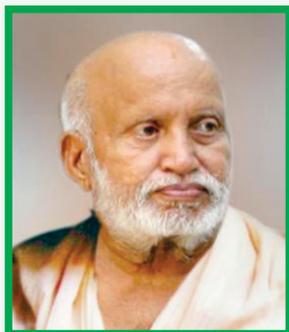


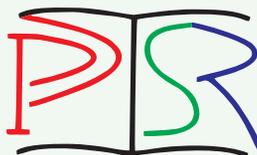
# POORNAPRAJNA INSTITUTE OF SCIENTIFIC RESEARCH

(Recognised by Department of Scientific & Industrial Research (DSIR) and Manipal University)

PROMOTED AND MANAGED BY ADMAR MUTT EDUCATION FOUNDATION



(1928 - 2009)  
Paramapoojya  
Sri Vibudhesha Theertha Swamiji  
Founder



विद्यया विन्दते अमृतं

## VISION

To promote and nurture excellence in the  
fundamental and applied sciences for the  
advancement of scientific knowledge and  
the benefit of mankind



Paramapoojya  
Sri Vishwapriya Theertha Swamiji  
Chairman

## NEWS LETTER

Volume VIII

July - December, 2014

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### In the news

- ❁ PPIISR celebrated its Founder's Day on July 03, 2014 and Prof. P Rama Rao, a renowned scientist, Chairman, Governing Council, ARCI, Hyderabad and the first Director of PPIISR was the guest of honor, while Prof. V S Ramamurthy, Director NIAS, Bengaluru presided over the valedictory function.
- ❁ Paramapoojya Sri Vishwapriya Teertha Swamiji laid the foundation stone for the new hostel building at the Bidalur Campus on July 03, 2014, on the auspicious occasion of Founder's Day Celebrations.
- ❁ Nine doctoral students presented their pre-thesis colloquium and two of them submitted their thesis to Manipal University. These two make the first PhD theses coming out of PPIISR representing an important milestone.
- ❁ Dr. Ganapati Shanbhag has been awarded a three year project titled "Chemical fixation of CO<sub>2</sub> by converting into value added chemicals using metal - modified ordered nanoporous silicate catalysts" towards creation of Centre of Excellence in Science Engineering and Medicine (CESEM) programme by Vision Group on Science & Technology (VGST), Govt of Karnataka.
- ❁ Dr. Nalini has been awarded a three year project titled "Design of Lanthanum based Perovskite Nanoparticles for The Development of Thick Film Gas Sensor" by DST, India.
- ❁ Dr. Srikanth has been selected by the Editor of the journal "Quantum Information Processing" (QIP) as one of the Top Reviewers for 2014

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## From the Director's Desk



The second half of 2014 started with the Founder's day celebrations from July 1-3, 2014 as a mark of tribute to our Founder Chairman Paramapoojya Sri Sri Vibudhesha Theertha Swamiji by arranging a series of scientific lectures by our doctoral students and also eminent scientists from various renowned Institutes. We have been able to consolidate many of our academic activities in terms of submission of Ph.D. thesis by many of our research scholars who got registered with Manipal University.

PPISR has successfully completed two industry sponsored projects namely M/s GTC US LLC and also HPCL R&D. The most significant achievement of PPISR is the development of catalyst and process on Toluene Alkylolation has been licensed by M/S. GTC US LLC to new China refinery. The entire credit goes to faculty members, students and project engineers of catalysis group by taking up this challenging task and executing it successfully. Based on the above achievement, PPISR has signed an agreement with GTC US LLC for a new collaborative project on "Natural gas conversion to value-added chemicals."

During this period, our faculty members have been awarded a grant under Centre of Excellence in Science, Engineering and Medicine (CESEM) by Vision Group on Science & Technology, Government of Karnataka. The Department of Science & Technology has also technically approved for extramural research funding for a period of three years.

In the last six months our Institute has published more than 15 research papers in national and international reputed journals. Based on our ongoing research projects, many of our students and faculty members have presented research papers at various National and International Conferences and have won best presentation awards. Several distinguished Professors and scientists from both India and abroad visited our Institute and have given lectures.

The infrastructure is being constantly upgraded to meet the academic requirement for carrying out scientific activities and this year Paramapoojya Sri Vishwpriya Theertha Swamiji had laid foundation stone for the construction of a new Hostel Building at the Bidalur campus on the occasion of Founder's Day Celebration.

On the whole the second half of 2014 was more productive and successful. I would like to express my heartfelt thanks to Admar Mutt Education Foundation Management and also to my colleagues for their excellent cooperation in bringing this eighth volume of News Letter

**Dr. A.B.Halgeri**  
Director

## Editorial

2014 was a very special year for PPISR. In particular, in this second issue of the year, I get the opportunity to present news on pre-thesis colloquia of the first nine doctoral students of PPISR. Also, in the last six months, two students submitted their thesis to Manipal University and seven of them to follow soon. Moreover, with around twenty publications/patents, these six months clearly represent the end of our toddler days and point towards the expected future growth and new horizons. Indeed, I am proud to be part of PPISR and have great pleasure in editing this issue of newsletter.



Starting with the Founder's Day celebration on 3<sup>rd</sup> July 2014, in remembrance of our beloved founder Paramapoojya Sri Sri Vibudhesha Teertha Swamiji, this newsletter gives the gist of our scientific achievements and many other activities that are relevant to any research institute with a healthy growth. It also features, events related to industry-academia collaboration sponsored by industries as well as by new grants oriented towards basic questions in science. Visits by eminent scientists from academia and from industry to PPISR as well as participation of our scientists in scientific meetings is also covered. Overall, on the scientific front, this newsletter highlights the fact that the science done here is a unique and healthy combination of both applied and basic science. Also covered are celebratory events at PPISR where events such as planting trees on Independence Day, Ayudha puja etc., were organized by students and faculty of PPISR. We are also happy to inform you that a revitalized website ([www.ppISR.in](http://www.ppISR.in)) for PPISR has been launched recently which covers most of the activities of PPISR.

As you glance through this newsletter, we believe you will realize that PPISR is on the right path in realizing Paramapoojya Sri Sri Vibudhesha Teertha Swamiji's dream of creating a vibrant and flourishing institutional environment for scientists and research students. Hope you enjoy reading this newsletter.

**Dr. Udupi A. Ramagopal**

## PPISR Founder's Day Celebration 2014



PPISR celebrates its founder's day during the first week of July every year, with scientific sessions followed by valedictory function. A valedictory function in recognition of Founder's Day Celebration was organized at Bidaluru Campus on July 03, 2014. **Prof. P Rama Rao**, a renowned scientist, Chairman, Governing Council, International Advanced Research Centre for Powder Metallurgy and New Materials,

Hyderabad and the first Director of PPISR was the guest of honour, while **Prof. V S Ramamurthy**, Director NIAS, Bengaluru presided over the valedictory function. Paramapoojya Sri Vishwapriya Teertha Swamiji, chairman, AMEF and PPISR graced the occasion. A welcome address and brief note on AMEC and AMEF was delivered by the Hon. Secretary Dr. K Srihari followed by lighting of lamp by the dignitaries. Dr. Anand B Halgeri gave a brief introduction on the research activities at the institution. "AMEF gave best research scholar award to Mr. Omkar, Mr. Suhas and Ms. Pavithra and also appreciation certificate to Mr. Manjunathan and Mr. Satish Burla for successfully completing GTC Project."

During his Address, Prof Rama Rao spoke about his cordial relationship with the founder Paramapoojya Sri Vibudhesha Teertha Swamiji and his interactions with him. Prof. Rao has also served PPISR as the first Director in 2003.



During the function, the students those who were recognised for their meritorious works, were honoured by Prof. Rama Rao and Paramapoojya Sri Swamiji blessed them with awards.



Prof. S Asokan, Department of Instrumentation and applied physics and chairman Rober Bosch Centre for Cyber Physical System, IISc, Bengaluru, inaugurated the scientific sessions on 2<sup>nd</sup>-July-2014. and Dr. AB Halgeri, Director PPISR gave a welcome address. Prof. Anantharaj, Vision Group on Science and Technology, Govt. of Karnataka, chaired the first scientific

session. This years talks were different in that all the students who are in the verge of finishing their PhD gave talks related to their thesis work. Scientific sessions were chaired by eminent scientists Prof. N. Nagaraj, HOD, Saint Joseph's College, Bangalore; Dr. Manjunath, Senior Scientific Officer, NIMHANS, Bengaluru and Prof. Shiv Sethi, Raman Research Institute, Bengaluru respectively for Materials, Biological and Theoretical Sciences.

## Ph.D. Thesis submission



Mr. Srinidhi joined PPISR in Dr. Nalini's group in June 2010 as a research scholar. He submitted his Ph.D thesis on 19<sup>th</sup> November 2014. The title of his thesis is "Carbonaceous, Nanostructured Metal Oxides Obtained From Metalorganic Precursors through Inert-Ambient, Sealed-Tube Pyrolysis". Presently he is working as a Research Associate at CeNSE, IISc with Prof. Navakanth Bhat.

Mr. Suhas submitted his Ph.D thesis titled "Polymeric Composite Membranes for Pervaporation Separation of Alcohol-Water Binary Mixtures" on 30th December 2014. He joined Dr. A.V. Raghu's Lab in June 2010 as a research scholar and he holds a Senior Research Fellowship from CSIR, India.



## A breakthrough for PPISR-GTC collaborative project: GTC licenses TolAlk technology to a China refinery

### “GTC licenses novel toluene alkylation technology at new China refinery”

It is a very happy moment for PPISR as GTC announced a toluene alkylation technology worldwide.



*A plaque was handed over by Dr. ZhongYi of GTC to Catalysis group during his visit in June 2012 for the successful completion of 2011-2012 project.*

This catalyst and its development work for toluene alkylation from lab to pilot scale was conducted at PPISR since 2011 in collaboration GTC, USA. The vast experience of Director, Dr. A. B. Halgeri on the catalyst development and process commercialization and also past collaboration with GTC has made them to approach PPISR for a collaborative project.

Being an academic institute full of PhD students and various academic programs, working on a time bound industrial project focused on certain goals is a challenge by itself. Also, competing with proven technologies and making the process commercially viable was an uphill task. The credit at large goes to Dr. Ganapati Shanbhag, Dr. Sanjeev Maradur and their team of project students and project engineers for taking up this challenge, for constantly pursuing the work and making it a success. The regular support by the team of GTC, USA on both scientific and technical aspects is highly acknowledged. Also, continuous support by AMEF management to the Catalysis Group to achieve its goal is worth mentioning.



*The successful completion of 2012-2013 project was acknowledged by GTC by giving away a plaque in appreciation of the work carried out by Catalysis group.*

## Successful completion of HPCL sponsored project



The two-year collaborative project with R & D Centre, Hindustan Petroleum Corporation Ltd, Bangalore was successfully completed with the filing of two Indian and world patents (PCT) and communication of 2 joint publications to internationally reputed journals. Final technical project review meeting of HPCL project was held at HPCL R & D Centre, Bangalore on 18-11-2014 to review the progress made during concluded quarter and overall progress in two years from 2012 to 2014.

From HPCL R & D, Dr. N V Choudhary, General Manager, Dr. P.V.C. Rao, Dy General Manager, Dr. Ravishankar, Senior Manager ((Principal Investigator of the project for HPCL) participated in the meeting. Dr. A.B. Halgeri, Dr. G. V. Shanbhag (Principal Investigator for PPISR) and Dr. Sanjeev Maradur were present for PPISR. HPCL team appreciated the overall progress made during the span of two years.

## Agreement signed for a new project with GTC, USA

An Industrial project sponsored by GTC Technology USA is going on in Materials Science Division since three years on the development of catalyst and process for aromatics technology. This successful collaboration with US company has brought a lot of credibility to PPISR. It is expected to get more such collaborative projects with Indian and Multinational companies in future.

**Dr. Ding ZhongYi**, Technology Process Manager, GTC USA visited PPISR on 2-11-2014 to review the completed project and to discuss the start of the new project for 2014-2015. There were discussions on the technical requirement and literature on the new project related to the catalyst and process development for the aromatics technology with the routes other than alkylation.



Synthesis of aromatic compounds from cheaper feed stocks obtained from refineries is an important area of research and the scientists are continuously working on developing new alternative and cost effective technologies involving mainly novel catalyst design and process development to achieve this goal.



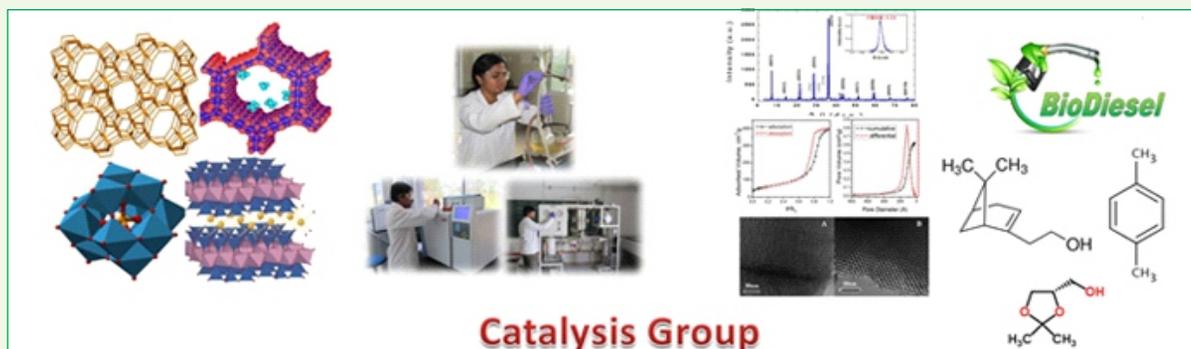
Dr. Halgeri, Director, PPISR signed an agreement with GTC for this new collaborative project. Dr. GanapatiShanbhag is the Principal Investigator and Dr. SanjeevMaradur is the co-investigator of the project. Dr. ZhongYi expressed happiness over the progress of the concluded project in which PPISR successfully developed a 2<sup>nd</sup> generation catalyst for aromatics conversion.

## Research Progress

### Theoretical Sciences Division

Dr. Sujit, in collaboration with researchers at the National Center for Theoretical Science, in Taiwan, has studied aspects of topological phase transition and topological insulators. Together with his PhD students Mr. Chandan and Mr. Nepal, has begun investigation of Quantum simulation of Dirac fermion mode, Majorana fermion mode and Majorana-Weyl fermion mode in cavity QED lattice. Mr Omkar, who has worked on his thesis problem with Dr. R. Srikanth, has submitted his thesis work to Manipal University, completed works related to characterizing noise using quantum error correcting techniques. Ms. Akshata Shenoy of ECE Dept, IISc, whose PhD work was co-guided by Dr. R. Srikanth, successfully defended her thesis work on Jan 7, 2015, her research being on the topic of quantum nonlocality, counterfactuality and quantum cryptography. New ideas exploring the use of graph states for nonlocal subspaces, and counterfactually generated cat states, are almost completed. With student Mr. Aravinda, Dr. R. Srikanth has completed a work on the nonclassical properties of signaling correlations. Dr. R. Srikanth has been exploring applications of quantum cognition origin, that might have implications for decision making and management. The basic concept here is that there are cognitive effects like mental conflict, ambiguity and uncertainty are mathematically better captured by quantum features like quantum superposition, Heisenberg uncertainty or contextuality, rather than elements of classical probability theory.

## Highlights of Research Progress

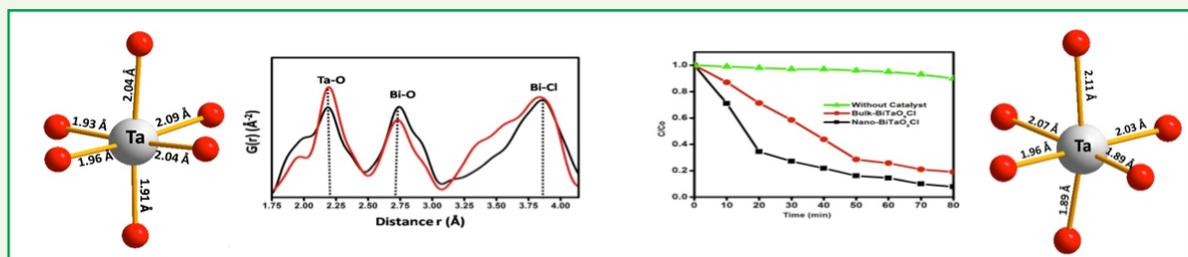


**Catalysis Group**

### Catalysis group

Catalysis is one of the frontier areas of research in science involving interdisciplinary subjects. Catalyst is a heart of a chemical reaction and many important sectors like petroleum refining and petrochemical, fine chemical, fertilizer and energy have been greatly benefited by catalysis research. Catalysis group at PPISR is actively doing advanced research in different areas such as novel catalyst design, alternative fuels, fine and specialty chemical synthesis. Dr. Ganapati Shanbhag and Dr. Sanjeev Maradur are steering the group with 5 research scholars, 4 project assistants and one M. Tech Project student from Chemical Engineering Dept, Manipal University. Overall, 3 sponsored research projects are underway; two industry and one govt sponsored projects. Recently, the project proposal of Dr. Shanbhag titled "Chemical fixation of CO<sub>2</sub> by converting into value added chemicals using metal-modified ordered nanoporous silicate catalysts" has been approved for Centre of Excellence in Science Engineering and Medicine (CESEM) programme by Vision Group on Science & Technology (VGST), Govt of Karnataka. The industry project sponsored by GTC Technology Inc, USA has been successfully completed its 3<sup>rd</sup> year and the technology developed by PPISR in association with GTC has been announced worldwide by GTC in major petrochemical magazines. Second industry project sponsored by HPCL R & D Centre of two years duration was completed successfully in November 2014. The excellence of work in this project was reflected in terms of two PCT patents filed by HPCL and two research publications communicated to international journals of repute.

The group is also working on frontier areas of research of academic importance such as synthesis of mesoporous materials, green catalytic processes for alkylation of aromatics, gas to liquid (GTL), light naphtha aromatization, biomass conversion etc. The group has got expertise in pore engineering of microporous materials; design of new acidic, basic and bifunctional materials for eco-friendly organic transformations; biodiesel synthesis from non-edible vegetable oils; bioglycerol transformation into solketal, glycerol carbonate, acrolein, tert-butyl ethers and acetins.

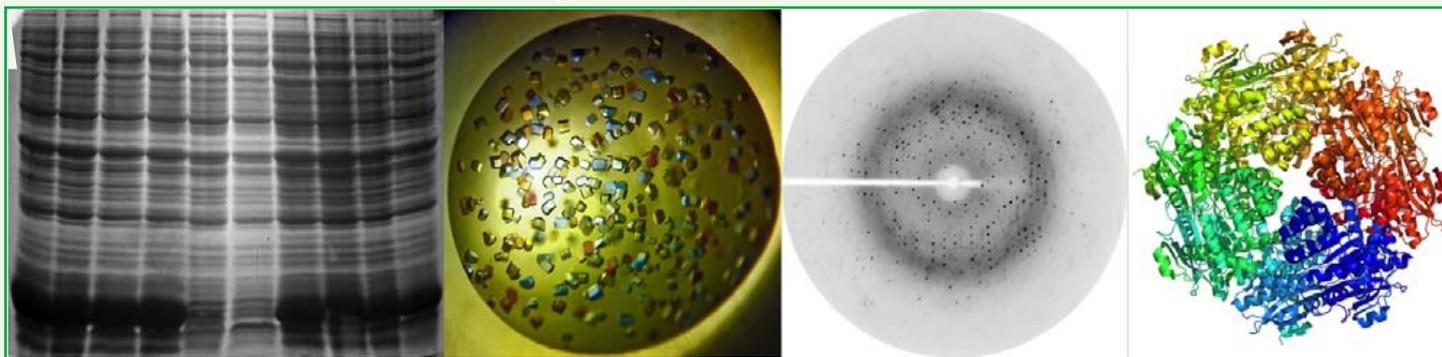


### Functional Energy Nanomaterials Group

Two students from this group have given their Ph.D thesis colloquium and one of them has submitted his thesis. One publication on Photoluminescent materials emitting in the violet-blue region has been accepted. One manuscript on Local-Structure property correlation of bismuth based photocatalysts" is under preparation. One student has registered for his doctoral degree on the "Bandgap engineering on photocatalytic rare earth doped complex oxides". The collaborative work with Centre for Nanoscience and Engineering on Lanthanum based gas sensors has been initiated as part of the INUP user program with IISc. The materials have shown promising sensing behavior at low temperatures with gases such as SO<sub>2</sub>, Methane etc. A new JRF student has joined the group under the AMEF fellowship and will be working on sensors and battery materials for her Ph.D. Many proposals have been submitted to Synchrotron beamlines for obtaining data from advanced sources for detailed structure property correlation.

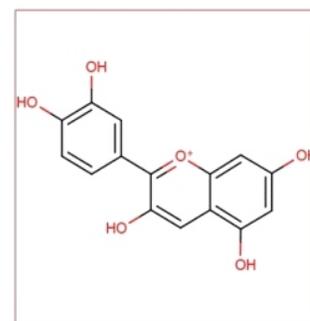
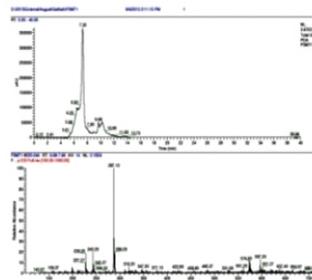
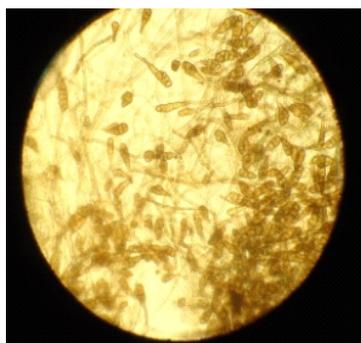
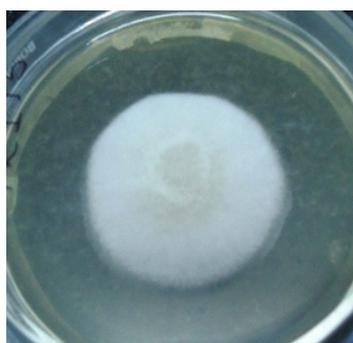
# Highlights of Research Progress

## Biological Sciences Division



### Structural Biology group

In the last six months, our group has solved new structures of Adenine phosphoribosyltransferase (APRT) from *Francisella tularensis* in its apo form and in complex with adenine. Enzymes, Hypoxanthine-guanine phosphoribosyltransferases (HXGPRT) from *Francisella tularensis* and *Helicobacter pylori* as well as Inosine monophosphate (IMP) synthase from MTB, crucial for the survival of these pathogenic microbes were cloned into pNIC28-Bsa4 vector using ligation independent cloning and shown to overexpress well in BL21-RIL cells. As a part of our studies on co-stimulatory molecules, we were able to express/refold several modified versions of B7-2, a co-stimulatory molecule present on the antigen presenting cells and its cognate receptor "Cytotoxic T-lymphocyte Associated protein-4 (CTLA-4)". Both these molecules play a critical role in the immunological synapse. Similarly, we were also able to express another key protein called T-cell immunoglobulin and ITIM domain (TIGIT) which is implicated in the regulation of autoimmunity and cancer. A manuscript titled "The treasure your data may have: Phasing with unexpected weak anomalous scatterers from routine data sets" will be submitted soon. Several new instruments were acquired from infrastructure grant awarded to Biological Sciences Division by Vision Group On Science and Technology, Government of Karnataka.



### Microbiology group

Discovery of novel compounds from endophytic fungi for the treatment of diabetes, cancer and compounds with antioxidant properties are under process. Research work of two scholars in the lab, on endophytic fungi generated very valuable data which could lead to many more opportunities for further explorations. Compounds responsible for the bioactivity were purified and identified using advanced techniques. There are a few compounds of which some are showing in-vitro activity very similar and some show better activity as compared to the drugs available in the market. Two students have prepared their doctoral thesis and presented pre-thesis colloquium. Both the theses will be submitted in the month of Jan 2015 to Manipal University. The microbiology group is also studying the effect of radiation on fungi producing ligninase enzymes. Initial studies have shown some promising results which has applications in the field of bioremediation.

## Recent Publications and Patents (June-Dec 2014)

### PUBLICATIONS

- 1 Characterization of quantum dynamics using quantum error correction. S. Omkar, R. Srikanth and Subhashish Banerjee. **Phys. Rev. A**, 91, 012324 (2015)
- 2 Quantum Criticality of Geometric Phase in Coupled Optical Cavity Under Linear Quenching, (2014), Sarkar S, **Physica B**, 447, 42 (2014).
- 3 Quantum phase transition of light in coupled optical cavity arrays: A renormalization group study, Sarkar S, ADV. THEOR. MATH. **PHYS. Volume 8**, Number 3, 737–756, 2014.
- 4 Counterfactual quantum certificate authorization. Akshata Shenoy H., R. Srikanth, T. Srinivas. **Phys. Rev. A** 89, 052307 (2014).
- 5 Quantum Correlations of Two Superconducting Charge Qubits in a Magnetic Field, Sarkar S, **Journal of the Physical Society of Japan** 83, 104003 (2014).
- 6 The Essence of nonclassicality— more effect than cause. S. Aravinda and R. Srikanth (submitted to Proceedings of **International Quantum Structures Association** 2014).
- 7 “Metal ion-exchanged zeolites as solid acid catalysts for the green synthesis of nopol from Prins reaction” V. S. Marakatti, A.B. Halgeri and G. V. Shanbhag, **Catalysis Science and Technology**. 2014, DOI: 10.1039/C4CY00596A.
- 8 Phosphate modified ZSM-5 for the shape-selective synthesis of para-diethylbenzene: Role of crystal size and acidity, Janardhan L. Hodala, Anand B. Halgeri, Ganapati V. Shanbhag\*, **Applied Catalysis A: General**, Volume 484, 2014, 8-16
- 9 “Room temperature synthesis of solketal from acetalization of glycerol with acetone: Effect of crystallite size and the role of acidity of beta zeolite” P. Manjunathan, S. P. Maradur, A. B. Halgeri and G. V. Shanbhag, **J. Mal. Catal. A: Chem.** DOI: 10.1016/j.molcata.2014.09.028
- 10 Swetha S M Bhat, Ashfia Huq, Diptikant Swain, Chandrabhas Narayana and Nalini G Sundaram “Photoluminescence Tuning of Na<sub>1-x</sub>K<sub>x</sub>NdW<sub>2</sub>O<sub>8</sub> (0.0d” x d”0.7) Nanoparticles; Synthesis, Crystal Structure and Raman Study” just accepted in Physical Chemistry Chemical Physics, **RSC publications**.
- 11 “Graphene loaded Sodium alginate Nanocomposite Membranes with Enhanced Isopropanol dehydration performance via Pervaporation” D.P. Suhas, H.M. Jeong, T.M. Aminabhavi, A.V. Raghu,\* “**RSC Advances**” online DOI: 10.1039/C3RA42062K.
- 12 Targeting Mycobacterium tuberculosis nucleoid-associated protein HU with structure-based inhibitors,” Bhowmick T, Ghosh S, Dixit K, Ganesan V, Ramagopal UA, Dey D. Sarma SP, Ramakumar S and Nagaraja V. **Nature Communications**, (2014)5:4124.
- 13 L. Sathish, N. Pavithra and K. Ananda (2014). Evaluation of antimicrobial activity of secondary metabolites and enzyme production from endophytic fungi isolated from Eucalyptus citriodora. **Journal of Pharmacy Research**, 8(3),269-276.
- 14 Garudachari B, Isloor AM, Satyanaraya MN, Ananda K, Fun H-K. (2014) Synthesis, characterization and antimicrobial studies of some new trifluoromethyl quinoline-3-carbohydrazide and 1,3,4-oxadiazoles. **RSC Advances**. 2014;4(58):30864-30875.
- 15 Pavithra N., Sathish L., Suneel Kumar A., Venkatarathanamma, V., Pushpalatha H., Bhanuprakash Reddy, G., Ananda K. (2014): In-vitro Studies on  $\pm$ -Amylase,  $\pm$ -Glucosidase and Aldose Reductase Inhibitors found in Endophytic Fungi Isolated from Ocimum sanctum, **Current Enzyme Inhibition**, 10(2)129-136.
- 16 N. Pavithra, L. Sathish, Nagasai, Babu, V. Venkatarathanamma, H. Pushpalatha, G. Bhanuprakash Reddy, K. Ananda (2014) Evaluation of  $\pm$ -Amylase,  $\pm$ -Glucosidase and Aldose Reductase inhibitors in ethyl acetate extracts of endophytic fungi isolated from anti-diabetic medicinal plants. **Int J Pharm Sci Res**, 5 (12) 5334-5341.

## Highlights of Research Activities

- 1 Dr Halgeri delivered a lecture on the topic entitled "Eco-friendly Catalysts and Process for Sustainable Chemistry" at Basaveshwar Science College, Bagalkot on September 13, 2014.
- 2 Dr. Halgeri presented a talk on the topic entitled "Role of Research Institute for Technology Development in Oil and Gas" at Durgapur IDFRD meeting in November 2014.
- 3 Dr. Halgeri gave a lecture on "Future Energy Challenges through Biofuel and Biorefinery Technologies" at Govt Science and Arts College in November 2014.
- 4 Dr. Halgeri delivered a lecture on the topic entitled "Development of Novel Catalysts of Industrial Importance at PPISR" at SABIC on December 19, 2014.
- 5 Dr. Halgeri gave a talk on the topic "Novel Catalytic Materials and its Applications to Chemical Manufacturing Processes" at MSRIT College in December 2014.
- 6 Nine students from PPISR presented their pre-thesis colloquium in the last six months, and two of them submitted their thesis to Manipal University.
- 7 Dr.Nalini's research proposal titled "Design of Lanthanum based Perovskite Nanoparticles for The Development of Thick Film Gas Sensor" to the DST committee for extramural funding at IIT Kanpur on September 18th 2014. This proposal is sanctioned for funding (40 Lakhs) for three years.
- 8 Ms. Swehta Lankinpalli got the best participant award at the workshop on Cell Culture and Molecular Techniques in Animal Biotechnology held at Bharathidasan University from 5-11 Nov 2014.
- 9 Mr. Pradeep Shanbogh won the second prize for the poster titled"- Sunlight driven Photocatalytic Degradation of Congo-Red by RE substituted Bi<sub>2</sub>WO<sub>6</sub>" at the Two Day workshop on "Crystallography in The Sciences" organized by Bangalore University in lieu of the International Year of Crystallography 2014, on October 16th and 17th 2014.
- 10 Ms. Akshata Shenoy of ECE Dept, IISc, whose PhD work was co-guided by Dr. R. Srikanth, successfully defended her thesis work on Jan 7, 2015, her research being on the topic of quantum nonlocality, counterfactuality and quantum cryptography.
- 11 Dr. Udupi Ramagopal delivered an invited talk "X-ray Vision: Snapshots of Biological Machines at Atomic Resolution" as part of the 'Program in Biology for students' under the auspices of the Science Outreach Programs held at the Jawaharlal Nehru Centre for Advanced Scientific Research on 16 Dec 2014.
- 12 Dr. Sujit made academic visits elsewhere in the country (HRI, Allahabad during June 2014) and abroad, at the National Center for Theoretical Science, in Taiwan (September 2014).
- 13 Dr.Ananda K, was one of the member of the Life Science Judging panel for "The Amateur Scientist 2014" held at PES University on August 23rd, 2015 and judged 35 science projects Presented by the 8-12th Class students from all over India.
- 14 Mr. Chandan's thesis synopsis has been approved by the doctoral advisory committee, and will be shortly registered at Manipal University. He is being joined by Mr. Nepal Bannerjee as a student working for PhD with Dr. Sujit Sarkar.
- 15 Dr. Sowmya Palimar attended the Indian Nano Users Program (INUP) hands-on training Workshop conducted at CeNSE IISc from 18th -28th August 2014.
- 16 Project titled "Design of Lanthanum based Perovskite Nanoparticles for The Development of Thick Film Gas Sensor" has been selected for execution in CeNSE, IISc under Indian Nano Users program (INUP).
- 17 Mr. Pradeep presented a poster titled "Sunlight Driven Photocatalytic Degradation of Congo-Red by RE substituted Bi<sub>2</sub>WO<sub>6</sub> nanoparticles" at Advanced Oxidation Process conference held at Munnar, organized by M.G University, Kottayam, in August 2014.
- 18 M.Tech Student, Ms. Uma from Dayanand Sagar Engineering college is working on "Rare earth based Bismuth oxides for Photocatalytic degradation of dyes" in our group with Ph.D student Mr. Pradeep.P.Shanbogh as part of her M.Tech project for 8 months.
- 19 Mr. Manish Kumar, M.Tech Student, Chemical Engineering Department, Manipal University, Manipal is working on "*Mesoporous polymers as catalyst for etherification of glycerol with t-butyl alcohol to t-butyl ethers of glycerol, a potential fuel additive*" for his M.Tech project for 10 months under the guidance of Dr. Sanjeev P. Maradur
- 20 Mrs. Pavithra G C and Ms. Swetha Lankipalli participated in the National Seminar cum Workshop on Cell Culture and Molecular Techniques in Animal Biotechnology held at Bharathidasan University from 5-11 Nov 2014.
- 21 Dr.Ananda K., delivered a talk on "Blood and Blood substitutes" to the students of Poornaprajna Pre University College Udupi and delivered another talk on "The Blood, can we synthesize artificially?" to the High School students of Poornaprajna Education Centre, Yelahanka, Bangalore.
- 22 Dr. Ananda K was a Chief guest and inaugurated the "Exhibition - EDU-VISION" held at Poornaprajna Education Centre (Primary section), Yelahanka, Bangalore on November 21st, 2014.

## Independence day celebration at Bidalur campus

Independence Day for the fourth year in row was celebrated on August 15, 2014 at the Bidalur Campus. The Director hoisted the National Flag and delivered a speech to the gathering of students, faculty and staff members. Sri. P Sreenivasa Rao, Financial Advisor of PPISR was also present during occasion and addressed the gathering and advised about internal discipline of each departments and its role in building up the institution. All faculty members, their families and other members were present during the small get-together celebration.

For last three years PPISR had the tradition of planting trees on the occasion of Independence day, which was continued this year too. One hundred saplings were planted by the members of the institution successfully adding more greenery to the existing green campus.



## Foundation stone for new hostel

As is evident from the contents of this newsletter, scientific activities at PPISR has shown an upward trend. We are accepting more students for Ph.D programme in all the three divisions. Considering the future growth of PPISR, the management has decided to construct a new hostel building to accommodate forthcoming students on the campus. In this regard, the Chairman of the institution Paramapoojya Sri Vishwapriya Teertha Swamiji laid the foundation stone for the new hostel building at the Bidalur Campus on July 03, 2014, on the auspicious occasion of Founder's Day Celebrations. The construction activities for the hostel building are going on in full swing.



## Saraswathi/Ayudha Pooja At Bidalur Campus

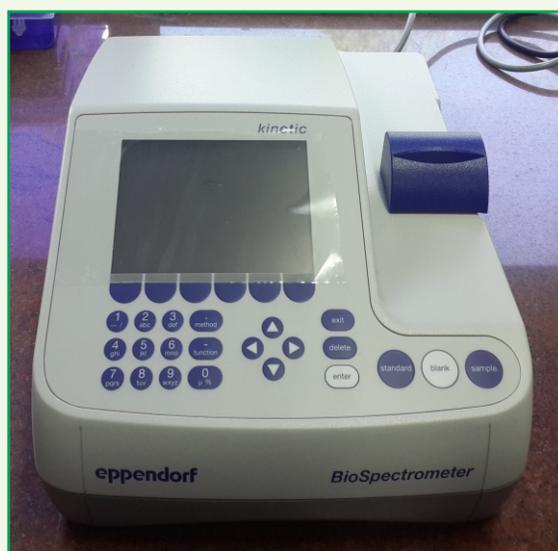


Ayudha pooja and Saraswathi pooja were performed at the Campus on October 1, 2014. The Director, all the staff, faculty, students and other PPISR members participated enthusiastically and paid respect to the Goddess of knowledge.

## New Instruments



Sonicator from Ultrasonics Solutions



Eppendorf Biospectrometer

## Invited Lectures by Scientists

Prof. D.S Viswanath, Emeritus Professor of Chemical Engineering Department, University of Missouri, USA, delivered a lecture on "Random Thoughts" on 24<sup>th</sup> July 2014.

Dr. Chaitanya Hiremath, Founder President & CEO, APODvision, Inc. USA delivered a lecture titled "1. Abbreviated Profile of Drugs (APOD): A Novel Integrated Approach for Drug Discovery and 2. The World Flag" on 7<sup>th</sup> August 2014.

Ms.Manju Sivasankaran, Principal Investigator, Women Young scientist scheme, IISc gave talk titled "Genome scale network modelling of Fungus" on 9<sup>th</sup> September 2014.

## New Students at PPISR



Ms. Kavitha KN joined as JRF with Dr. Ananda's group in the Biological Sciences under BRNS project. She has completed M.Sc in Biotechnology from Department of Biosciences, Mangalore University. She had prior research experience on endophytic fungi in a project in the Department of Microbiology, University of Mysore.



Archana K M has joined as a JRF with Dr. Nalini in the Materials Science Division, PPISR. She completed M.Sc in Inorganic Chemistry from Central College Bangalore University, Bangalore. Following that she has worked as an Assistant Professor in the department of Engineering Chemistry at C. Byre Gowda Institute of Technology, Kolar.



Mr. Saikiran. M has joined as Project Engineer in industry sponsored Project in Materials Science Division under Dr. G. V. Shanbhag. He has done M.Tech in Chemical Engineering from Siddaganga Institute of Technology, Tumkur.



Mr. Sathyapal Churipard. R, has joined for PhD in Materials Science Division Under Dr. Sanjeev Maradur. He has done M.Sc in Organic Chemistry from Bangalore University 2014.



Mr. Kempanna S. Kanakikodi has joined as Research Fellow in industry sponsored Project in Materials Science Division under Dr. G. V. Shanbhag. He has done M. Sc General Chemistry from Rani Channamma University Belagavi.

## Visitors' views

**Prof. S ASOKAN: Chairman, Robert Bosch Centre for Cyber Physical Systems, IISc, Bengaluru.**

Highly impressed by the quality of research and enormous progress made by the centre in the last four years

**Prof. Dabir S. Vishwanathan: Emeritus Prof. in Chemical Engineering, University of Missouri, California.**

Dr. Halgeri and his colleagues are doing excellent scientific work and I wish them all the success and my pranamas to Swamiji

**Dr. CHAITANYA HIREMATH, Founder President, APO Division, USA, Founder president SEALO Earth, USA.**

It was a pleasure to visit the institute. It is great to see excellent infrastructure which has been put to good use. People are outstanding and producing good publications. Keep up the good work

## Poornaprajna Analytical Center

### Instruments available for external users

- X-Ray Diffractometer (Bruker)
- FTIR Spectrophotometer (Bruker)
- Atomic Absorption Spectrophotometer (Perkin Elmer)
- UV-Vis Spectrophotometer (Perkin Elmer)
- Fluorescence Spectrometer (Agilent)

For more information visit our website [http://www.ppisr.res.in/analytical\\_center.html](http://www.ppisr.res.in/analytical_center.html)

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