

## PARTICIPANT PROFILE / REGISTRATION DETAILS

The Faculty members of the AICTE approved institutions, Universities Research Scholars, PG Students, participants from Pharma / Biotech companies etc., as prescribed by AICTE-ATAL.

- Participants should register online in the below mentioned link:

<https://atalacademy.aicte-india.org/login>

## SCAN HERE FOR REGISTRATION



## IMPORTANT DATES

**Last date for Registration: 25.11.2020**

## PROGRAMME COORDINATOR

**Prof. K. Balakrishnan**

Co-ordinator (ATAL-FDP)

Department of Immunology, SBS, MKU

Mobile: 98421141117

E - Mail: immunobala@mkuniversity.org

**Dr. R. Ranjithkumar**

Deputy Co-ordinator (ATAL-FDP)

Department of Organic Chemistry, SOC, MKU

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**MADURAI KAMARAJ UNIVERSITY**

*(University with Potential for Excellence)*

Madurai – 625021



**AICTE Training and Learning (ATAL) Academy**

**Sponsored**



**Faculty Development Programme (FDP) on  
“SYNTHETIC BIOLOGY”**

**From 30.11.2020 to 04.12.2020**

**Organized by**



**DEPARTMENT OF IMMUNOLOGY  
SCHOOL OF BIOLOGICAL SCIENCES  
&  
SCHOOL OF CHEMISTRY  
MADURAI KAMARAJ UNIVERSITY**

## MADURAI KAMARJ UNIVERSITY

Madurai Kamaraj University was started as Madurai University in the year 1965. MKU is one of the fifteen universities in India with a status of University with Potential for Excellence. In addition to 77 Departments under 20 Schools, the University has 20 academic centres. The Madurai Kamaraj University offers 41 PG, 35 M. Phil. And 17 Diploma/PG Diploma/Certificate courses in the various departments. Department of Immunology was started in the year of 1969. School of Biological Sciences is recognized by Centre for Excellence in Genomics Sciences by UGC and as a nodal centre for implementation of DBT-IPLS Programme.

### OBJECTIVES OF FDP

“Synthetic Biology” is the new field of science that involves redesigning organisms for useful purposes by engineering them to have new abilities. Synthetic biology researchers and companies around the world are harnessing the power of nature to solve problems in medicine, manufacturing and agriculture. This FDP would bring the academicians, researchers and practitioners including industry experts from Engineering and Technology background including Life Sciences and Biological Sciences which are the common platform to disseminate their knowledge and share their experiences during the workshop. Thus, the main aim of **Synthetic Biology** will be to learn how to design / engineer

biological systems and program cell / organism to perform novel tasks.

- Describes introduction and concepts about synthetic biology, approaches and tools that enable each step of the Design-Build-Test (DBT) cycle.
- To learn how these technologies are incorporated in **Synthetic Biology**.

### PROGRAMME OUTCOME

Students, Faculty members, and Scholars will acquire knowledge in the areas that make up Synthetic Biology and understand how these are incorporated into this new subject area. They will learn how to link the information from different areas and use this to build and design new components, pathways, cells and systems. The major elements of synthetic biology: design, construction and modeling of metabolic pathways, antibody engineering, bioethics and societal issues in Synthetic Biology, biochemical engineering and scale up of complex biological materials.

### ATAL ACADEMY

AICTE Training and Learning (ATAL) Academy is established with the vision “To empower faculty to achieve goals of Higher Education such as access, equity and quality”. ATAL academy will conduct a series of such workshops in thrust areas identified by AICTE.

## TENTATIVE TOPICS OF THE FDP

- Synthetic Life.
- Synthetic Chemistry vs. Synthetic Biology
- Synthetic Biology-How it started and where lies the future?
- Synthetic Biology- Tools for Prokaryotic systems.
- Synthetic Biology: basic concepts and applications.
- Immunobiosensors for point-of-care medical applications.
- Engineered Antibodies as a therapeutic tool - Synthetic Biology Perspectives.
- Immuno-Transgenics.
- Genomic Data Mining.
- Yoga for Healthy Life.

## INFORMATION TO PARTICIPANTS

- The FDP will be conducted in online mode.
- Participants are expected to have the provision of laptop / desktop / smart phone with good quality internet connections.
- **No Registration Fee. An E-Certificate will be provided by the ATAL Academy, AICTE, New Delhi.**
- 150 – 200 participants will be selected on first come first served basis. Shortlisted candidates will be informed through email.
- On completion of the course a Google Form based objective/quiz type assessment of all participants will be done.

- Those who have an attendance of minimum 80% and score more than 60% in the test will be issued a digital certificate by the ATAL Academy.

## ORGANIZING COMMITTEE

### CHIEF PATRON / DIRECTOR

**Prof. M. Krishnan**

Vice Chancellor

Madurai Kamaraj University

### CO-PATRON

**Prof. V. S. Vasantha**

Registrar i/c

Madurai Kamaraj University

### PROGRAMME COORDINATOR

**Prof. K. Balakrishnan**

Department of Immunology

School of Biological Sciences (SBS)

### DEPUTY CO-ORDINATOR

**Dr. R. Ranjithkumar**

Department of Organic Chemistry

School of Chemistry

### COMMITTEE MEMBERS

**Prof. G. Kumaresan, Chairperson, SBS**

**Dr. K. Jayakumar, SBS**

**Dr. V. Shanmugiah, SBS**

**Dr. B. Ashok Kumar, School of Biotechnology**

## RESOURCE PERSONS

The resource persons for the programme shall include faculty members of the host institute and invited speakers from reputed institutions like IITs, state and central Universities and Government recognized research institutions.

### **Prof. Pawan Dhar**

Synthetic Biology Group  
School of Biotechnology, JNU, New Delhi

### **Prof. Guhan Jeyaraman**

Bioprocess & Metabolic Engineering Lab  
Department of Biotechnology, Indian Institute of Technology Madras,  
Chennai

### **Prof. M.G. Sethuraman**

Department of Chemistry,  
The Gandhigram Rural Institution, Dindigul

### **Prof. Kalpana Luthra**

Department of Biochemistry,  
All India Institute of medical Sciences, New Delhi

### **Dr. Mainak Das**

Department of Biological Sciences and Bio Engineering  
IIT, Kanpur

### **Prof. S. Karutha Pandian**

Department of Biotechnology,  
Alagappa University

### **Prof. Joseph Selvin**

Department of Microbiology,  
Pondicherry University

### **Prof. N. Jayakumar**

Dept. of Bio-informatics, Bharathiar University, Coimbatore

### **Prof. K. Chandresekaran**

Department of Physical Education  
Madurai Kamaraj University

### **Dr. Pon Murugan**

Department of Botany, Bharathiar University, Coimbatore

### **Dr. Sanjay Ghosh**

Faculty Scientist  
Institute of Bioinformatics and Applied Biotechnology  
Bengaluru

### **Dr. Kaplia Kumar**

Department of Biotechnology,  
Manav Rachna International Institute of research and Studies,  
Faridabad

### **Dr. Karunakaran**

Department of Chemistry, VHNS College, Virudhunagar

### **Dr. Swathi Alagesan**

DST-Inspire Faculty Fellow  
Institute of Bioinformatics and Applied Biotechnology  
Bengaluru





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**From 30.11.2020 to 04.12.2020**

DATE	SESSION-I 10.00-10.40	10.45-12.00	SESSION-II 12.00-1.30	SESSION 2.30-4.00
30.11.2020	<b>Inauguration</b>	<b>Dr. Wilson Aruni</b> Sathyabama Institute of Science and Technology Chennai  “Synthetic Microbiome”- redefining “Host-pathogen” modulations.	<b>Dr. S. Karutha Pandian</b> Alagappa University, Karaikudi (TN)  "Synthetic Biology in Functional Genomics for Discovery of Novel Bioactives"	<b>Prof. M. G. Sethuraman</b> Gandhigram Rural Institute, Dindigul (TN)  “Biological Instagram”
01.12.2020	<b>Prof. Pawan Dhar</b> Jawaharlal Nehru University, New Delhi  “Synthetic Biology: Fundamental Concepts to Applications”		<b>Dr. Karunakaran</b> VHNSN College, Virudhunagar (TN)  “Immunobiosensor for point-of-care Medical Applications”	<b>Dr. N. Jeyakumar</b> Bharathiar University Coimbatore (TN)  “Genomic Data Mining. Bioinformatics and Genomic Data Analysis”
02.12.2020	<b>Dr. K. Chandresekaran</b> Madurai Kamaraj University  “Yoga for Healthy Life”		<b>Dr. Joseph Selvin</b> Pondicherry University  “Towards Synthetic Life-Applications of Synthetic Biology in the Creation of Synthetic Life and Bioprospecting”	<b>Prof. Kalpana Luthre</b> AIIMS, New Delhi  “Engineered Antibodies as a Therapeutic Tool – Synthetic Biology Perspective”
03.12.2020	<b>Dr. Sanjay Ghosh</b> Institute of Informatics and Applied Biotechnology, Bangalore  “The Synthetic Biology Revolution: Past, present and Future”		<b>Dr. Sudipto Saha</b> Bose Institute Kolkata, India  “Systems and Synthetic Biology”	<b>Dr. Swathi Alagesan</b> Institute of Informatics and Applied Biotechnology, Bangalore  “Synthetic Biology Tools for Prokaryotic Systems”
04.12.2020	<b>Dr. Kaplia Kumar</b> Manav Rachna International Institute of Research and Studies, Faridabad  “Synthetic Biology-How it started and where lies the future”		<b>Prof. Guhan Jeyaraman</b> Indian Institute of Technology, Madras  “Synthetic Biology Tools for Metabolic Engineering”	<b>Test/Valediction</b>