

# Dr. Sundarababu Baskaran, FASc, FNA

## *Prof. G. Aravamudan Chair Professor*



### **Discussion Meeting with Donor**

**October 06, 2020**



# Broad Bio



**Dr. SUNDARABABU BASKARAN, FASc, FNA**  
*G. Aravamudan Chair Professor*

Department of Chemistry  
Indian Institute of Technology-Madras  
Chennai-600 036, INDIA  
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## Educational Qualifications:

1991 Ph. D. Indian Institute of Technology, Kanpur, India

**Professor S. Chandrasekaran**

**Dept. Organic Chemistry, IISc-Bangalore**



## Research & Professional Experience:

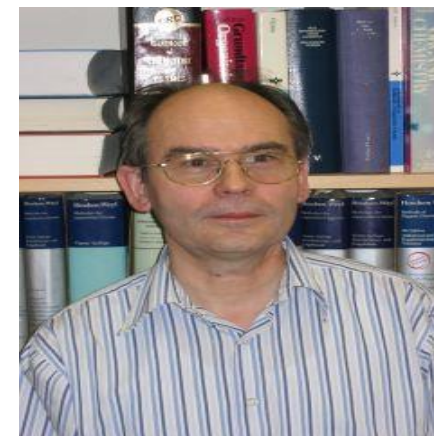
1991-93 Alexander von Humboldt (AvH) Research Fellow

Universitaet Duesseldorf, Germany

**Professor M. Braun**

**Project: Stereoselective Synthesis of Fredericamycin A**

(Anti-cancer Natural Product)



1993-95 Post Doctoral Fellow

Harvard University, USA

**Noble Laureate Professor E. J. Corey**

**Project: 1. Biomimetic Synthesis of Prostaglandin Endoperoxide**

**2. Lanosterol Cyclase Mimic: Design and Synthesis of Molecular Receptor for 2,3-Oxido Squalene**

# Noble Laureate Professor E. J. Corey



1993-95 NIH-  
Post Doctoral  
Fellow

- Project:**
- 1. Biomimetic Synthesis of Prostaglandin Endoperoxide**
  - 2. Lanosterol Cyclase Mimic: Design and Synthesis of Molecular Receptor for 2,3-Oxido Squalene**



Corey Research Family

# ***Research & Professional Experience:***



- 1995-98      Senior Scientist  
Dr. Reddy's Research Foundation(DRF)  
Hyderabad
- 1998-03      Assistant Professor  
Indian Institute of Technology Madras
- 2004-06      Associate Professor, IIT Madras
- 2006-        Professor, IIT Madras
- 2018         Institute Chair Professor
- 2020         G. Aravamudan Chair Professor

- 1991 Alexander von Humboldt Fellowship, Germany.
- 2008 Chemical Research Society of India (CRSI)-Medal
- 2010-15 National Representative, IUPAC
- 2013-15 Member, DST-Fast Track-Young Scientist Scheme
- 2013 Fellow of the Indian Academy of Sciences (FASc)
- 2015-18 Co-opted Member, Program Advisory Committee (Organic), SERB
- 2015-18 Council Member, National Organic Symposium Trust
- 2015- Associate Editor, J. Chemical Sciences
- 2018 Institute Chair Professor
- 2019 Prof. G. Aravamudan Chair Professorship
- 2020 Fellow of the Indian National Science Academy (FNA)



## Honours & Affiliation



INDIAN ACADEMY OF SCIENCES  
**FELLOWSHIP**

This is to certify that  
*S Baskaran*  
was elected to the Fellowship  
of the Indian Academy of Sciences  
in the year 2013 in recognition of  
outstanding contributions to science.

*Manitra V. Unnikrishnan*  
Secretaries

*Abanindranath Chatterjee*  
President

भारतीय राष्ट्रीय विज्ञान अकादमी

**Indian National Science Academy**



FOUNDED IN 1935

**Sundarababu Baskaran**

*has been elected*

Fellow of

the Indian National Science Academy

*at*

*the Annual General Meeting*

*on July 26, 2019*

*A. S. Srinivasan*

*An. Sood*





# Our Goal

To develop novel synthetic strategies based on **Domino/Cascade Reaction** and exploit these methods towards the stereoselective synthesis of biologically significant molecules.

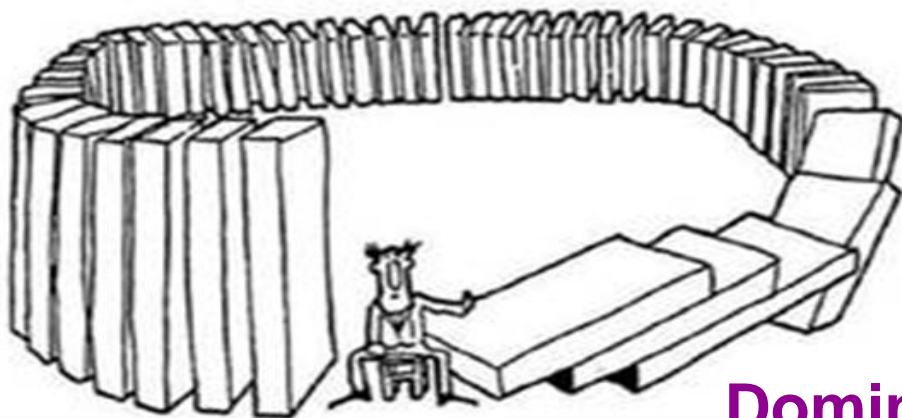


# Design and Development of Synthetically Useful One-pot Multistep Processes

One-pot Multistep Reactions:

Nomenclature

Domino or Cascade Reaction  
(Combination of **Sequential Reactions**)



**Domino / Cascade**  
Sequential Reactions



# Advantages of One-pot Multistep Reactions

- \* In a single operation, many C-C bonds are formed in a stereoselective manner
- \* Saves energy, materials and time
- \* Minimizes waste generation
- \* Beneficial effects on the Environment

Biomimetic in nature

Green Synthesis

# Broad Area of Research



- Development of New Domino Strategies in Organic Synthesis
- Enantioselective Synthesis
- Synthesis of Biologically Active Molecules and Natural Products
- Drug Design of Pharmaceutical Importance.

Current Research Interest

# Publications



More than eighty papers in international journals

Five patents in Indian and Abroad.

Book Chapter:

Heterocyclic Chiral Auxiliaries in Total Synthesis of Natural Products

Topics in Heterocyclic Chemistry

# International Collaboration

## INDIGO Program: Green Synthesis

### **Prof. Dr. Burkhard König**

Institut für Organische Chemie,  
Universität Regensburg,

D-93040, Regensburg, **Germany**.

E-mail: [burkhard.koenig@chemi.uniregensburg.de](mailto:burkhard.koenig@chemi.uniregensburg.de)



## Synthesis of Iminosugars

### **Professor Aloysius Siriwardena**

Laboratoire des Glucides, CNRS-UMR 6219

Université de Picardie Jules Verne,

Rue St Leu, Amiens, **France**.

Email: [aloysius.siriwardena@u-picardie.fr](mailto:aloysius.siriwardena@u-picardie.fr)



## List of PhD Students (Current)



### Present Research Scholars:



**Ms. Pramila Devi**

**Mr. D. V. Kirana**



**Ms. Akriti Srivastava**



**Mr. Rahul Verma**



**Mr. Vijay Kumar**



**Mr. Nemichand Pradhan**



**Mr. Ashish Chander Satti**

**Mr. Waghmode Amol Ganpat**

**Mr. Vilas Manikrao Awchar**



**Mr. Rajiv Sen**







# List of Former PhD Students



	Name of the Student	Year	Current Address
1.	Dr. Ganapati Reddy Pamulapati (Received Prof. C. N. Pillai Best Thesis Award-2004)	2003	Group Leader, Arbutus biopharma corporation, Greater Philadelphia, USA.
2.	Dr. G. D. Kishore Kumar	2005	Research Scientist, Dept. of Chemistry, Glasgow University, UK
3.	Dr. Subhendu. K. Mohanty	2006	Senior Group Leader, Syngene, Biocon, Bangalore
4.	Dr. Aravind Appu	2007	Orchid chemicals and pharmaceuticals, Chennai, India
5.	Dr. Ponminor Senthil Kumar (Received Best Thesis Award in Chemistry, and "Professor G. Sundararajan Endowment Prize" from IIT Madras) (Reaxys PhD Prize -2010" (1st prize of "Eli Lilly Research Award-2010")	2009	Senior scientist, SABIC Research & Technology, Bangalore, India
6.	Dr. Gomathi Sankar Muthukumar (Received Prof. V. Ramamurthy Best Thesis Award-2011)	2010	Research scientist, Max Planck Institute of Molecular Physiology, Dortmund, Germany

# List of Former PhD Students

7	Dr. Annamalai Murali (Received Prof. C. N. Pillai Best Thesis Award-2012) (2nd prize of “Eli Lilly Research Award-2012”)	2011	Postdoctoral fellow, Max Planck Institute of Molecular Physiology, Dortmund, Germany
8	Dr. Manohar Puppala	2012	Research Associate, NYU, Abu Dhabi
9	Dr. Sangram Gore (Received Prof. C. N. Pillai Best Thesis Award-2013)	2012	Research Associate, NYU, Abu Dhabi
10	Dr. Amit Banerjee	2014	Postdoctoral fellow, Chubu university, Japan.
11	Dr. Kiran Chinthapalli	2015	Postdoctoral fellow, University of Oklahoma, USA
12	Dr. Soundararasu Senthilkumar (Received Prof. C. N. Pillai Best Thesis Award-2016)	2016	Postdoctoral fellow, University of Gottingen, Germany.
13	Dr. Sure Siva Prasad	2017	Senior Scientist, GVKBio Hyderabad, India
14	Dr. N. Rajashekar Reddy	2019	Research Associate, Hong Kong University
15	Dr. Gouse Shaik	2020	Research Associate, Hong Kong University





Former Group Members

New Chemistry Building



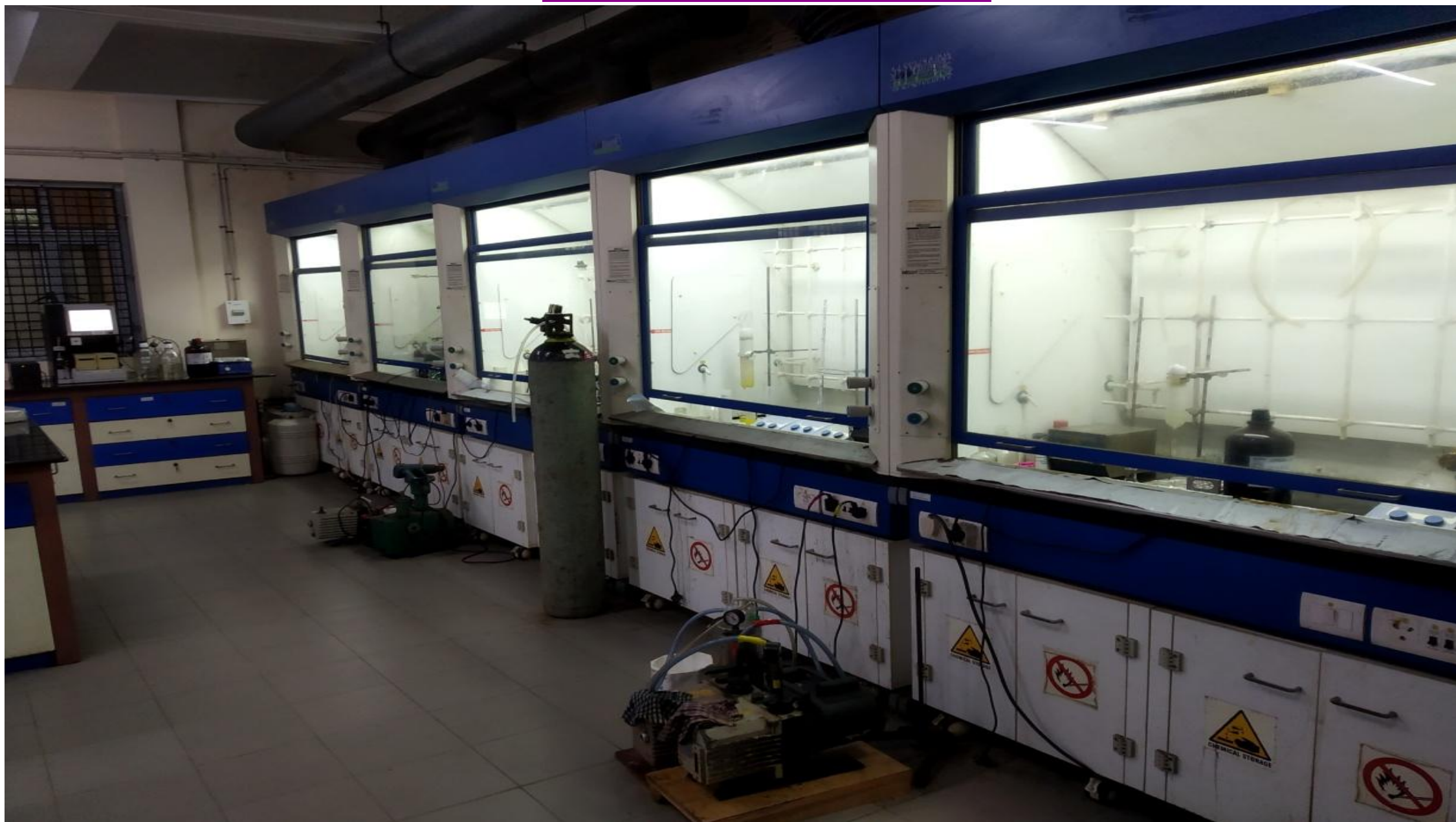
# Organic Synthesis-SB Lab



# Organic Synthesis-SB Lab



# Organic Synthesis-SB Lab







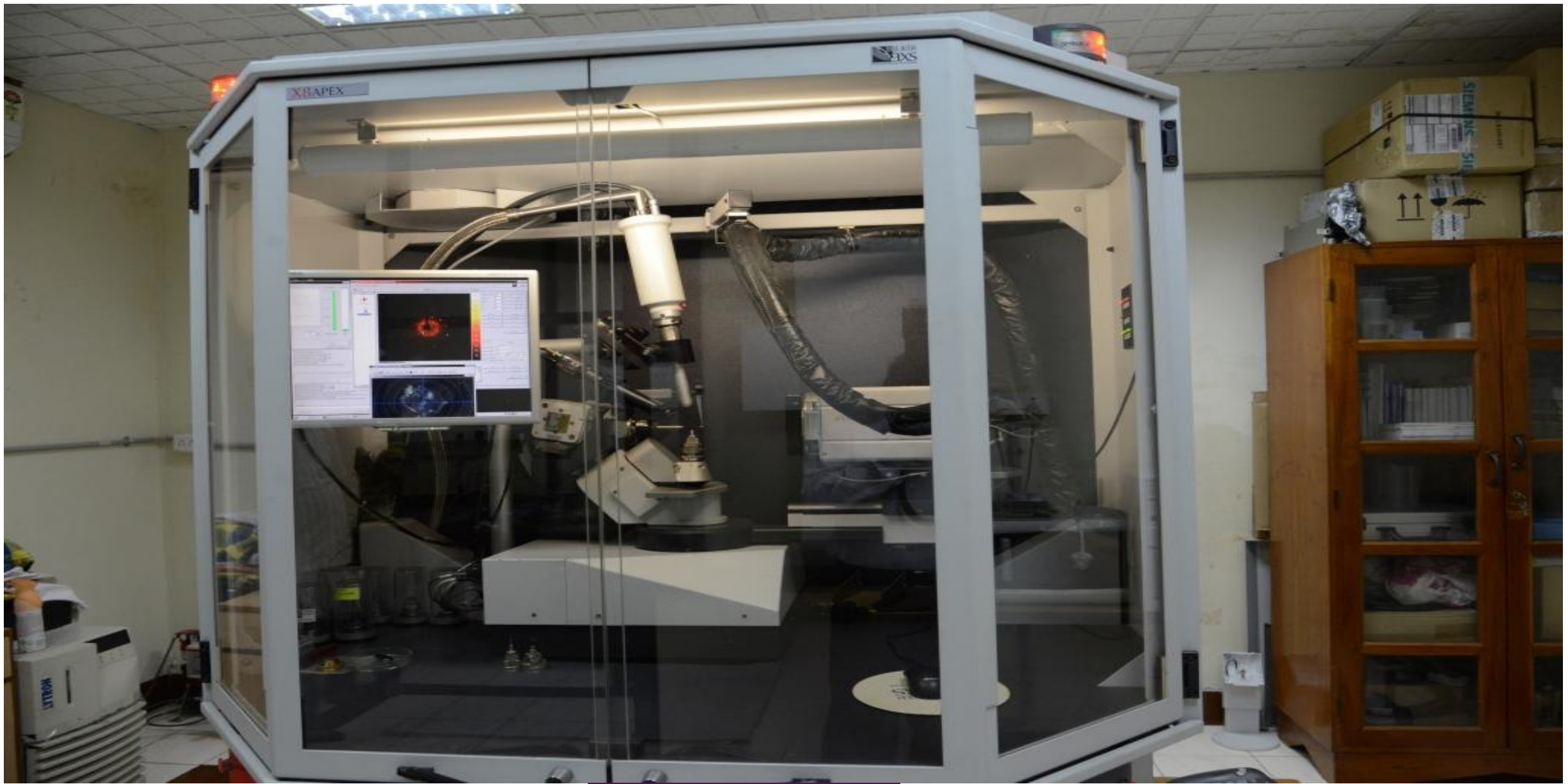
SB Group-Combi Flash Purification System



SB Group-HPLC Purification System



SB Group-Gas Chromatography (GC)



Single Crystal Xrd

## High Resolution Mass Spectrometry (HR-MS)





400 MHz NMR

# Thank you note from Chair Occupant

Dear Venu,

We would like to express our deepest gratitude for your generous contribution towards the creation of “Prof. G. Aravamudan Chair Professorship” in IIT Madras.

It is indeed a special privilege and great honour of being the first occupant of this prestigious chair professorship.

I am very grateful to IIT Madras for the unconditional support.

Thank you very much.

With best regards,

Baskaran



*Thank You*