

## Department of Chemistry, VSSUT, Burla celebrates Prof. Mahendra Kumar Rout Birth Centenary Year on 11<sup>th</sup> and 12<sup>th</sup> April 2023

The Department of Chemistry, VSSUT, Burla celebrated Prof. Mahendra Kumar Rout Birth Centenary Year on the 11<sup>th</sup> and 12<sup>th</sup> of April 2023 with much grandeur. The Annual Chemistry Department Seminar is held on this occasion along with a National Seminar on 'Recent Advances in Chemical Sciences'. The meeting was well organized by the Faculty Members and Students befitting the image of this institute of national importance. The seminar was inaugurated by Prof. B. D. Majhi, honorable Vice-Chancellor of VSSUT.

At the outset, a write-up on Prof. Mahendra Kumar Rout was circulated among the audience. Prof. Majhi, in his speech, said that there are five generations of students and teachers in the meeting, a reflection of the rich academic and cultural heritage of higher education in the state. He emphasized the importance of keeping up the tradition such that the dedication and passion of teaching and research percolate through generations. Prof. Rout is an embodiment of a complete human being, a great teacher who intensely loved his students, did pioneering research, and worked relentlessly for the institutions he served.

On the occasion of Prof. Mahendra Kumar Rout Birth Centenary Celebration Year, Prof. Gopabandhu Behera, retired Professor of Chemistry, Sambalpur University, Jyoti Vihar, Burla, a very dear student of Prof. Rout, was felicitated with the '**Life-Time Dedication Honour**' in recognition of his dedication and enthusiasm in preserving and protecting the rich heritage of premier institutions of our state, and for always guiding his students to walk on the right path. The felicitation message was read by Prof. Sarat K. Swain and was presented by the honorable VC, Prof. Majhi.

Prof. Behera narrated his deep association with Prof. Rout, and how Prof. Rout worked hard throughout his life and dedicated himself to the well-being of his students. He helped his Ph.D. scholars to complete their theses even when he was in the last days of his life. Prof. Rout did pioneering research in several fields publishing papers in highly respected journals such as Nature and JACS and introduced advanced subjects in the chemistry curriculum, such as quantum mechanics, spectroscopy, and reaction mechanism at the PG level way back in the 1950s.

Prof. Priya Ranjan Mohapatra, Head of the Department of Chemistry, presented a detailed picture of teaching and research programs in the Department. Particularly, the involvement of the M.S. students in research is a step forward and is being aggressively pursued now. As a demonstration of the same, an entire poster session of the seminar was presented by the students.

On the first day, there were several carefully crafted invited lectures in the seminar. The speakers were from different institutes of the state and they presented research in front-line areas. Prof. Sarat K. Swain, Prof. S. Dash, Dr. T. Biswal, Dr. A. K. Panda, Dr. Bigyan Ranjan Jali, and Dr. A. K. Barik, among others, conducted the technical sessions with precision.

# Glimpses of the Celebration



**Orissa Chemical Society Celebrates Prof. Mahendra Kumar Rout Birth Centenary Year From 4th January 2023 to 4th January 2024.**  
**On this occasion, the Department of Chemistry, VSSUT, Burla is organizing a National Seminar on 'Recent Advances in Chemical Sciences' from 11.04.2023 to 12.04.2023 as per the following program.**  
**Your participation in the seminar is solicited.**

## INAUGURAL SESSION

9:00 AM-9.30 AM

Inaugurated by Prof. B. D. Majhi,  
 Hon'ble Vice-Chancellor, VSSUT Burla  
 Chief Guest: Prof. G. B. Behera  
 Retd. Professor, Sambalpur University, Burla

## TECHNICAL SESSION- 01

Chairman: Prof. S. K. Swain, Professor of Chemistry, VSSUT  
 Co-chairman: Dr. T. Biswal, Associate Professor of Chemistry, VSSUT

9:30 AM-10.15 AM	KL-01	Prof. S. Samal	Retd. Principal S. B. Rath Women's College, (Auto) Berhampur
10.15 AM-10.45 PM	IL-01	Dr. B. K. Jena	Chief Scientist IMMT Bhubaneswar

## TEA BREAK 10.45 AM – 11.00 AM

## TECHNICAL SESSION- 02

Chairman: Prof. S. Dash, Professor of Chemistry, VSSUT  
 Co-chairman: Dr. A. K. Panda, Associate Professor of Chemistry, VSSUT

11.00AM-11.30 PM	IL-02	Dr. A. Doddi	Dept. of Chemistry IISER Berhampur
11.30 PM-12:00 PM	IL-03	Dr. G. Sahoo	Dept. of Chemistry NIT Rourkela
12.00 PM-12:30 PM	IL-04	Dr. M. Ramakrishnan	Dept. of Chemistry IISER Berhampur

## LUNCH BREAK (1.00 PM- 2.30 PM)

Coordinator: Dr. Ramkrishna DS,  
 Assistant Professor of Chemistry, VSSUT

POSTER PRESENTATION (2.30 PM-4.30 PM)  
 Coordinators: Prof. P. Mohapatra, Dr. A. K. Barick & Dr. Bigyan Jali  
 PP 01- PP 45  
 [In front of Dept. of Chemistry]

With Regards  
**Prof. P. Mohapatra**  
 HOD, Chemistry



















PROFESSOR MAHENDRA KUMAR ROUT BIRTH CENTENARY CELEBRATION YEAR  
4<sup>TH</sup> JANUARY 2023 – 4<sup>TH</sup> JANUARY 2024, OBSERVED BY THE ORISSA CHEMICAL SOCIETY

DEPARTMENT OF CHEMISTRY  
VEER SURENDRA SAI UNIVERSITY OF SCIENCE AND TECHNOLOGY, BURLA

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### **Prof.(Dr.) Gopabandhu Behera**

Former Professor and Head, Chemistry Department, Sambalpur University, Jyoti Vihar, Burla, Former President of Orissa Chemical Society, distinguished scientist and prolific teacher, academic leader and social activist

### *Life-Time Dedication Honour*

Dear Sir,

On the occasion of Prof. Mahendra Kumar Rout Birth Centenary Celebration Year, in recognition of your long-standing association with Sambalpur University in general and the Department of Chemistry of the University in particular, for your allegiance and enthusiasm in preserving and protecting the rich heritage of premier institutions of our state, and for relentlessly guiding us to walk on the right path, we, the Members of the Staff and Students of the Department of Chemistry, VSSUT, Burla, on behalf of your myriad of students and colleagues across generations, deem it a rare privilege to bestow on you with great humility the 'Life-Time Dedication Honour'. We strive to preserve your ideals and pledge to uphold the history, culture and tradition of our academic institutions, and pledge to dedicate ourselves to teaching and research in Chemistry.

We pray almighty for your long and healthy life.

For Members of Staff and Students  
Department of Chemistry, VSSUT, Burla

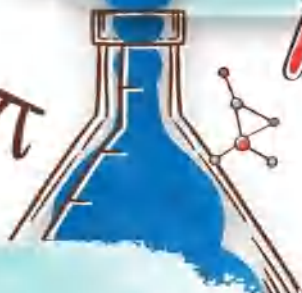
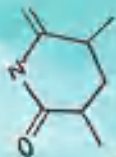


**National Seminar On  
Recent Advances in Chemical Science**

**(RAICS 23)**

11<sup>th</sup> - 12<sup>th</sup> April 2023

$$PV = nRT$$



**Jointly Organised by  
Orissa Chemical Society & Department of Chemistry, VSSUT  
On the eve of the birth Centenary year of  
Prof. Mahendra Kumar Rout**

**RASAYAN 2K23**

**A Nonlinear Approach to Chemical Science Research – with Illustrative Examples****Prof. Shashadhar Samal***Retired Principal*

S.B.R. Govt. Women's College, Berhampur, Odisha

Phone: 09938854038, Email: samal\_s@live.com

**Abstract:**

Research in Science, specifically in Chemical Sciences, is challenging as most approaches are governed by some generally accepted principles and protocols. Each reaction scheme is designed for a specific product based on previous information available in the literature. This linear approach is based on accepting what has been said before about the behavior of a molecule under a set of reaction conditions. While a majority of the reactions happen the way these are thought to be, often the desired product is formed along with a number of by-products and impurities. Some reactions, the way they behave, do not have a satisfactory explanation. If a counter-intrusive explanation is offered, it is ignored or sometimes rejected. While the molecules present in the reaction mixture are manifesting their natural properties, our linear thought accrued through previous information does not give us the freedom to think non-linearly, that there could be something else happening. In Nature, most things happen in a nonlinear fashion, including how a bodily function of the living works. Imposing a linear thought on a nonlinear system simply leads to a conclusion that does not fittingly unravel the truth. In this lecture, an attempt will be made with specific examples of how nonlinear thought gave insight into the discovery of actual reaction paths. The presentation will be devoid of technical details and will be suitable for a graduate-level audience.

**Organic Chemistry: Methodologies to Natural Product Synthesis and Vice Versa****Dr. Gokarneswar Sahoo***Associate Professor*

Organocatalysis and Synthesis Laboratory, Department of Chemistry

National Institute of Technology Rourkela

Sundergarh 769008, Odisha

**Abstract:**

Being in the 21st century, when science and technology have jointly reached a great height hand in hand, some diseases like hypertension, diabetes, depression, cardiovascular events such as stroke, heart attack, heart failure, the very recent COVID-19 etc. remain a big concern for the human being. The search for new drugs, their mimetics are in up rise. The contribution of organic chemistry is enormous in amalgamating/bridging different frontiers towards achieving a healthy world. This presentation would include the effort in this direction by our laboratory. Synthesizing natural products, developing new transformations based on chiral pool approach, Organocatalysis are many ways an organic chemist usually contributes towards a healthy society. This presentation would also highlight the current research activities in developing organocatalytic transformations.

## Filamentous Fungi, Chemistry and Genetics: From Beadle and Tatum to Fungal Secondary Metabolites



**Dr. Mukund Ramakrishnan**

*Assistant Professor*

Department of Biological Sciences

Indian Institutes of Science Education and Research

Berhampur, Odisha

### **Abstract:**

The fact that fungi are perhaps the largest group of organisms in terms of species diversity. Further analysis of this fact warrants investigations on many fronts, one of them being a better understanding of their biology. The dawn of biochemical genetics happened with the experiments of Beadle and Tatum which were performed with a ubiquitous filamentous fungus *Neurospora crassa*. As a model system, *Neurospora* made several important contributions to the fields of circadian rhythms as well as gene regulation through chromatin. My aim in this particular presentation would be to give you a historical perspective of how filamentous fungi as well as yeasts (to a lesser extent) have contributed to our understanding of various facets of science. I will be also touching on some of the exciting work at the interface of epigenetics as well as the manufacture of fungal secondary metabolites. In the final part of my presentation I will be presenting some of the work from my laboratory centering around linking phenomena associated with nutritional sensing and regulating stress responses. We will also be touching on some of the insights gained with regards to another class of mutants, regulating sensitivity to 2 deoxyglucose, a potent anti-metabolite.

## Pyridyl Functionalized Pincer Ligand Systems; Design, Isolation and Catalytic Applications of their Earth Abundant Copper(I) Complexes



**Dr. Adinarayana Doddi**

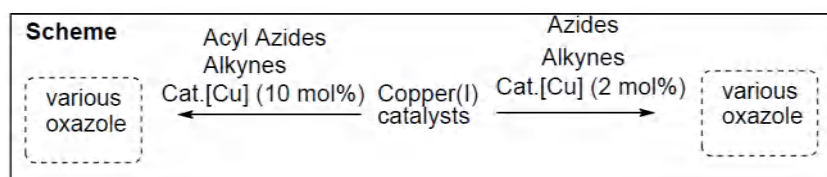
*Assistant Professor*

Department of Chemical Sciences,  
Indian Institute of Science Education and Research  
Berhampur 760010, Odisha

### Abstract:

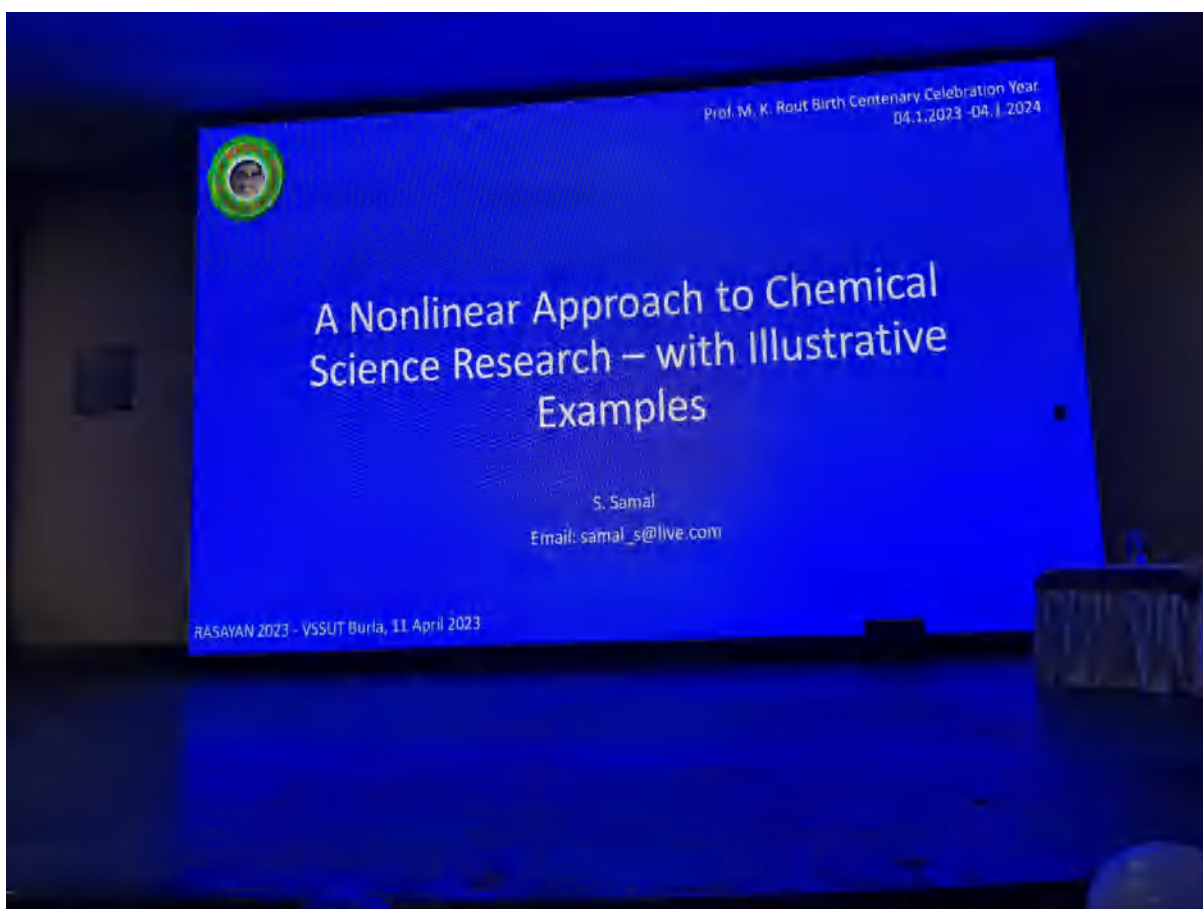
Since the discovery of persistent NHCs by Arduengo, and co-workers in the early 1990s<sup>[1]</sup>, NHC ligands gained enormous attention, and expanded their use in diverse fields. Especially, NHCs occupy unique position as powerful species as stabilizing tools, and also served as excellent ancillary ligands in organometallics and homogeneous catalysis.<sup>[2,3]</sup> NHC adducts of G-16 elements can be linked back to Ansell first observation in 1970, as this group reported the first isolation of 1,3-dimethylimidazolin-2-thione (Ime)S.<sup>[4]</sup> Hybrid ligands, especially consisting of *NNS*-type species bearing NHC moiety as part of the ligand frame-work may serve as novel multidentate ligands. We have recently isolated a series of bipyridyl functionalized imidazolin-2-thiones and selones of the type (NNC)E (E = S (**1**), Se (**2**)), and subsequent reactions with MeX furnished cationic [(NNC)EMe]X (E = S (**3**), Se (**4**); X = I or OTf) derivatives. The coordinating ability of these derivatives **3** and **4** were studied towards coinage metals and isolated a series of cationic copper(I) complexes.<sup>[5]</sup>

Furthermore, our group prepared a series of redox-active NHC ligands and their coinage metal complexes. In addition, (BPPP)E<sub>2</sub> species, silylated electron rich phosphine (hemilabile & hybrid) ligands were first time introduced as ancillary species in the preparation of earth abundant, and cheap metals such as copper(I) chemistry, and the catalytic activity of their metal complexes were studied in the synthesis of simple to complex oxazoles, and various triazole derivatives (Scheme). In order to establish best possible yields, and mild condition, a series of optimization reactions were performed. The transformations, and logical formation of the products were corroborated by mechanistic investigations.<sup>[5, 6]</sup> In this presentation, the details of preparative methods, catalysts designs and their molecular structures will be discussed.



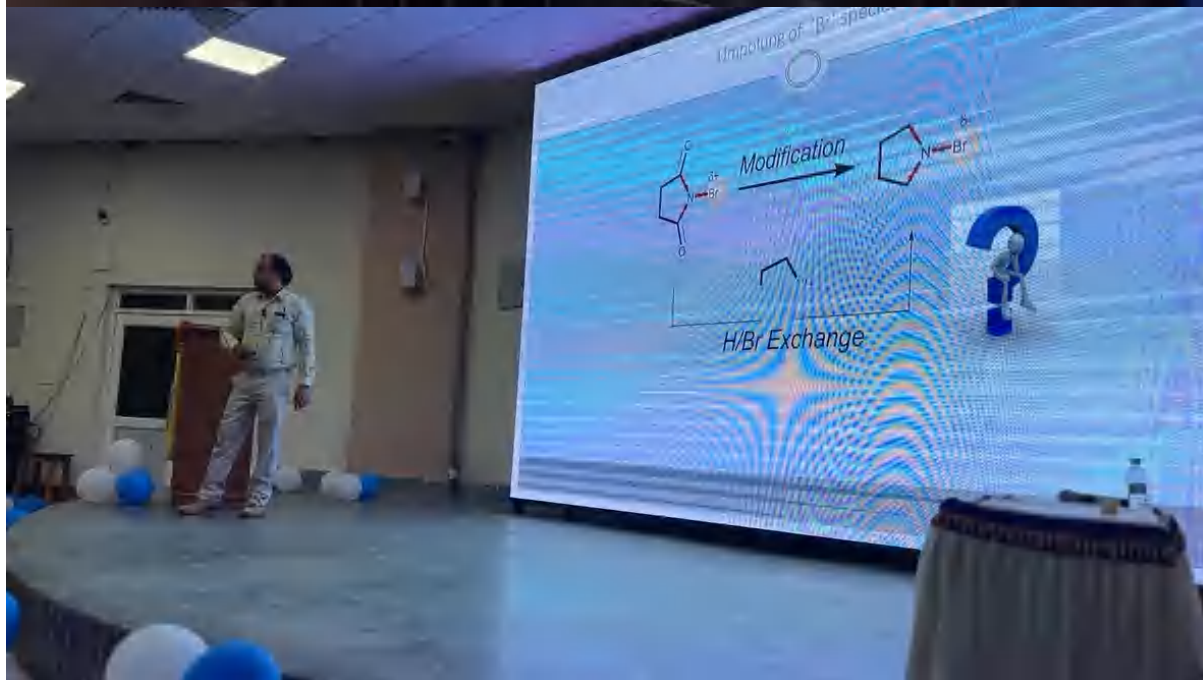
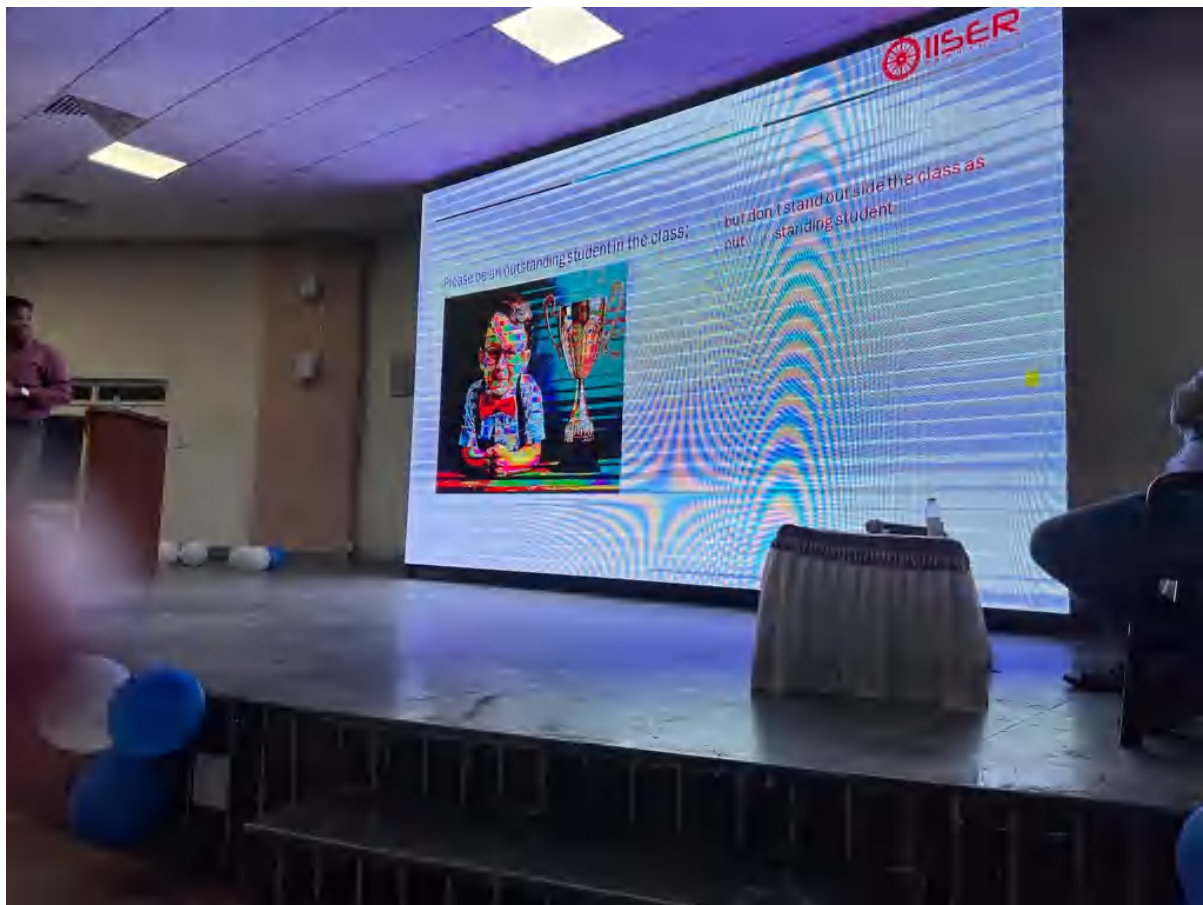








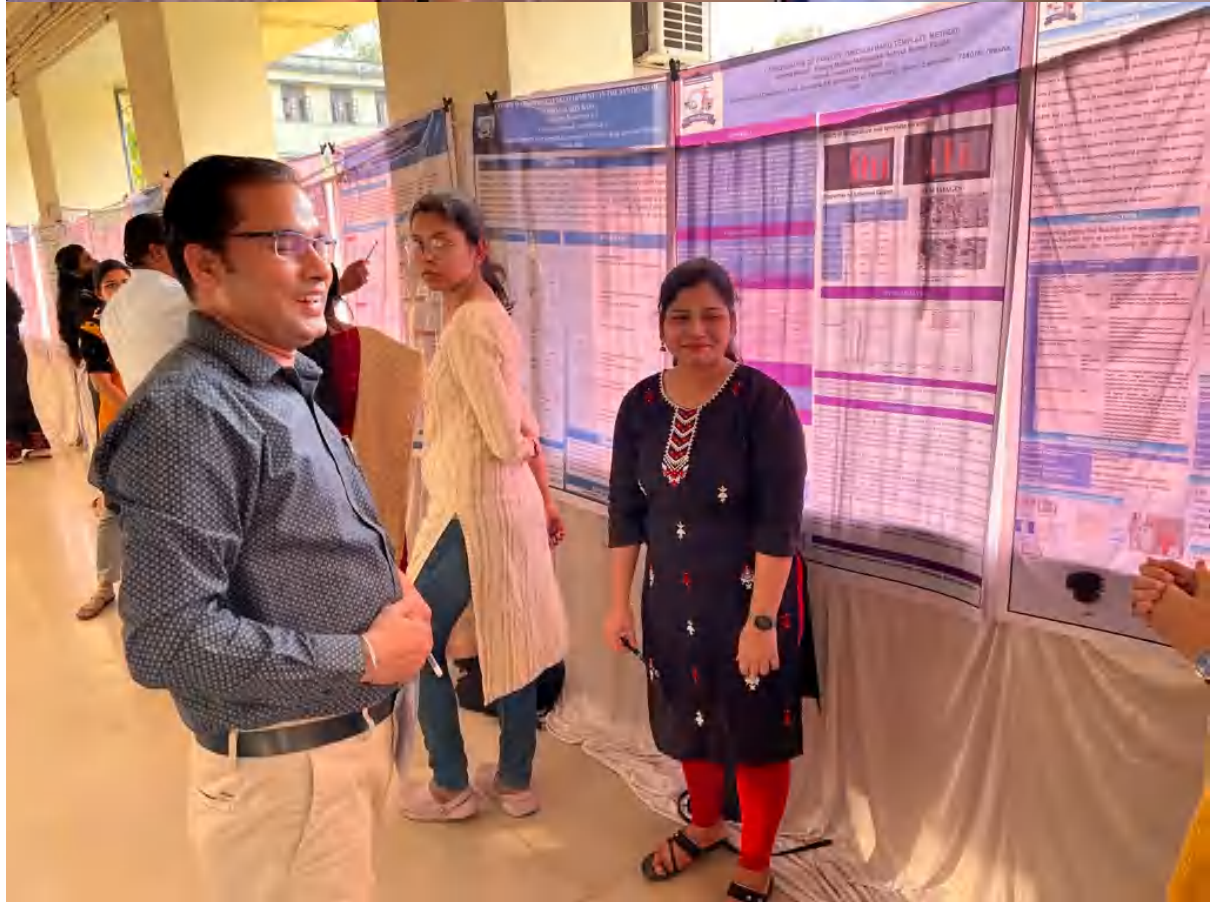
















## MEDIA COVERAGE

# ଭିସୁଏଲ ରସାୟନ ବିଜ୍ଞାନ ବିଭାଗର ବାର୍ଷିକ ଉତ୍ସବ ଉଦ୍‌ଘାଟିତ

ଭୁବନେଶ୍ୱର, ୧୧ ମଇ (ବି.ପ୍ର)- ଭୁବନେଶ୍ୱରର ରସାୟନ ବିଜ୍ଞାନ ବିଭାଗ ଦ୍ୱାରା ଉଦ୍‌ଘାଟିତ ପ୍ରଥମ ଶତାବ୍ଦିକ ଉତ୍ସବ ଉଦ୍‌ଘାଟନ କାର୍ଯ୍ୟକ୍ରମର ଅନ୍ତର୍ଗତ ଭାଗ ଭାବେ ବିଭାଗର ବାର୍ଷିକ ଉତ୍ସବ ଉଦ୍‌ଘାଟନ କାର୍ଯ୍ୟକ୍ରମ ଆୟୋଜନ କରାଯାଇଛି । ଉତ୍ସବର ପ୍ରସଙ୍ଗରେ ବିଭାଗର ପ୍ରଧାନ କର୍ମଚାରୀ ଉପସ୍ଥିତ ରହି ଉତ୍ସବର ଉଦ୍‌ଘାଟନ କରାଯାଇଛି । ଉତ୍ସବର ପ୍ରସଙ୍ଗରେ ବିଭାଗର ପ୍ରଧାନ କର୍ମଚାରୀ ଉପସ୍ଥିତ ରହି ଉତ୍ସବର ଉଦ୍‌ଘାଟନ କରାଯାଇଛି । ଉତ୍ସବର ପ୍ରସଙ୍ଗରେ ବିଭାଗର ପ୍ରଧାନ କର୍ମଚାରୀ ଉପସ୍ଥିତ ରହି ଉତ୍ସବର ଉଦ୍‌ଘାଟନ କରାଯାଇଛି ।



ଉପସଭା ସମାପ୍ତ ହେବାପରେ ପ୍ରଧାନ କର୍ମଚାରୀ ଉପସ୍ଥିତ ରହି ଉତ୍ସବର ଉଦ୍‌ଘାଟନ କରାଯାଇଛି । ଉତ୍ସବର ପ୍ରସଙ୍ଗରେ ବିଭାଗର ପ୍ରଧାନ କର୍ମଚାରୀ ଉପସ୍ଥିତ ରହି ଉତ୍ସବର ଉଦ୍‌ଘାଟନ କରାଯାଇଛି ।

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