



**UGC-SWAYAM MOOC Course: BIOMASS CHARACTERIZATION**

PG Elective course code: ugc19-bt17

Number of credits: 4

**COURSE COORDINATOR:** Subject: Environmental Science/Biological science/Chemistry/Agriculture  
Dr.K. Arunkumar, Ph.D, Associate Professor & Head  
Department of Plant Science, Central University of Kerala  
Kasaragod-671320, Kerala, India

Email: [ugc19-bt17@swayam2.ac.in](mailto:ugc19-bt17@swayam2.ac.in)

**CERTIFICATE**

It is certified that **Dr. Ravi Kumar Kanaparthi, Ph.D., Assistant Professor of Chemistry**, School of Physical Sciences, Central University of Kerala, Kasaragod-671320 contributed for content writing and video presentation for the following modules of my MOOC course biomass characterization sanctioned by UGC launched in the SWAYAM portal.

- Module Title** : **20 Spectroscopy Techniques for Biomass Characterization**  
(Infrared spectroscopy and laser induced breakdown spectroscopy techniques)
- Module Title** : **21 Microscopy and Particle Size Distribution (Rheological Properties) Analyses**

Date: 09.10.2019



  
Dr. Arunkumar  
COURSE COORDINATOR

Dr. Arunkumar / Head, Department of Plant Science  
Central University of Kerala  
Kasaragod, Kerala 671320