

## Central Instrumentation Centre

**Location:** G-Block, Second Floor, Room No. G2/4 and G2/3

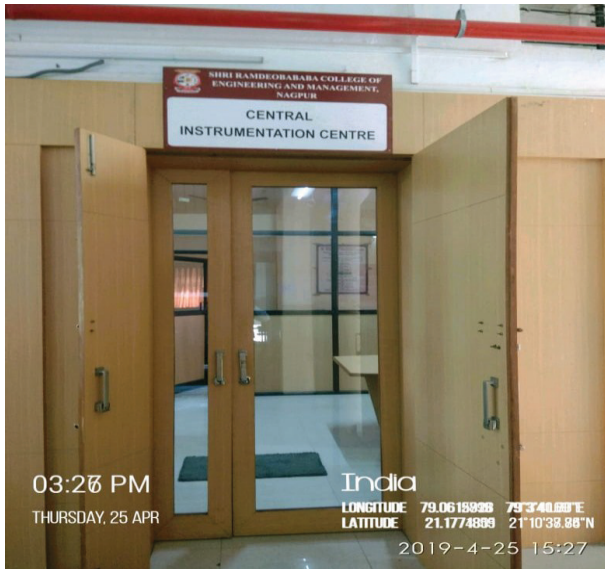
The Central Instrumentation Centre (CIC), at RCOEM was established with an objective of providing a central facility of latest and advanced analytical techniques for research in various areas of engineering, science and technology. It houses highly sophisticated and modern analytical equipment such Near Infrared Spectrophotometer, UV-Visible spectrophotometer, Digital Acquisition system, Profile Projector, LED meter, High Temperature furnace upto 1700°C etc. A wide range of analytical methods/techniques for chemical/material analysis/testing/characterization is offered to the research students and faculties.

Central Instrumentation Centre of the institute provides sophisticated and analytical instrumentation facilities to the researchers of all Science and Engineering Departments of the College for carrying out their research work for achieving their Ph.D. Degrees. CIC facilities are regularly used by B.E., M.Tech students for completing their research projects. Final year B.E. students of the various departments have used the facilities to complete their Research Internship projects. Some students are also utilizing this centre for their routine practical work. Research students operate instruments themselves for their experiments. This training strengthens their theoretical concept and makes them confident in facing interviews for jobs and carryout further research work.

Faculties and students from various departments such as Electronics Engineering, Mechanical Engineering, Electronics and Communication Engineering, Industrial Engineering etc. are also utilizing the facilities available in the centre.

Researchers from other institutions in Nagpur region like VNIT, RTMNU Campus and various Engineering and Science colleges in the region has been benefited due to the facilities available in this centre for their Ph.D. and Post-Graduation dissertation work.

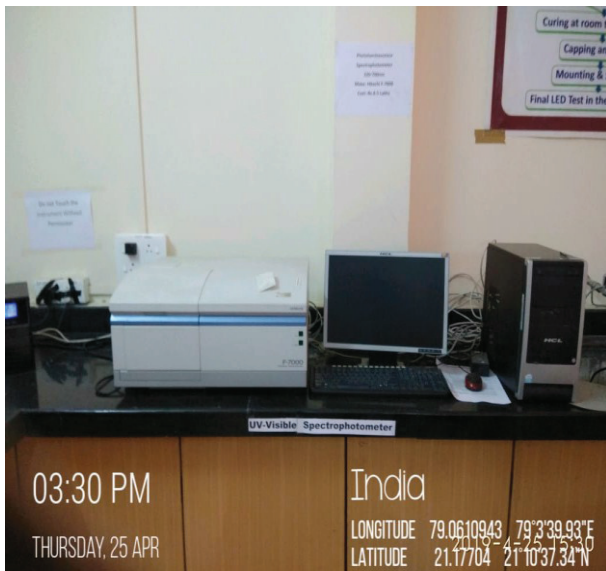
Research Scholars from other Universities/institutions like SGB Amravati University, Gondwana University availed the facilities of CIC for their research work. Researchers from other states have also utilized the facilities available at CIC, RCOEM.



CIC main entrance Room no. G2/4



Near Infrared Spectrophotometer Quantum Master QM-51 Photon Technologies USA for measurement of fluorescence in NIR region



Hitachi F-7000 UV visible spectrophotometer for measuring fluorescence spectra in UV- Visible range



Lumen Meter for measuring LED characteristics



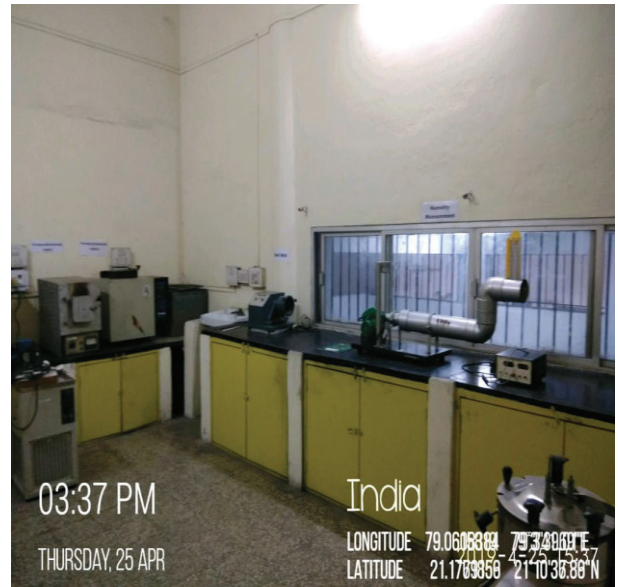
Double Distillation Unit, Oil Bath & High Speed centrifuge



Weight balance, low speed centrifuge, desiccator and ultrasonic bath



Toolmaker's Microscope and Profile Projector for measurements of thread, major-minor diameters.



Furnaces and Humidity measurement systems

### Details of Instruments in Central Instrumentation Centre

Sr.No.	Equipment (Name)	Brief Description	Year of Purchase	Procured Under	Cost
1.	Hitachi F-7000 Spectrometer	Used for measuring fluorescence spectra in UV-Visible Region (220-700nm), Decay measurement with millisecond order, Reflectance of material.	2008	DST Project	8,26,000
2.	ZWL-600 Lumen meter	Used for measuring Color Coordinates , Color Rendering Index, Lumen output LED angle and angle intensity, color temperature, lumen, current and voltage, etc of materials used for making LEDs	2012	BARC MoU	3,06,974
3.	USB-2000 Spectrometer	Portable spectrometer used for measuring fluorescence spectra in UV-Visible Region (250-650nm)	2004	ICMR Project	1,50,000
4.	Piccoammeter	For measuring current upto Pico ampere	2007	DST Project	2,80,000
5.	Spin Coating Unit	Used for making thin films	2007	DST Project	1,05,000
6.	QM-51, Quantum Master NIR Spectrophotometer+ K-148-S Powder Sample Holder	Used for measuring fluorescence spectra in UV-Visible Region (220-700nm), Reflectance of material.	2013	DST Project	21,38,760
7.	LED Meter (LEDM-01) UPRTECK	CMOS Linear Image Sensor; 380 to 780 nm; Approximately 12 nm (Half Bandwidth). Used for detecting visible spectra of material.	2014	DST Project	1,16,218
8.	Vacuum Oven	For heating of material in Vacuum upto 500° C	2009	DST Project	22000.00

9.	Mettler Balance (0.1mg accuracy)	Used for weighing of samples	2013	DST Project	75,825.00
10.	Muffle Furnace Maximum Temperature : 1700°C	For heating of materials upto 1700°C	2013	DST Project	3,75,000
11.	Furnace (Horizontal)	Horizontal Furnace with temperature controller upto 1000° C with temp. controller	2004	ICMR Project	9500.00
12.	Furnace (Vertical 5" x5"x10")	Vertical Furnace with temperature controller upto 1000°C with temp. controller	2013	DST Project	14600.00
13.	Microwave Oven	For heating of material in upto 500° C	2009	BARC MoU	11300.00
14.	Atmosphere Furnace (FUR-04)	Atmosphere Furnace upto 1300 deg C with flow of nitrogen or argon	2016	DST Project	173138.00
15.	Ultra Sonic Bath	Used for cleaning contaminants adhering to substrates like metals, plastics, glass, rubber, and ceramics.	2013	DST Project	167062.00
16.	Autoclave	Autoclave with Temp. Controller and timer	2013	BARC MoU	53410.00
17.	Remi 8-C Centrifuge machine	For centrifuge purpose. 5250 rpm	2011		14856.00
18.	Toolmaker's Microscope	Used for measurements of threads i.e. major and minor diameter, mean effective diameter etc.	1992		167500.00
19.	Profile Projector	Used for measuring major diameter, minor diameter, pitch, angle of screw	2008		57,178.00
20.	PC based Data Acquisition System	Used for acquisition of sensor data	2011		56000.00
21.	Humidity Measurement	Used for the measurement of relative humidity in air. Also used for measuring the temperature of a flow of air by comparing it with the theoretical value	2011		18703.00

*P.R Gandhi*  
(P.R Gandhi)  
Incharge

Central Instrumentation Centre  
Assistant Professor of Physics  
Shri Ramdeobaba College of  
Engineering and Management, Nagpur-13



*R. K. ...*  
Principal  
Shri Ramdeobaba College  
of Engineering & Management, Nagpur-13