A REPORT

ON

DST-SCIENCE & ENGINEERING RESEARCH BOARD (SERB) SPONSORED TWO DAYS NATIONAL SEMINAR ON "IMPACT OF GREEN CHEMISTRY ON BIODIVERSITY AND ENVIRONMENTAL CHALLENGES" (IGCBE- 2019)

HELD ON 20TH & 21ST SEPTEMBER 2019

ORGANIZED BY

DEPARTMENT OF CHEMISTRY

H. K. E. SOCIETY'S

S. S. MARGOL COLLEGE OF ARTS SCIENCE AND COMMERCE SHAHABAD- 585228,

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DR. ANILKUMAR R. KOPPALKAR, PRINCIPAL

Organizing Secretary

Dr. VAIJINATH A. VERMA, HOD, DEPT. OF CHEMISTRY

DST-Science & Engineering Research Board (SERB) Sponsored two days National Seminar on **"IMPACT OF GREEN CHEMISTRY ON BIODIVERSITY AND ENVIRONMENTAL CHALLENGES"** (IGCBE- 2019).The two days National seminar was sanctioned (**SERB File No: SSY/2019/000602, dated: 16 August 2019**) by the DST-Science & Engineering Research Board (SERB) in response to the proposal by **the Department of Chemistry, S. S. Margol College of Arts, Science and Commerce, Shahababr-585228 Dist: Kalaburagi (Gulbarga), Karnataka- India**. The seminar was conducted on **20th& 21st September 2019** at the Seminar hall of the College.

ABOUTTHE COLLEGE

S.S. Margol of College Arts, Science and Commerce, Shahabad was established in 1967 by late Shri. Mahadevappa Rampure. He had fervent desire to bring education to the socially and economically challenged section of the society. The college functions under the aegis of Hyderabad Karnataka Education Society and is affiliated to Gulbarga University. The college offers courses at Under Graduate level, B.A B.Sc and B.Com. The college has been included in the list of colleges under 2 (f) and 12 (B) of the UGC Act 1956. The college is accredited with B grade by the National Assessment and Accreditation Council (NAAC).

ABOUTTHE DEPARTMENT

The Department of Chemistry, one of the premier departments of the college was established in 1967. The department offers B.Sc. Degree program in Chemistry. The department has well experienced faculty and established laboratories.

THEMEOF THE SEMINAR

Green chemistry is a fundamental tool to address biodiversity and environment challenges at molecular level. Green chemistry is a concept which seeks to help chemists to improve the environmental performance and safety of chemical processes and to reduce the risks to man and the environment. Though many exciting green chemical processes are being developed,

there is far greater number of challenges lying ahead. The final and best outcome of improvements and achievement of green chemistry will however depend on research, development innovation and implementation of chemical technologies and sound science that encourage the green movement of greening and cleaning of the environment.

Objectives of IGCBE:

- Improving, understanding and awareness of Green chemistry.
- To create awareness about the new green techniques of synthesis and have environmentally benign chemical reactions.
- Providing appropriate legal and institutional mechanisms.
- Developing environmentally acceptable route to important organic products.
- Use of good fuel and modified green processes will also reduce the addition of heavy toxic metals and other toxic substances to the environment.
- Reduce, reuse and recycling- the principles of green chemistry incorporating the green chemistry in industrial, laboratory and day to day processes in order to control environmental pollution and hence pollution at source.
- Training and educating new generation of chemists,educationists, students and community at larger part.
- Incorporating the green chemistry in industry, laboratory, day to day process in order to control environmental pollution and hence the pollution at source.

INAUGURATION CEREMONY

The inaugural ceremony started at 10.30 am on 20th September 2019 with prayer song by college students Prema, Bhagayashree others. **Dr. P. Wadgaonkar,** Chief Scientist in Polymer Science and Engineering Division, CSIR-National Chemical Laboratory, Pune India. **Dr. A.R. Soundane,** Professor & Chairman, Department of Chemistry, Gulbarga University, Kalaburagi, **Sri Satishchandra C. Hadagalimath,** Governing council member

HKE Society Kalaburagi, **Dr. A. Venkatraman,** Professor, Department of Chemistry, Gulbarga University, Kalaburagi and **Dr. Jally,** Professor, Department of Physics, Gulbarga University, Kalaburagi inaugurated the National Seminar by lighting of the auspicious lamp and released Proceeding/Souvenir of **IGCBE-2019** with **ISBN 978-93-89332-09-4**. Around 163 delegates, 27 paper presenters, resource persons from various universities, aided, unaided colleges, research scholars, U.G. students from various partsof India and Karnataka registered for the seminar.The welcome address was deliveredby **Dr. Anilkumar R. Koppalkar,** Principal of the College.

CHIEF GUEST ADDRESS

The Chief Guest of inaugural ceremony was **Dr. A. R. Soundane,** Professor & Chairman, Department of Chemistry, Gulbarga University, Kalaburagi who facilitated the function and wished the Department of Chemistry to for successful seminar. He said that some of the solutions for environmental problems are limit greed of humans, go green go natural policy, strict afforestation, increase awareness, compulsory plantation of trees, controlled use of natural resources, use of renewable sources over non-renewable sources.

Prayer song by College Students

Welcome address by Dr. Anilkumar R. Koppalkar

Lighting of the auspicious lamp by dignitaries

Release of Proceeding/Souvenir of IGCBE-2019 with ISBN 978-93-89332-09-4

Chief Guest address by Dr. A.R. Soundane

NATIONAL SEMINAR THEME

Seminar theme was highlighted by Organizing Secretary, **Dr. Vaijinath A. Verma,** Head of Department of Chemistry. In his speech he deeply discussed about Biodiversity and environmental challenges, withthe most striking examples, the emission of CFC's causing depletion of the ozone layer and the emission of carbon dioxide, plastics and how to

overcome it throughgreen chemistry. Green chemistry education will be an essential component of the transition required. There is a need for change at all levels of organization from the level of molecules to the level of social issues. At all of the levels concerned, various concepts have been developed. Still, there is a need for a lot more research and education, especially at the higher levels of societal organization.

PRESIDENTIAL ADDRESS

The inaugural session was presided by **Shri. Anilkumar S. Margol,** Governing council member Hyderabad Karnataka Education Society Kalaburagi & Convener, S.S. Margol College, Shahabad. In presidential address, the emphasized the efforts taken by Department of Chemistry to organize such kind of DST- Science and Engineering Research Board (SERB) sponsored National Seminar.

Theme of the National seminar by Dr. Vaijinath A.Verma

KEY NOTE ADDRESS

Dr. P. Wadgaonkar, Chief Scientist in Polymer Science and Engineering Division, CSIR-National Chemical Laboratory, Pune-India. In his speech spoke about Chemical products and effects. We all are personally responsible for releasing carbon dioxide into the atmosphere-

by burning fossil fuels for transportation (driving and flying) and home energy(electricity, heating and cooling). This leads to global warming, which is destroying Earth's biodiversity and native ecosystems.He described the global Warming and its impacts on environment and inclusive growth of the pollutions, environmental disasters. Lastly, he said benefits of Green Chemistry.

Key note address by Dr. P. Wadgaonkar

Delegates in Seminar hall

VOTE OF THANKS

The inaugural ceremony came to closed at 12.00 pmon 20th September 2019. **Dr. Shivalal Hatte,** Head, Department of Commerce gave the vote of thanks for the inaugural ceremony session.

Vote of thanks by Dr. Shivlal Hatte

Technical Session-I

Green energy strategies for sustainable development

On 20th September 2019 first technical session was held at 12.00-1.30 pm **Dr.Ramesh Londonkar**, Professor, Department of Biotechnology, Gulbarga University, Kalaburagi. He stated green energy definition, types green energy. Renewable energy is energy from sources that are naturally replenishing but flow-limited; renewable resources are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time. Finally, gave brief about sustainable energy for all is an idea whose time has come,turning ideas into action depends on us all and there is no time like the present to power a brighter future.This session was chaired by Dr.Yadav D. Bodake, Professor, Department of Chemistry, Kuvempu University, Shimoga.

Technical Session-I [Speaker Dr. Ramesh Londonkar]

Technical Session-II at 2.30-3.30 pm 20th September 2019

CURRENT ENVIRONMENTAL CHALLENGES: THE END OF HUMAN CIVILIZATION DUE TO CLIMATE CHANGE IN 2050? CAUSES, POSSIBLE SOLUTIONS FOR GREENER PLANET

Dr. Rajkumar S. Meti, Professor, Department of Studies and Research in Biochemistry, Mangalore University PG Centre madkeri, Karnataka, India. He started his speech with Earth is currently facing many environmental problems nothing is pure in our surroundings like air we breathe, food we eat, water we drink, cloth we wear etc. Season have changed drastically due to heavy rain there are floods which in turn destroy food crops, extreme hot and cold weathers have become very common and is witnessed in different parts of the globe. Chairperson was **Dr. A.R. Soundane,** Professor & Chairman, Department of Chemistry, Gulbarga University, Kalaburagi.

Technical Session-II[Speaker Dr. Rajkumar S. Meti]

Technical Session-III at 3.45-4.45 pm 20thSeptember 2019

MICROWAVE ASSISTED SYNTHESIS OF OXYGEN HETEROCYCLES BY PALLADIUM CATALYZED CROSS-COUPLING REACTION: A GREEN APPROACH

Dr. Yadav D Bodke, Professor, Dept. of P G Studies and Research in Chemistry Kuvempu University, Jnana sahyadri Shankaraghatta, Shimoga-577 451. In his speech, he said thatGreen chemistry addresses such challenges by inventing novel reactions that can maximize the desired products and minimize by-products, designing new synthetic schemes and apparatus that can simplify operations in chemical productions and seeking greener solvents that are inherently environmentally and ecologically benign. By developing greener methods for the synthesis of drug like molecules which reduce the release of toxins to the environment.Microwave technique helps to speed up the reactions, high efficiency of heating, reduction in side reaction, high purity of the final product, simplicity in operation and environmentally benign. Chairperson was **Dr. Srikanth Lakelliker**, Head, Department of Physics, N.V. Degree College, Kalaburagi.

Technical Session-III[Speaker Dr. Yadav D Bodke]

Technical Session-IV at 10.00-11.00 am 21st September 2019

EVOLUTION OF GREEN SAFE CHEMISTRY FOR MANAGING THE INSECT PESTS AND MITES

Dr. Rachappa V. Haveri, Associate Professor of Agricultural Entomology, Zonal Agricultural Research Station, Kalaburagi-585101.He expressed aboutthe evolution of insecticides will go on and new preparations will continue to appear on the market. It is assumed that in 2050, the use of pesticides will be 2.7 times higher than in 2000, to produce more food (9 billion people).We need to develop better green chemistry rather than others toxic chemicals to environment.In this situation, an agreeable interaction of scientists and the manufacturers of insecticides is essential for the selection of the most optimal ecofriendly solutions for the control of insect pests. Build-up awareness in consumers about pesticide contamination food leading to several disorders viz., Autism, alzimers, teratogenic effect, etc. Agricultural Impacts and the large and complex climate challenge. He proposedthat, very likely many people working from many angles can help address climate change and its ecological consequences.This technical session was chaired by **Dr. AasishR**, Principal, Teganoot, Govt. Degree College Kalaburagi.

Technical Session-IV [Dr. Rachappa V. Haveri]

Technical Session-V at 11.15-12.15 pm 21st September 2019

NANOPHOTOCATALYSIS - OPPORTUNITIES AND CHALLENGES FOR CONVERSION OF INDUSTRIAL BY-PRODUCT AND WASTEWATER INTO HYDROGEN FUEL

Dr. M. V. Shankar, Professor & Chairman Board of Studies Department of Materials Science and Nanotechnology, Yogi Vemana University, Kadapa – 516 005, Andhra Pradesh. He explained that the development of efficient, stable, economically viable and eco-friendly photo catalysts for hydrogen production is a challenging task. This talk will discuss the design, synthesis and development of semiconductor-based nanocomposite photo catalysts for hydrogen production. The major points are the role of catalytic active sites, the chemical nature of sacrificial agents, the effect of light sources, the variable light intensity and the energy efficiency calculation. The benefits and limitations of hydrogen fuel from an environmental viewpoint will be highlighted. The session was chaired by **Dr. M.V.N. Ambika Prasad**, Professor, Department of Physics, Gulbarga University, Kalaburagi.

Technical Session-V [Speaker Dr. M. V. Shanker]

Technical Session-VI at 12.20-1.30 pm 21stSeptember 2019

Low carbon cement at ACC Wadi

The presentation was made by **Sri Jaiprakash Jain,** Deputy General Manager (QC) from ACC (The Associated Cement Companies) Limited, Wadi, Dist: Kalaburagi (Gulbarga). He started with the definition of cement and explained how to manufacture of Green Cement, focused on Energy Efficiency, Water Conservation, Renewable Energy, Waste Management, Material Conservation, Recycling and Recyclability. Also environmental awareness among consumers increase, the demand for products with lower environmental footprint will also increase. Lastly, he said about Greenhouse gases reduction. The session was concluded with some remarks by Shri Chandrakant principal Institute of Pharmacy S.S. Margol College Shahabad chair about presentations.with a formal vote of thanks was given by anchor Dr. Guruling. Assistant Professor, Department of Economics, S.S. Margol College of Arts, Science and Commerce, Shahabad.

Technical Session-VI [Speaker Sri. Jaiprakash Jain]

Technical Session-VII: PAPER PRESENTATION (Oral/ Poster)

The session Seven was paper presentation began at 2.30 pm on 21st September 2019. 20 oral and 8 poster papers were presented by students, research scholars and teaching faculty.This sessionwas Co-chaired by Dr. **Ramesh Londonkar**, Professor Department of Biotechnology, Gulbarga University, Kalaburagiand **Dr. Yadav D Bodke,** Professor, Dept. of P G Studies and Research in Chemistry Kuvempu University, Jnana sahyadri Shankaraghatta, Shimoga.

Technical Session-VII [Oral and Poster paper presentations]

VALEDICTORY FUNCTION

The valedictory session was held at 3.45 pm on 21st September 2019 with the welcome song by Miss Mamata, Lecturer in Hindi of College. **Dr. Anilkumar R. Koppalkar,** Principal of the College welcomed the entire guests and delegates in the National seminar. The delegates from different states and students gave their feedback on the national seminar with highly satisfaction and thanked for providing such a great opportunity, this wasfollowed by distribution of best presentation award certificates.

Dr.Vaijinath A.Verma, Organizing Secretary, IGCBE-2019 reported the two days programmes and expressed thanks to theDST-Science and Engineering ResearchBoardDelhi, organizers, staff and students volunteers and appreciated their efforts in putting the national seminar together.

Two daysreport by Dr.Vaijinath A. Verma, Organizing Secretary, IGCBE-2019

The Chief Guest **Dr. M.V. N. Ambika Prasad**, Professor, Department of Physics, Gulbarga University, Kalaburagi, was felicitated. In his speech he highlighted the innovative topic about Green Chemistry, Biodiversity and environment; also he appreciated the organizing committee for organising the seminar with a grand success. The Guest of honours

were **Dr. A. Venkatramam**, Department of Chemistry, Gulbarga University, Kalaburagi, **Sri Nagaraj S**. Chief Manager, State Bank of India Shahabad, **Shri. Anilkumar S. Margol,** Governing council member Hyderabad Karnataka Education Society Kalaburagi & Convener, S.S. Margol College Shahabad, **Sri Nithin B. Jawli**, Governing council member HyderabadKarnataka Education Society Kalaburagi. The function was presided over by the Dr. **Shivanand S. Devarmani,** Vice President, Hyderabad Karnataka Education Society Kalaburagi.

Presidential remark by Dr.**Shivanand S. Devarmani**

All good things come to an end Miss. Gouri, Lecturer, Department of Physics gave a vote of thanks to the DST-SERB, resource persons, guests and all faculty members and hoped that every delegate was going home with some answers and lots of wonderful memories. The programme ended with the national anthem and certificate distributions.

23/10/19

Dr. Anilkumar R. Koppalkar
Principal

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