



JAMAL MOHAMED COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI, TAMIL NADU

DBT STAR COLLEGE SCHEME ACTIVITIES : 2021-2022

PARTICIPATING DEPARTMENTS : BOTANY, CHEMISTRY, MATHEMATICS, PHYSICS & ZOOLOGY

INTERDISCIPLINARY GROUP PROJECTS

Botany

- Metrics for studying 'carbon banking' potential of trees in Jamal Mohamed College campus
- Cultivation of Oyster mushroom
- Biochemical profiling of Banana central core stem capillary water (Phase I)

Chemistry

- Analysis and comparative study of permissible chemicals in the easily accessible drugs
- Determination of different qualities of milk samples available in the market.
- Study on physico-chemical analysis of ground water quality

Mathematics

- A Study on Mental health among UG students during Covid-19 using SPSS.
- Trigonometry and its real life application using Mathematica.
- Statistical analysis on distribution of butterfly in Jamal Mohamed College Campus and awareness on butterfly conservation among school children using R- software.

Physics

- Determination of dielectric constant of certain liquids
- A Study on Ultrasonic Pest Repeller
- Study of Corrosion Resistance of Zinc metal by using *Annona squamosa* plant leaves

Zoology

- Influence of different types of feeds on the growth performance of *Carassius auratus*
- Terrestrial gamma and gross alpha radioactivity level in Ariyalur (fossil city), Tamil Nadu, India
- A baseline study to detect the presence of micro plastics in *Oreochromis mosambicus*.

SUMMER TRAINING



- Greenhouse cultivation of vegetables and flowers
- GIMP & Inkscape
- Mobile Phone Servicing
- Aquarium Keeping
- Telecom Technologies
- Python Programming

SALIENT FEATURES

- Establishment of DBT Star College Scheme laboratories
- Development of Innovative products/apps/ideas
- Enrichment of skill development and Research activities of Faculty members.
- Productive outreach activities
- Motivation & Guidance provided for the colleges desire to apply for DBT Star College Scheme

DBT STAR COLLEGE SCHEME LABORATORIES



INNOVATIVE PRODUCTS/APPS/IDEAS



Azolla Cultivation

Azolla Product

Mushroom Cultivation

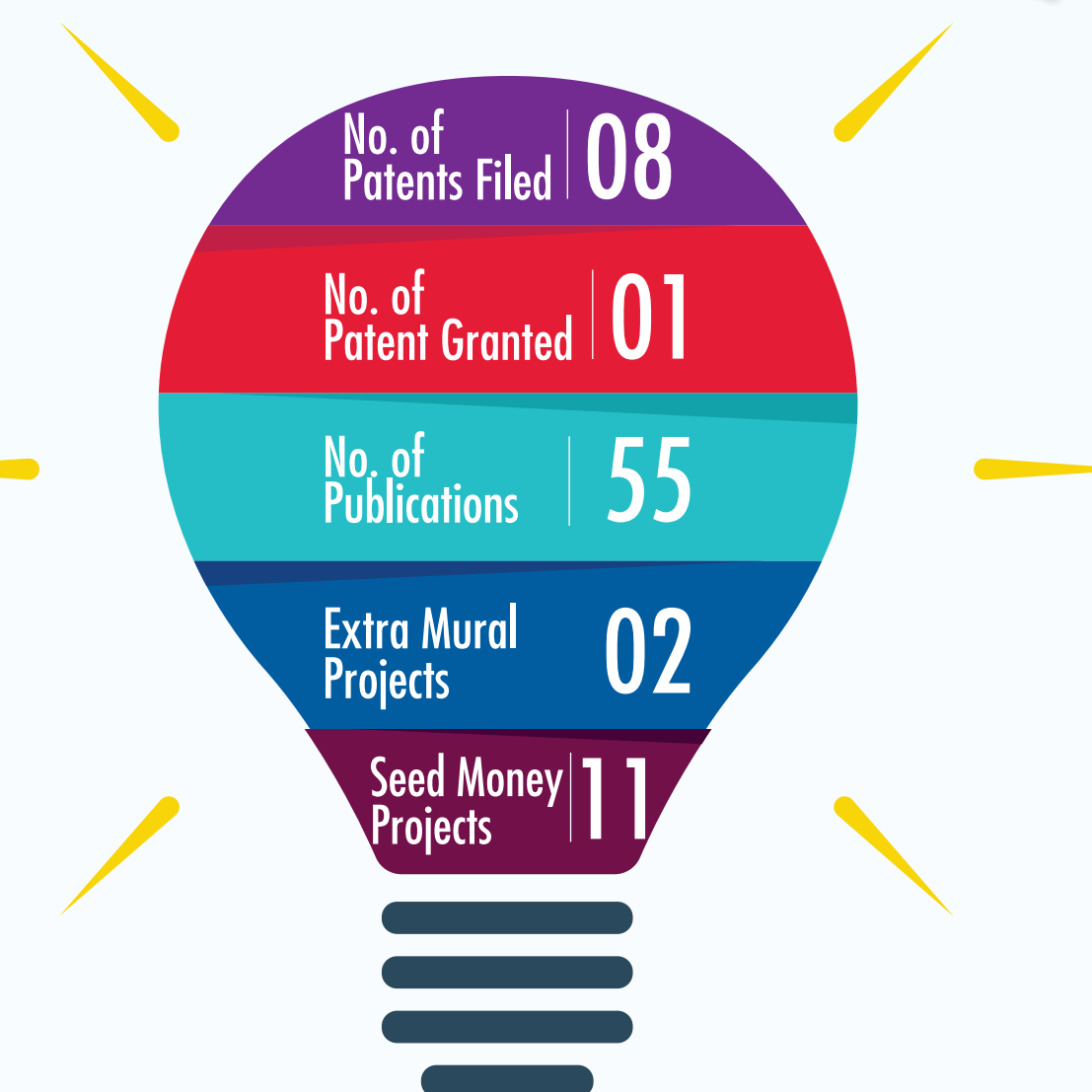
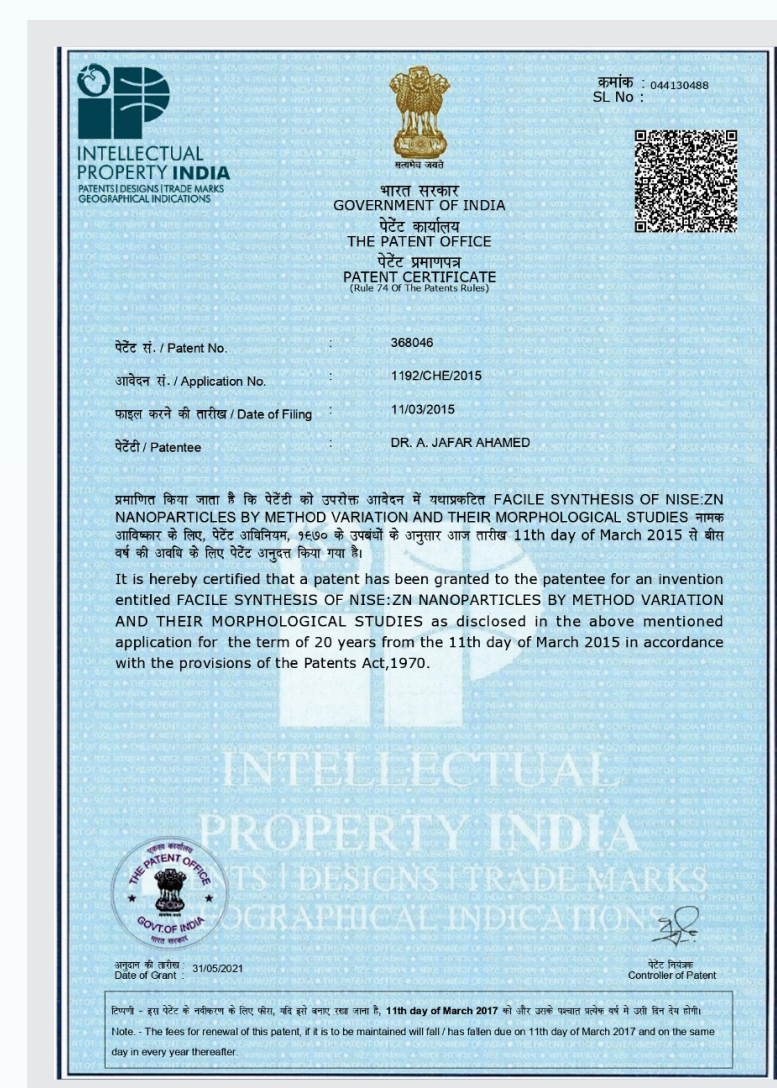


JMC Arboratics App



Smart India Hackathon Statement of Idea

SKILL DEVELOPMENT AND RESEARCH ACTIVITIES OF FACULTY MEMBERS



Dr. R. Radhakrishnan, Assistant Professor of Botany, was ranked as the "Top 2%, Most Influential Scientists for the Year 2020", by the Stanford University.



EFFECTIVE OUTREACH ACTIVITIES



MOTIVATION & GUIDANCE PROGRAMME FOR NEIGHBOURING COLLEGES TO APPLY FOR DBT STAR COLLEGE SCHEME



INTERDEPARTMENTAL TRAINING

Botany

- Plant Collection, Processing and Herbarium preparation
- Mushroom Cultivation and Post-Harvest Technology
- Herbal Products Preparation
- Analytical Techniques for Biologist
- Phylogenetic techniques

Chemistry

- Drawing chemical structure using Chemdraw Software
- Analysis of Soil Samples
- An overview of UV-Visible Spectroscopy
- Analytical techniques for separation of molecules

Mathematics

- Vedic Mathematics
- Data analysis & Mathematical software tools
- Troubleshooting in Computers
- R Software & Data Analysis

Physics

- Servicing of Electronic Gadgets and Home Appliances
- Applications of Geospatial Technology in Resource Management
- Assembling of HAM Radio Transmitters and Weak Signal Propagation Reporting System

Zoology

- Preservation of Zoological Specimens
- Entrepreneurial Development Programme on Aquaculture
- Anasysis of water quality parameters
- Plankton sampling & analysis

Invited Lectures

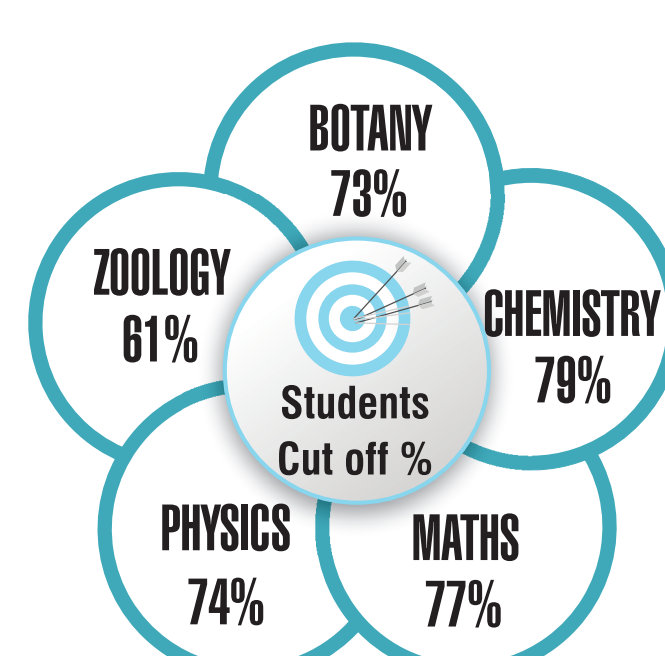
- Botany**
- Integrated Pest Management | Pandemic disease and its precautions
 - Novel Biopesticides for crop production | Species Recovery and Conservation
 - Bioprospecting of medicinal plants | Nutraceuticals of Traditional Rice Varieties
 - Developing bio entrepreneur skills among the biological society
 - Plant viruses in vegetable crops | Forests Lungs of Earth
 - Carrier Opportunities in Biology
 - The Way forward: Technology for enabling rural Economy
 - Science and Technology for Sustainable Future
- Chemistry**
- Impact of pesticides on environmental and human Health
 - Building an innovation Ecosystems in Colleges | Citation of Database
 - Scholarly Information Resources | Entrepreneurship & Startups
 - Business Opportunity Identification and Market Survey
 - Quality Research Writing | Digital learning and Teaching
 - Contribution of noble laureates to Science and Technology

- Mathematics**
- LaTeX for Beginners | Continuity and Differentiability | Online lecture on Calculus
 - Linearization Technique for nonlinear BVPs and Applications to Fluid Flow Problems
 - Online Lecture on Employment Prospects for Mathematics Aspirants
 - Online lecture on Partial Differential Equations and their Applications
 - Online programme to commemorate National Mathematics Day:
 - Lecture on Applications of Linear Differential Equations
 - Computations of Molecular Descriptors
 - Challenges in Computations of Molecular Descriptors.
 - Cyber Security- the need of the hour- What is it for the common people?
 - International Day of Mathematics "PI" (π) Day

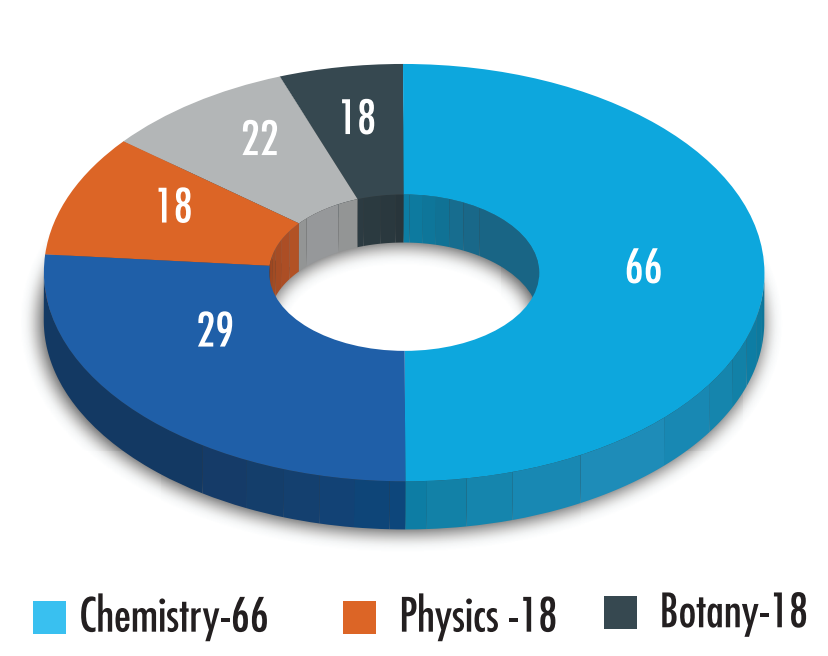
- Physics**
- Introduction to Condensed Matter Physics
 - Photon Upconversion Nanomaterials and their Bio-Applications
 - Oxide Thermoelectric Materials for Energy Harvesting
 - Two Dimensional Nanocomposites Functional Materials for Energy Storage Applications.
 - Recent Development in Astronomical Studies – Higher Education Perspective
 - Career Pathways to Astronomy Education and Research | Astronomy for Development
 - Astronomical Data & Technology | Introduction to Astrolab
 - Nuances of Patent Filing Procedure | Promoting Innovative Ideas to IPR

- Zoology**
- Naturopathy for Health | Wetland birds of River Kaveri; an Overview
 - KDM3A; A Novel the rapeutic target for pancreatic cancer
 - Egg albumin doped Zinc oxide Nanoparticle; a new alternative to cancer therapy
 - The History and Evolution of Radiation in Medicine
 - Environmental radioactivity | Probiotics for Human and Animal Health
 - Opportunities for Life science students in Industries

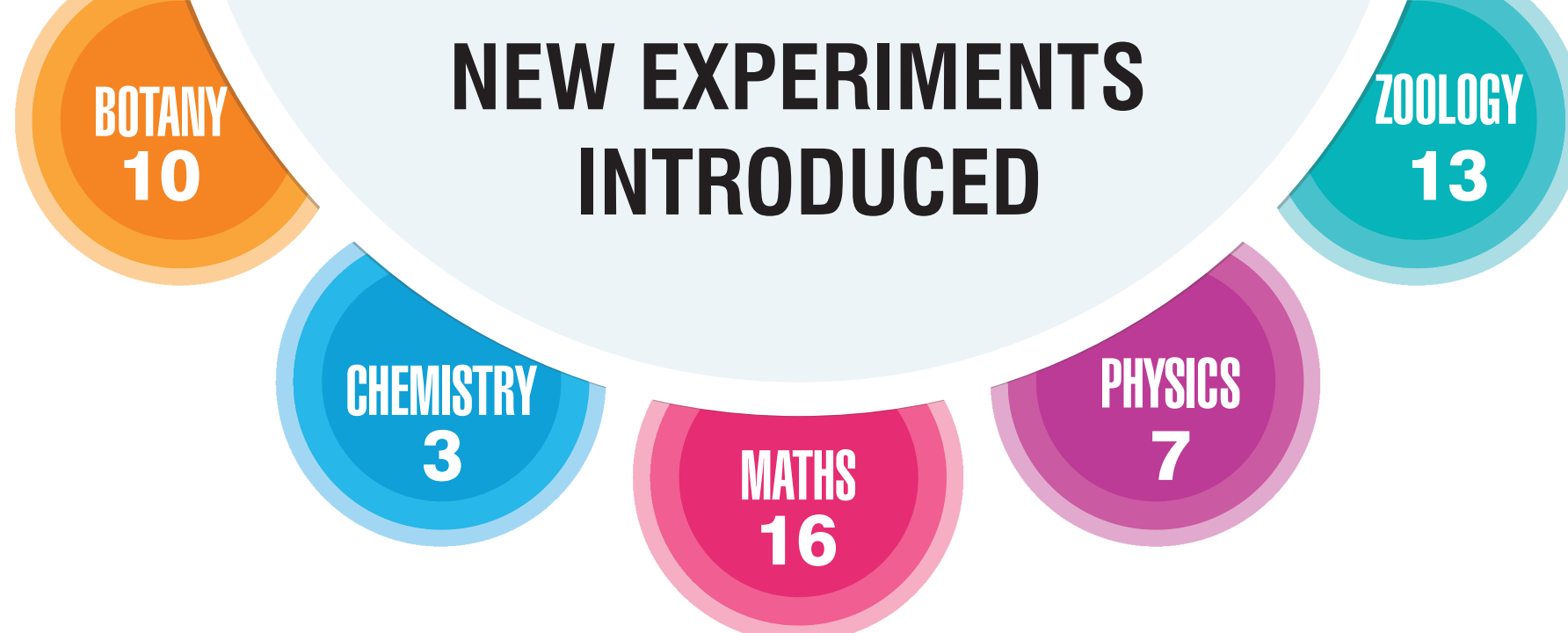
STUDENTS CUT OFF PERCENTAGE



NO. OF STUDENTS OPTING FOR PG



NEW EXPERIMENTS INTRODUCED



INDUSTRIAL AND FIELD VISIT

- Centre for Remote Sensing, BDU, Tiruchirappalli
- Forest Nursery, Perambalur, Tiruchirappalli forest division
- Gandigram Rural Institute, Dindigul
- Mudumalai Tiger Research and Botanical Garden Ooty
- SASTRA'S Hub for Research & Innovation, Thanjavur
- NIT, Trichy | OFT, Tiruchirappalli
- Anna Science Centre Planetarium, Tiruchirappalli
- Chicken Layer Farm at Malayalapatti, Perumbalur
- Country Chicken Layer farm, Arumbavur, Perumbalur
- KVK ICAR Perambalur | Fossil park, Sathanur
- Fossil field Kaarai | Dairy farm Perambalur
- Integrated farming unit, Rover College, Perambalur
- Muddy Shore and Mangroove forest, Kattumavadi & Puthupattinam

PARTICIPATING DEPARTMENTS, FACULTY TRAINING FOR SKILL DEVELOPMENT

