



*Dnyanprassarak Mandal's*  
**College and Research Centre**  
**Assagao-Goa**



*“Inspiring, Igniting and Transforming to Excel”*

Affiliated to Goa University and Recognized by UGC  
Accredited by NAAC with 'A' Grade (4<sup>th</sup> Cycle) and a score of 3.15 / 4.00  
ISO 9001 :2015 and ISO 14001: 2015 Certified



**Department of Chemistry (Research Centre)**  
In Association with

**Syngenta Biosciences Private Limited**  
*Organizes*

**One Day National Level Workshop**  
*On*

**“Hands on Training in Sustainable and Continuous Flow Synthesis”**

**23<sup>rd</sup> April 2022**

## Flow Chemistry as Sustainable Technology

With the need for Green Chemistry for better Sustainability, there has been an enormous growth in designing of greener technologies. From microwave to ultrasonication, from photochemical synthesis to electrochemical synthesis, the demands are rising for organic chemists to design better eco-friendly and energy efficient methodologies for safety of human health and environment. Having said that, for more than two decades, there has been a technique which has evolved itself from small assembly of tubing's in a laboratory to highly automated reactor in an industry setup. This technique has been none other than the continuous flow synthesis, which has fittingly replaced the batch synthesis. Flow chemistry involves the use of channels or tubing to conduct a reaction in a continuous stream rather than a reaction flask.



Considered as the most attractive strategy in organic synthesis for its better efficiency and sustainability, continuous flow chemistry has several benefits over the batch process, that include controlled reaction and better reproducibility, can run efficiently at high temperatures, modular set up, reduced use of raw materials, takes care of safety issues as hazardous, toxic substances are taken in small volumes, and rapid analysis possible, better product yields with high degree of purity. All this has made continuous flow synthesis the basis to try all the challenging conventional organic reactions. It finds wide range of applications in pharmaceuticals, fine chemicals, green chemistry, catalysis, polymer synthesis, etc. The dream for an organic chemist is to achieve the synthesis of a product with the desired stereochemistry. Flow chemistry technique with its controlled variables exhibits great deal of stereochemical purity in organic synthesis. Research in continuous flow synthesis has been true to the challenges faced by the organic chemists and will continue to provide sustainable solutions as the most enabling technologies for future.

## Objectives

- To spread the awareness of green chemistry through sustainable technology
- To highlight the emergence of flow chemistry as the most energy efficient and sustainable technique.
- To provide the basic knowledge on flow chemistry setup and it's working.
- To provide hands on training in performing continuous flow synthesis

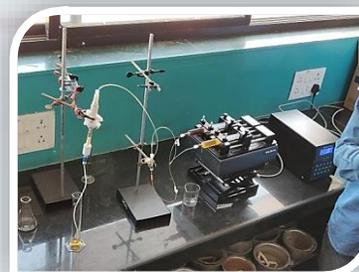
## Topics

- ✓ **Basics of Flow Chemistry Technique**
- ✓ **Demonstrations of continuous flow synthesis**
- ✓ **Biocatalysis in a flow system**
- ✓ **Hands on handling of flow reactor system for organic chemistry applications**

## Learning outcomes

At the end of the workshop, the participants will be able to

- Understand the role of flow chemistry technique for sustainability.
- Understand the concept of continuous flow synthesis
- Use the flow set up to perform various organic reactions.



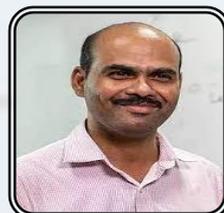
## Resource persons



**Prof. Thomas Wirth, Professor,  
Cardiff University, England**



**Prof. Volker Hessel, Professor,  
University of Adelaide, Australia**



**Dr. Gnanaprakasam Boopathy  
Associate Professor, IISER-Pune  
"Acharya Prafulla Chandra Ray Flow Chemistry Awardee 2021"**



**Ms. Akanksha Pandey  
Ph.D. scholar, IISER-Pune**



**Ms. Nirmal Mohanta  
Ph.D. scholar, IISER-Pune**

## Advisory Board

**Shri. Shrikrishna Pokle  
Chief Patron**

**Prof. Thomas Wirth  
Professor, Cardiff University,  
Cardiff, England**

**Prof. D. B. Arolkar  
Professor and Principal**

**Prof. Peter Seeberger  
Professor, Freie Universitaet,  
Berlin, Germany**

**Dr. Bhanu Manjunath  
Director, Syngenta Biosceinces  
Pvt. Limited**

**Prof. Volker Hessel  
Professor, Adelaide University,  
Adelaide, Australia**

## Organizing Committee

**Prof. Vidya Desai  
Convener**

**Mr. Abhijit Shetgaonkar  
Joint Convener**

### Members

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Dr. Vruta Kadekade  
Mrs. Amrita Natekar  
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Mrs. Pooja Gadekar**

## About college

Dnyanprassarak Mandal's college is a premier Institution of higher education in Goa. It is one of the oldest and prestigious colleges in Goa and right from its inception in 1974, for the last forty eight years it has successively contributed towards the welfare of the society by imparting quality education. Located on the picturesque Assagao hill, with a campus spreading over 30 acres of land, the college offers diverse courses at Undergraduate and Post-Graduate levels in the faculties of Arts, Science, Commerce, Management and Technology. It has to its credit two Research Centres in Commerce and Chemistry which provide facilities to enrol for Ph.D. degree apart from consultancy services. The college is well-known for its commitment towards academic excellence providing holistic education and producing individuals who are socially and morally tuned to nation building. The Alumni of the college are very diverse and are occupying well designated position in various working professions.



## Department of Chemistry

The Department of Chemistry, Dnyanprassarak Mandal's College and Research Centre, Assagao-Goa, was started in 1996. Besides offering B.Sc. (Chemistry) degree under Choice based credit system. It is the first and only college in Goa to start M.Sc. (Pharmaceutical Chemistry) in the year 2009. The college also offers M.Sc. (Organic Chemistry) since 2017. The Research Centre (Chemistry) was started in the year 2013-14 and is the first college in Goa to offer Ph.D. in Chemistry. The department is DST-FIST sponsored and the department has state of art infrastructure and laboratory facilities. The thrust research areas include green chemistry, medicinal chemistry, solid state chemistry and supramolecular chemistry.



## Registration

Participants should submit the online registration details via **google form**:

<https://forms.gle/HSaio4DjDY8wZfRo6>

## Fees

- Under graduates and Postgraduates: ₹ 500/-
- Research Scholars: ₹ 750/-
- Academic (Faculty): ₹ 1000/-
- Industry professionals: ₹ 1500/-

## Mode of Payment (E-Transfer)

Applicants should make payment through **UPI** or **NEFT** Transfer and upload transaction details in **registration form**.

**Account Name:** Dnyanprassarak Mandal's-  
Community Education Centre (CEC) fee receipt A/c

**Account No:** 13030210001639

**Bank name:** UCO Bank

**Branch Name:** Mapusa Branch

**Branch IFSC Code:** UCBA0001303

**OR**

## Scan and Pay



**UPI ID:** [dmccec1639@ucobank](mailto:dmccec1639@ucobank)

**Convener:** Prof. VIDYA DESAI

**Contact Details:** 7620568264, 9545349575

**Email id:** [desai\\_vidya@ymail.com](mailto:desai_vidya@ymail.com), [shetgaonkar96confc@gmail.com](mailto:shetgaonkar96confc@gmail.com)

**Register before**  
**21<sup>st</sup> April 2022**