at **Accelerating Biology – 2018 symposium, organized by C-DAC (IISER), Pune on 9th – 11th Jan 2018.** This presentation was part of their Project based Audit course carried out under the guidance of Dr. Bharath B. R
 14. **Nireeksha K , Subrath, S, Sanjana S and Shreya S Jathhan** of VIII Semester presented a paper on **“Ecofriendly synthesis of nanoparticles for application in Biodiesel”** at **PSG-Nanochallenge, a National Level competition in Nanotechnology application organized by PSG Institute of Advanced studies, Nanotech Research, Innovation and Incubation Center, Coimbatore on 10th and 11th Jan 2018.** This work was carried out under the guidance of **Mrs Sneha Nayak** Asst. Professor, Biotechnology Engineering, **Mr Santhosh G** Asst. Professor, Mechanical Engineering and **Dr. C . Vaman. Rao,** Professor & Head Biotechnology Engineering.
 15. **Aishwarya. J., Jyoti D., Shwetha** of VIII Semester presented a poster on **“Production,Extraction and Analysis of Levan by Bacteria Isolated from Solid Waste”** at National Conference on **“Recent Trends in Biotechnology-2018 (RTBT-2018)”** organized by Dept. of Chemistry & Biotechnology, Karnatak University, Dharwad on 23rd Feb- 24th 2018. The project is guided by Dr. Chetan D. M, Assoc. Prof.
 16. **Deena, T., Deeksha A., Nidhi** of VIII Semester presented a poster on **“Bioremediation of Arsenic using ethnomedicinal endophytic bacteria”** at National Conference on **“Recent Trends in Biotechnology-2018 (RTBT-2018)”** organized by Dept. of Chemistry & Biotechnology, Karnatak University, Dharwad on 23rd Feb- 24th 2018. The project is guided by Dr. Ujwal p, Professor.

Papers published by students

1. Bhavana, P., Priyanka, H., Anusha, K. G., Chaithra, G. R., **Sneha Nayak, Rao C. V.** Biosynthesis of Copper Nanoparticles from Areca Nut Extract and its Antibacterial And Antioxidant Properties. *Agriculture and Natural Resources* (in Press) 2018.

Paper published by faculty

1. Rajesh K., Bharath, B. R., Ishwar Bhat, **Rao, C. V.** Neutralization of Naja naja venom induced lethality, edema and myonecrosis by ethanolic root extract of *Coix lacryma-jobi*. *Toxicology Reports*, 4: 637 – 645, 2017.
2. **Vinayak B. Shet,** Vishwas Shetty, Asha Siddik, Rakshith K. G., Nisha Shetty, Louella Goveas, Grynal D’Mello, **C. Vaman Rao, Ujwal, P.,** Aparna A.

- Optimization of microwave assisted H₂SO₄ hydrolysis of Cocoa pod shells: Comparison between response surface methodology and artificial neural network and production of bioethanol thereof. *J. Microbiol. Biotechnol and Food Science*. 7: 473 – 477, 2018.
3. **Sneha Nayak, Vinayak B. Shet, C. Vaman Rao**, Keshav Joshi. Performance evaluation and emission characteristics of a 4 stroke diesel engine using green synthesized silver nanoparticles blended biodiesel. *Materials Today: Proceedings*. 5: 7889 – 7897, 2018.
 4. **Vinayak B. Shet.**, Varun C., Aishwarya, Anusha M. Palan, Shama U. Rao and **C. Vaman Rao** Optimization of reducing sugars production from an agro residue coconut leaflets through Autoclave assisted HCl hydrolysis using Response Surface Methodology. *Agriculture and Natural Resources* (in Press) 2018.
 5. **Vinayak B. Shet.**, Varun C., Aishwarya, Anusha M. Palan, Shama U. Rao and **C. Vaman Rao**. Acid hydrolysis optimization of Cocoa pod shell by response surface methodology an approach towards ethanol production. *Agriculture and Natural Resources* (in Press) 2018.
 6. **Sneha Nayak, Vinayak B. Shet, C. Vaman Rao**. A green synthesis of gold nanoparticles from banana pith extract and its evaluation of antibacterial activity and catalytic reduction of malachite green dye. *J. of Microbiol. Biotechnol. and Food Science*. (in Press) 2018.
 7. Santhosh Poojary, C. Vaman Rao, Sandesh K., Vinayaka B. Shet. Process optimization of pilot scale biodiesel production from Pongamia and waste cooking oil feedstock. *J. Of Eng. Sci. Technol* (in Press), 2018.

Lectures arranged:

Dr. Gnanesh Nanjappa, DST Ramanujan Fellow, Molecular Biology Laboratory, Central Sericulture Research and Training Institute, Mysore delivered a lecture on “Omics: Recent Trends and Applications” on 26th March 2018 at 2.00PM in Shambhavi Auditorium. This lecture has been sponsored by **IEE-Student Chapter** and **ISTE-Student Chapter of NMAMIT**.