



Since 1965

Tel.No. : 0431 - 2420079

தந்தை பெரியார் அரசு கலை மற்றும் அறிவியல் கல்லூரி (த), திருச்சி-23  
**THANTHAI PERIYAR GOVERNMENT ARTS AND SCIENCE COLLEGE(A)**  
(Nationally Re-Accredited with 'A' Grade by NAAC at 3<sup>rd</sup> Cycle)  
(Affiliated to Bharathidasan University, Tiruchirappalli - 24)

**No.36/2, RACE COURSE ROAD, KHAJAMALAI, TIRUCHIRAPPALLI - 620 023  
TAMILNADU, INDIA.**

E-mail : [periyarevrcollege@yahoo.com](mailto:periyarevrcollege@yahoo.com)

## Criterion III - Research, Innovations and Extension

### 3.2 Resource Mobilization for Research

3.2.1 Research funding received by the institution and its faculties through Government

Dr.Balakrishnan	Improvement of S & T Infrastructure facilities at Government Colleges	TNSCST	1 Year	2019	6 Lakhs
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**தமிழ்நாடு அறிவியல் தொழில்நுட்ப மாநில மன்றம்**  
**TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY**  
(Established by Government of Tamilnadu)  
Directorate of Technical Education Campus, Chennai - 600 025  
Phone : 044 - 2230 1428 Web : [www.tanscst.nic.in](http://www.tanscst.nic.in)  
Telefax : 044 - 2230 1552 E-mail : [enquiry.tanscst.nic.in / ms.tanscst@nic.in](mailto:enquiry.tanscst.nic.in/ms.tanscst@nic.in)

**DR. R. SRINIVASAN**, M.Sc., Ph.D., F.I.C.S., M.A.C.S. (USA),  
Member Secretary

Letter No. TNSCST/S&T Infra/Batch I & II/VR/2019 5948 05.03.2019

To  
The Principal  
Periyar E.V.R College  
Tiruchirappalli - 620 023

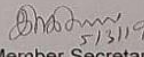
Sir/Madam,

Sub: Improvement of S&T Infrastructural Facilities at Government Colleges - Batch I & II - Grant released - Reg.

Ref: Co-ordinators meeting conducted at the Council office on 09.11.2018 and 28.11.2018

With reference to the above, a sum of Rs.6 lakh was sanctioned to your college under the scheme mentioned above. The meeting of Co-ordinators was conducted at the Council office on 9.11.2018 and 28.11.2018 to discuss and finalize the implementation of S&T Infra scheme. Accordingly, the quotation and other details have been received by the Council from all colleges (10) covered under the scheme. Now, the sanctioned amount of Rs.6 lakh is released through cheque (No.945529 dt.05.03.2019) in favour of the Principal. I request you to kindly complete the purchase and other procedures, send 2 copies of utilization certificate and report (format enclosed). Any excess amount required over and above the sanctioned amount may be met from other sources. Balance amount if there is any may be returned by cheque/ DD to the Council in favour of "Member Secretary, Tamilnadu State Council for Science and Technology, Chennai". The expenses towards attending the co-ordinators meeting may also be taken from this grant.

With wishes,

Yours faithfully,  
  
Member Secretary

Copy to:  
Dr.P.Ramesh Kumar  
Dept. of Physics  
Periyar E.V.R College  
Tiruchirappalli - 620 023



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Report submitted to

The Member Secretary  
Tamil Nadu State Council for Science and Technology  
DOTE CAMPUS  
Chennai – 620 025



**TNSCST**

Scheme : Improvement of S & T Infrastructure facilities at Government Colleges.

Reference No. : TNSCST/ S&T INFRA/BATCH I& II /2019/ 5948 Dated 05.03.2019



Submitted by

Dr. T. Balakrishnan  
Associate Professor and Head  
PG & Research Department of Physics  
Periyar EVR College (Autonomous)  
Race Course Road,  
Khajamalai  
Tiruchirappalli – 620 023



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### UTILISATION CERTIFICATE

01	Name of the Scheme	Improvement of S & T Infrastructure facilities at Government Colleges.	
02	Name and address of the College	Periyar EVR College (Autonomous) Race Course Road, Khajamalai Tiruchirappalli - 620 023	
03	Name and Address of the Coordinator	Dr. T. Balakrishnan Associate Professor and Head PG & Research Department of Physics Periyar EVR College (Autonomous) Race Course Road, Khajamalai Tiruchirappalli - 620 023	
04	Council sanction letter No & date	TNSCST/ S&T INFRA/BATCH I& II /2019/ 5948 Dated 05.03.2019	
05	Amount sanctioned	Rs. 6 lakhs	
		Amount allotted (Rs.)	Amount spent (Rs.)
	Physics	2,00,000-00	2,00,349-00
	Chemistry	2,50,000-00	2,40,041-00
	Botany	1,50,000-00	1,50,000-00
	Travel to Chennai to attend the Meeting	--	9,610-00
	Total	6,00,000-00	6,00,000-00

It is certified that a sum of **Rs. 6 Lakhs** sanctioned vide council letter No. TNSCST/ S&T INFRA/BATCH I& II /2019/ 5948/05.03.2019 has been utilised for improvement of laboratory / equipment facilities of our college. The balance grant of **Rs. NIL** is returned / there is no balance grant under the above scheme. The conditions of the grant has been fulfilled/ being fulfilled.

  
21.9.20  
Signature of the Co-ordinator

(With date and seal)

Dr. T. BALAKRISHNAN,  
M.Sc., M.Phil., B.Ed., Ph.D.  
Associate Professor of Physics Head  
Department of Physics  
Periyar E.V.R. College (Autonomous)  
Tiruchirappalli - 620 023

  
21.9.2020  
Signature of the Principal  
PRINCIPAL  
PERIYAR E.V.R. COLLEGE  
TIRUCHIRAPPALLI - 620 023  
D.O.CODE CI.102





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REPORT																					
01	Name of the Scheme Improvement of S & T Infrastructure facilities at Government Colleges																				
02	Name and address of the college Periyar EVR College (Autonomous) Race Course Road, Khajamalai Tiruchirappalli - 620 023																				
03	Name and Address of the Coordinator Dr. T. Balakrishnan Associate Professor and Head PG & Research Department of Physics Periyar EVR College (Autonomous) Race Course Road, Khajamalai Tiruchirappalli - 620 023																				
04	Council sanction letter No & date INSCST S&T INFRA BATCH I & II /2019/ 5948/05.03.2019																				
05	Amount sanctioned Rs. 6 lakh																				
06	Details of laboratory facilities Equipments purchased (Photographs may be enclosed) Refer Annexure																				
07	No. of UG / PG science students and research students utilizing the facility. <table border="1"><thead><tr><th>Department</th><th>UG</th><th>PG</th><th>M.Phil</th><th>Ph.D.</th></tr></thead><tbody><tr><td>Physics</td><td>--</td><td>25</td><td>12</td><td>02</td></tr><tr><td>Chemistry</td><td>80</td><td>25</td><td>15</td><td>20</td></tr><tr><td>Botany</td><td>60</td><td>50</td><td>--</td><td>--</td></tr></tbody></table>	Department	UG	PG	M.Phil	Ph.D.	Physics	--	25	12	02	Chemistry	80	25	15	20	Botany	60	50	--	--
Department	UG	PG	M.Phil	Ph.D.																	
Physics	--	25	12	02																	
Chemistry	80	25	15	20																	
Botany	60	50	--	--																	
08	A brief report on how above equipments / facility is being used. <b>PHYSICS</b> M.Sc., students have to submit a project report at the end of their course i.e. fourth semester. Students can utilize this equipment to prepare thinfilms. After thin film preparation using spray pyrolysis set up they can characterize the																				



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film using different techniques such as X – ray diffraction, electrical measurements, SEM and TEM.

Similarly M.PHIL students have to submit a thesis at the end of the second semester. They can start their research career in thin films. Preparation of thin film is hot area of research in Material science.

Ph.D., students can do their research work in the PG and Research.

#### **CHEMISTRY**

Equipments purchased in this fund are very useful for UG, PG and M.Phil students. The instruments are needed to complete the Practical papers. Orbital shaker and water bath are used for the synthesis of new compounds. Ph.D., scholars need digital electronic weighing machine with third decimal accuracy for their research work.

#### **BOTANY**

Our curriculum has plant Physiology and Biochemistry practical papers at both UG and PG levels. Most of the experiments in it involve



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		extraction in high speed centrifugation under cool conditions to preserve the bioactivity. Hence the instrument is being used routinely and has become basic necessity in our lab.
09.	Any relevant information	NIL

  
Signature of the Coordinator  
21-9-20

(with date and Seal)

Dr T. BALAKRISHNAN,  
M.Sc., M.Phil., B.Ed., Ph.D.  
Associate Professor of Physics  
Department of Physics  
Periyar E.V.R. College (Autonomous)  
Tiruchirappalli - 620 023

  
Signature of the Principal  
PRINCIPAL  
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## EQUIPMENTS PURCHASED FOR PHYSICS

### SPRAY PYROLYSIS SET UP

#### **A. EQUIPMENT STRUCTURE**

1. Shell size = 700 X 700 X 900 mm
2. Shell Construction - High quality fabrication of M. S. Body and M. S. Angle's structure with proper stiffeners and neat powder coat painting.
3. Door Construction - Sophisticated system to view the operation made by high quality Acrylic.
4. Model : Double deck, top used for the equipment's and the bottom will be used for the shelf model with door.
5. Door - Top - Acrylic door Bottom - Metal door.
6. Suction fan: 0.25HP suction fan will be provided.

#### **B. HEATING SYSTEM (ELECTRICAL)**

1. Heating elements : APM grade Kanthal
2. Operation : Single phase / AC
3. Power : 2 kW
4. Insulation (Furnace): Mechanically pressed zirconia blend ceramic fiber.  
(Max) Surface temperature of the hot plate
5. Working temperature: 450° C.
6. Work area : 150 x 150 mm

#### **C. SPRAYING SYSTEM PUMP**

1. Pump : Peristaltic pump, Motor : 24v PMDC motor Pressure: Upto 2 Kg/Sq.Cm
2. Spray rate controlling : Digitally the peristaltic pump RPM will be controlled from 10-100 RPM
3. Spray rate : =1 ml to 65 ml/min
4. Tubing : 3mm ID tubing
5. Tube Material : Silicon transparent Hose

#### **D. SPRAY GUN**

1. Nozzle : Glass Gun (1mm dia)
2. Spray gun : Made by glass with special design
3. Spray gun and hotplate height: 260 mm E.AIR COMPRESSOR: 1. Working pressure at outlet of spray gun : Adjustable 1.5bar 2. Air Compressor : 0.25hp In built compressor 3. Air tank capacity : 10 liter
4. Air delivery : 25 CFM
5. Receiver Tank : Fitted with Safety Valves, Pressure Gauge, Drain Valve
6. Fittings : Pressure Relief Valve, Automatic Pressure Switch, Suction Filter will be provided.

#### **F. CONTROL SYSTEM**

1. Temperature control: TAIE PID Temperature programmer.
2. Temperature sensor: K type thermocouple to control the furnace.
3. Temperature sensor: Non contact sensor for specimen (furnace temperature)  $\pm 1$  °C
4. Accuracy





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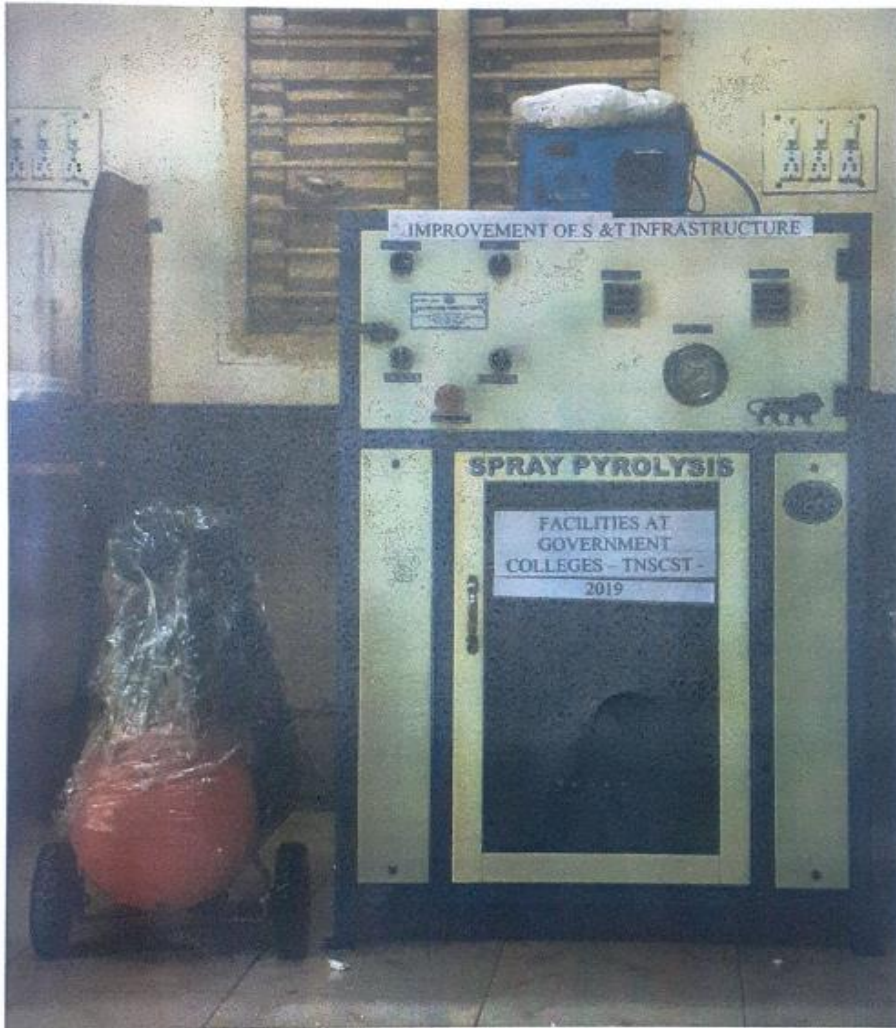
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5. Indications : a) Ammeter and Voltmeter b) Mains Indicator c) Output Indicator .
6. Control switches : Mains on, out put on
7. Pressure: Analogue pressure indication.



**SPRAY PYROLYSIS SETUP - THIN FILM  
COATING UNIT**



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## EQUIPMENTS PURCHASED FOR CHEMISTRY

### DEPARTMENT

1. PHOTOELECTRIC CALORIMETER
2. CALOMEL ELECTRODE
3. DIGITAL POTENTIOMETER
4. PLATINUM ELECTRODE
5. ORBITAL - ROTARY SHAKER
6. ELECTRIC WATER BATH
7. DIGITAL ELECTRONIC BALANCE (0.001mg)
8. MELTING POINT APPARATUS



**DIGITAL CALORIMETER**



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CALOMEL ELECTRODE



PLATINUM ELECTRODE





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ORBITAL SHAKER



ELECTRIC WATER BATH



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## MELTING POINT APPARATUS

