

**Value Added Course**

**HANDS ON TRAINING AND ONLINE LECTURE SERIES IN BIOINSTRUMENTATION**

Syllabus and topic covered

Maximum number of hours = 48 hrs

**Unit 1: FLASH CHROMATOGRAPHY (11 hrs)**

Introduction, Theory, Principle and Instrumentation of Flash chromatography, Applications Hands on training

**Unit 2: GCMS (11 hrs)**

Introduction, Theory, Principle and Instrumentation of GCMS Ionizers, Mass analyzers and Detectors used in GCMS Interpretation of GCMS data Applications of GCMS Hands on training of GCMS

**Unit 3: PULSE FIELD GEL ELECTROPHORESIS (15 hrs)**

Introduction, Theory, Principle and Instrumentation of Pulse Field Electrophoresis Applications of Pulse field Electrophoresis

**Unit 4: MICROWAVE DIGESTION (11 hrs)**

Introduction, Theory, Principle and Instrumentation of Microwave digestion. Applications

# 1. Theory and practical on Pulsed field gel Electrophoresis

**SPEAKER & TRAINER**

**BIO-RAD**



**Mr. AJAY DEEPAK BASKARAN**  
Field application specialist II  
Bio-Rad Laboratories Pvt.Ltd, India

**Free registration**

**E-certificate will be provided**

**Hands on training is only for the Faculty members and Research scholars**

**Registration will be on first come first serve basis.**

**Virtual class link will be provided to the registered participants only**

  
Google Meet



**Chairman**  
Prof.(Dr.).Jisha M S  
Director  
School of Biosciences  
MG University

**Webinar Convenor**  
Prof.(Dr.).Keerthi TR  
Co-ordinator  
DST-FIST/PURSE program  
School of Biosciences  
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**Webinar Co-ordinators**  
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Ms. Bicky Jerin Joseph  
Ms. Mary Theresa

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**SCHOOL OF BIOSCIENCES**  
Mahatma Gandhi University  
Kottayam

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**HANDS ON TRAINING AND ONLINE LECTURE SERIES IN BIOINSTRUMENTATION**

2021

**SPONSORED BY**  
DST-PURSE/FIST SCHEME



Department of Science and Technology  
Ministry of Science and Technology  
Government of India

**ORGANIZED BY**  
SCHOOL OF BIOSCIENCES  
MAHATMA GANDHI UNIVERSITY, KOTTAYAM  
KERALA, INDIA



**ABOUT**

Pulse Field Gel Electrophoresis (PFGE) is a powerful technique used for the separation of large DNA molecules (entire genomic DNA) after digesting it with unique restriction enzymes and applying it to a gel matrix under the electric field that periodically changes direction. PFGE is a variation of agarose gel electrophoresis that permits the analysis of bacterial DNA fragments over an order of magnitude larger than that with conventional restriction enzyme analysis. It can be used for bacterial typing, epidemiological studies, gene mapping of microbes and mammalian cells etc.

During this 3 days hands-on training, trainees perform each step of the PFGE protocol using bacterial isolates. Trainees become proficient in handling the technique after this workshop.



**WORKSHOP ON PULSE FIELD GEL ELECTROPHORESIS (PFGE)**

**DATE & TIME**

**VIRTUAL TRAINING**  
8th November 2021  
Time: 10.30 AM

**HANDS ON TRAINING**  
8th to 10th November 2021

## 2. Theory and Practical GC MS

### Speaker and Trainer

#### Virtual training

Ms Aarti Karkhanis

Application Manager GCMS

Thermo fisher scientific application team

#### Hands on Training

Mr Ramesh

Engineer

Thermo fisher scientific application team



School of Biosciences  
Mahatma Gandhi University  
Kottayam

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#### Chairman

Prof. (Dr.) Jisha M.S

Director

School of Biosciences

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#### Webinar Convener

Prof. (Dr.) Keerthi T. R

Co-ordinator

DST-FIST/PURSE program

School of Biosciences

M G university

#### Webinar Co-ordinators

Ms Shalini Balakrishnan

Mr Vysakh V. G

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2021

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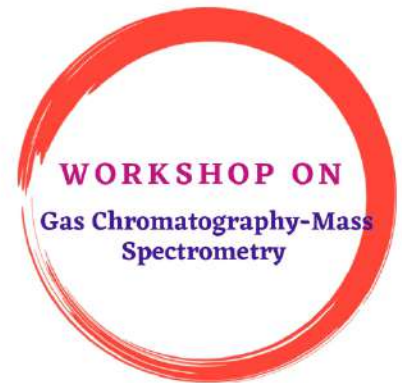
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SCHOOL OF BIOSCIENCES  
MAHATMA GANDHI UNIVERSITY,  
KOTTAYAM  
KERALA, INDIA



#### ABOUT

GC/MS continues to solve a wide range of problems in industrial research and development, ultimately contributing to the discovery, development, registration, and stewardship of new products. The ability of GC/MS to address these problems has increased significantly in recent years due to improvements in both GC/MS and GC x GC instrumentation, providing advancements in the separation power, speed, sensitivity, resolution, and dynamic range of these instruments.



#### DATE & TIMES

Virtual training  
10th November 2021  
time: 6.00 P.M

Hands on Training  
11 & 12 November 2021

### 3. Theory and practical on Microwave Digestion

## Hands-on Training & Online Lecture Series in Bioinstrumentation



Sponsored by DST-PURSE/FIST Scheme



Organized by  
School of Biosciences,  
M.G University, Kottayam

CHAIRMAN  
Prof. Dr. Jisha M S  
Director, School of Biosciences  
M.G University, Kottayam

DST-PURSE/FIST Co-ordinator  
Prof. Dr. Keerthi T.R  
School of Biosciences  
M.G University, Kottayam

## WORKSHOP ON

### MICROWAVE DIGESTION

Microwave digestion is a common technique used by elemental scientists to dissolve heavy metals in the presence of organic molecules prior to analysis by inductively coupled plasma, atomic absorption, or atomic emission measurements.

## DATES

### VIRTUAL TRAINING

16th NOVEMBER 2021

Time: 07 PM to 08 PM

### HANDS ON TRAINING

November 18th & 19th , 2021

# MICROWAVE DIGESTION

BRAND

**Anton Paar**



#### 4. Theory and practical On Flash Chromatography

 <p><b>SCHOOL OF BIOSCIENCES</b> MAHATMA GANDHI UNIVERSITY KOTTAYAM</p> <p><i>"Hands on Training and Online Lecture in Flash Chromatography"</i></p> <p>Online Session: 15th November 2021 at 6.00 PM Hands on training: 16th and 17th November, 2021</p> <p>For <i>Faculty members and Research Scholars</i></p>	<p><b>Why Flash Chromatography?</b></p> <p>Flash chromatography is a rapid form of preparative column chromatography. It is a simple, effective and popular approach used for the purification of chemical mixtures. Flash chromatography is widely used for peptide and antibiotic purification, drug discovery, sample clean up, early-stage drug discovery, natural product analysis, and protein analysis. If your research involves column chromatography purifications, flash chromatography, budget-friendly option that takes much less time will help you to achieve that goal. This training program intends to provide a hands-on experience on the working, instrumentation and applications of Flash chromatography.</p>	
<p>Resource persons</p>  <p>Mr. Arjun G Product Manager Flash Chromatography</p>  <p>Mr. Vishnu N R Work Flow Specialist - Chromatography Spinco Biotech Pvt Ltd</p>	<p>Organized by <b>DST FIST/ PURSE Program</b> <b>SCHOOL OF BIOSCIENCES</b></p>  <p>in association with <b>Spinco Biotech Pvt Ltd</b></p>  <p>Chairperson: <i>Dr. Jisha M S</i> Director, School of Biosciences Mahatma Gandhi University</p> <p>Webinar Convenor: <i>Prof.(Dr.) Keerthi T R</i> Coordinator, DST FIST/ PURSE Program Ph: 9497655293</p>	 <p>Webinar Co-ordinators: <i>Ms.Sherin Varghese</i> <i>Ms.Nayana A R</i> <i>Ms.Manjusha Premnath</i></p>
<p>Venue: School of Biosciences Pre-registration is compulsory Registration link: <a href="https://forms.gle/Qkwb2TaNWRvXPMeM7">https://forms.gle/Qkwb2TaNWRvXPMeM7</a> For further enquiry, e-mail to <a href="mailto:workshopbioinstrumentation@gmail.com">workshopbioinstrumentation@gmail.com</a> First sixty participants will only be allotted E-certificates will be provided for the participants</p>		

#### 1. Images on the workshop flash chromatograph





## 2. Microwave digestion





### 3. PFGE

