



## **Seth Kesarimal Porwal College of Arts and Science and Commerce, Kamptee-441001**

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The college is one of the premier institutions under the RTM Nagpur University, Nagpur providing quality education in the faculties of Arts, Science, and Commerce with the unique achievement of being reaccredited with “A” Grade by NAAC Committee, Bengaluru. The college has been continuously striving for excellence in education, training, research and consultancy and offers value-based education to urban and rural students. By intensive and meaningful teaching methods, the college offer the very best in the global arena and caters to the growing demands of the corporate world. Moreover, college has well qualified and learned teaching staff who are always ready to bring the best out of their students.

The college has been continuously striving for excellence in research since the inception of Post graduate courses in the departments of Chemistry and Microbiology. After continuous efforts, the college has been approved as ‘Place for Higher Learning and Research’ in the year 2011 by the RTM Nagpur University, Nagpur to carry out PhD programmes in Chemistry and Microbiology. Nonetheless, in the last five years, more than 500 research papers have been published by the faculty members in reputed journals which are indexing/abstracting in SCI/SCIE/ECI/Scopus etc. The college has received more than Rs. 90 lakhs research grants from various research funding agencies viz. UGC, DST, SERB. Apart from this, the college has organized a couple of state/national/international conferences, symposiums, workshops and webinars. Moreover, the college has established a number MoU with several Institutes to strengthen the academic and research arenas.

## Research Area in Chemistry Subject

1. Green synthesis of nanomaterials
2. Nanochemistry and green chemistry
3. Graphene based metal oxide nanocomposites
4. Biological and clinical applications of nanomaterials
5. Water purification, dyes and toxic compounds degradation
6. Surface chemistry,
7. Heterocyclic chemistry,
8. Synthesis of anticancer, antimalarial antimicrobials

### Subject: Chemistry

#### List of PhD Supervisors working in the centre

Sr. No	Name of Supervisor	Subject	Academic degree	Date of Supervisor Approval	Date of PG-teacher Approval	No. of Ph.D. students Awarded	No. of Ph.D students registered	Total publication
01	Dr. R.G. Chaudhary	Chemistry	MSc,MPhil ,Ph.D.	Ph.D/RRC/2029 (17/12/2014)	No/CS/1938 (03/05/2016)	06	04	132
02	Dr. S. A. Mondal	Chemistry	M.Sc.,PhD	Ph.D/RRC/Guide /2020/1120 (02/01/2021)	No/CDS/2018 /2360 (30/08/2018)	---	04	22

#### List of PhD students awarded/registered from the centre

Sr. No.	Name of Research Students	Topic of the research	Place of research work	Name of Supervisors	Date of registration	Status
01	Dr. D. Deshmukh	Volumetric, compressibility and transport behaviour of some bioactive compounds in aqueous solutions at different	PGTD Chemistry, RTM Nagpur University, Nagpur	Dr. S.S. Dhondge & Dr. L.J. Paliwal	30/6/2010	Awarded (16/7/2015)

		temperatures				
02	Dr. P. Dahasahastarra	Thermodynamics properties of some water-soluble vitamins in aqueous solution at low temperatures	PGTD Chemistry, RTM Nagpur University, Nagpur	Dr. S.S. Dhondge & Dr. L.J. Paliwal	18/7/2011	Awarded (18/3/2016)
03	Dr. P. Shende	Volumetric and ultrasonic study of some biologically active drugs in aqueous solutions at different temperatures	PGTD Chemistry, RTM Nagpur University, Nagpur	Dr. S.S. Dhondge & Dr. L.J. Paliwal	15/1/2011	Awarded (22/3/2017)
04	Dr. S. Mondal	Thermodynamic and transport properties of some biological active compounds in aqueous binary and ternary mixtures at different temperatures	PGTD Chemistry, RTM Nagpur University, Nagpur & P.G. Deptt. Chemistry, S.K.Porwal College Kamptee	Dr. S.S. Dhondge & Dr. L.J. Paliwal	14/1/2013	Awarded (27/9/2016)
05	Dr. S. Jengathe	Investigation of volumetric and compressibility behaviors binary & ternary mixtures of some important drugs at different temperatures	PGTD Chemistry, RTM Nagpur University, Nagpur & S.K.Porwal College Kamptee	Dr. S.S. Dhondge & Dr. L.J. Paliwal	09/1/2013	Awarded (27/9/2016)
06	Dr. Lata Malladi	Volumetric and compressibility behaviours of some bioactive compounds in aqueous binary and ternary mixtures at different temperatures	PGTD Chemistry, RTM Nagpur University, Nagpur	Dr. S.S. Dhondge & Dr. V.M. Tangde	22/4/2015	Awarded (18/1/2020)
07	Dr. Moses	Thermodynamic properties of aqueous binary mixtures of some amino acid derivatives and amino acid neurotransmitters at different temperatures.	PGTD Chemistry, RTM Nagpur University, Nagpur	Dr. S.S. Dhondge & Dr. L.J. Paliwal	12/7/2013	Awarded (8/8/2017)
08	Dr. N. Wanjari	Microwave-assisted synthesis and physicochemical characterization of some	PGTD Chemistry, RTM Nagpur University, Nagpur	Dr. M.B. Bagade & Dr. L.J. Paliwal	08/1/2010	Awarded (22/3/2017)

		new coordination polymers				
09	Dr. P. Sadaphale	Microwave-assisted synthesis novel antimicrobial isoxazoles, pyrazoles and indazoles	PGTD Chemistry, RTM Nagpur University, Nagpur	Dr. M.B. Bagade & Dr. L.J. Paliwal	08/1/2010	Awarded (3/12/2017)
10	Dr. K. Chaudhari	Synthesis of novel antineoplastic agents: Pyrimidines, Triazines and their derivatives	PGTD Chemistry, RTM Nagpur University, Nagpur	Dr. M.B. Bagade & Dr. L.J. Paliwal	08/1/2010	Awarded (22/3/2017)
11	Dr. S. Naaz	Synthesis, characterization and biological evaluation of some new Mannich bases	P.G. Deptt. Chemistry, S.K. Porwal College Kamptee	Dr. M.B. Bagade	09/4/2015	Awarded 4/12/2021)
12	Dr. J. A Tanna	Synthesis, characterization and application of some nano material of some transition metal ions	P.G. Deptt. Chemistry, S.K. Porwal College Kamptee & RTMNU Nagpur	Dr. H.D. Juneja & Dr. R.G. Chaudhary	02/7/2013	Awarded (7/09/2017)
13	Dr. V.Sonkusare	Synthesis, Characterization and Applications of Some Metal/ Metal Oxide and Composite Nanomaterials	PGTD Chemistry, RTM Nagpur University, Nagpur	Dr. H.D. Juneja & Dr. R.G. Chaudhary	11/5/2015	Awarded (25/4/2019)
14	Dr. Rina Bagade	Synthesis, Characterization, Thermal, Kinetics and Biological Studies of Some Chelate Polymers	PGTD Chemistry, RTM Nagpur University, Nagpur	Dr. H.D. Juneja & Dr. R.G. Chaudhary	01/1/2016	Awarded (20/7/2021)
15	Dr. P.B. Chouke	Green synthesis of metal/metal oxide nps by using plant extract: microscopic characterization and applications	P.G. Deptt. Chemistry, S.K. Porwal College Kamptee	Dr. R.G. Chaudhary	02/1/2016	Awarded (5/10/2021)
16	Dr. Ajay K. Potbhare	Green synthesis and application of nanostructures graphene-based metal oxides/polymernanocompo	P.G. Deptt. Chemistry, S.K. Porwal College Kamptee	Dr. R.G. Chaudhary	16/10/2018	Awarded (7/07/2022)

		sites				
17	Dr. M. Umekar	Green synthesis and potential applications of graphene-based nanomaterials	Deptt. Chemistry, S.K. Porwal College Kamptee	Dr. R.G. Chaudhary	18/01/2017	Awarded (2/01/2023)
18	Mr. Pavan Bhilkar	Design and Development of Biogenic Metal Oxide/Graphene-Based Nanomaterials for Biomedical Application	P.G. Deptt. Chemistry, S.K. Porwal College Kamptee	Dr. R.G. Chaudhary	14/03/2022	Pursuing
19	Ms. Trupti Shrirame	Development of Bio-mediated Graphene-Based Nanocomposites for Removal Hazardous Compounds	P.G. Deptt. Chemistry, S.K. Porwal College Kamptee	Dr. R.G. Chaudhary	15/03/2022	Pursuing
20	Mr. Rohit Madankar	Development of Graphene/ Graphitic Carbon Nitride-Based Nanocomposites and Their Potential Applications	P.G. Deptt. Chemistry, S.K. Porwal College Kamptee	Dr. R.G. Chaudhary	15/3/2022	Pursuing
21	Ms. Jaslin Khan	ioinspired Metal Oxide Doped Polymer Nanocomposites and Their Potential Applications	Amity University, Madhya Pradesh, and S.K. Porwal College Kamptee	Dr. R.G. Chaudhary	6/03/2020	Pursuing
22	Mr. Sampat Singda	Design and Development of Metal/Metal Oxide Nanomaterials as a Potential catalyst for Organic Transformation	P.G. Deptt. Chemistry, S.K. Porwal College Kamptee	Dr. S. Mondal	14/3/2022	Pursuing
23	Ms. Pranali Hadole	One Pot Multicomponent Synthesis Biologically Active Molecules Using Green Heterogeneous Catalyst	P.G. Deptt. Chemistry, S.K. Porwal College Kamptee	Dr. S. Mondal	15/3/2022	Pursuing
24	Ms. Minakshi Deshmukh	Fabrication, Characterization of Carbon-Based Nanocomposites and Their Potential Applications	P.G. Deptt. Chemistry, S.K. Porwal College Kamptee	Dr. S. Mondal	29/3/2022	Pursuing

25	Mr. Amit Chaudhari	Biofabrication and spectroscopic characterization of metal/metal oxide nanostructured materials for environmental applications	P.G. Chemistry, S. K. Porwal College Kamptee	Dr. S. Mondal	14/3/2022	Pursuing
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## Research Area in Microbiology Subject

1. Agriculture Microbiology,
2. Bioremediation, Biocontrol, and Nanotechnology,
3. Plant microbial interaction and Metagenomics,
4. Exopolysaccharides (EPS), and Antimicrobial activity,
5. Water Microbiology,
6. Bioplastic and Aquaculture,

### Subject: Microbiology

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Sr. No	Name of Supervisor	Subject	Academic degree	Date of Supervisor Approval	Date of PG-teacher Approval	No. of Ph.D. students Awarded	No. of Ph.D students registered	Total publication
01	Dr. A.R. Rai	Microbiology	M.Sc.,PhD	Ph.D/RRC/1970 (12/12/2014)	No/CDS/484 8 (13/03/2019)	01	03	40

#### List of PhD students awarded/registered from the centre

Sr. No	Name of Research Students	Topic of the research	Place of research work	Name of Supervisors	Date of registration	Status
01	Miss Shilpa PrakashraoMankar	Study on arsenic hyper accumulation by cyanobacterial consortia	P.G. Deptt. Microbiology, S.K.Porwal College Kamptee	Dr.K.Roy choudhury	13/07/2012	Awarded (10/07/2017)
02	Mr.Geetesh	PCR based charactererization of chromium removing	P.G. Deptt. Microbiology,	Dr.K.Roy	24/05/20	Awarded

	Shukla	cyanobacterial consortia	S.K.Porwal College Kamptee	choudhury	12	(21/09/2019)
03	Mrs. Shashi P. Jambhulkar	Evaluation of Antibacterial activity of lactobacillus and propionibacterium species against drug resistant salmonella species .	P.G. Deptt. Microbiology, S.K.Porwal College Kamptee	Dr.A.B. Ingle	12/07/2012	Awarded (12/05/2015)
04	Miss Neha A.Mupidwar	Serotyping Antimicrobial resistance &PCR amplification studies on E. Coli isolates from drinking water sources	P.G. Deptt. Microbiology, S.K.Porwal College Kamptee	Dr.A.B. Ingle	12/07/2012	Awarded 27/09/2017
05	Miss Sushmita Karmakar	Studies on viable but nonculturable bacteria from processed food item and Resuscitation	P.G. Deptt. Microbiology, S.K.Porwal College Kamptee	Dr.K.Roy choudhury	06/07/2012	Awarded 31/07/2020
06	Mr.Swapnil P. Magar	Studies on the production of biofuels and bioplastic from carbon dioxide and cotton seed oil by Ralstonia species	P.G. Deptt. Microbiology, S.K.Porwal College Kamptee	Dr.A.B. Ingle	31/01/2013	Awarded 10/07/2017
07	Ms. Deepti Ashok Bhabhra	Studies on the Effect of Metal Ions on Extrapolysacoride Production by Cyanobacteria Spieces under Stress Conditions"	P.G. Deptt. Microbiology, S.K.Porwal College Kamptee	Dr.K.Roy choudhury	05/12/2013	Awarded 31/07/2020
08	Mr. Sachin Yerpude	Studies on the production of microbial mats and its application in aquaculture	P.G. Deptt. Microbiology, S.K.Porwal College Kamptee	Dr.K.Roy choudhury	15/01/2014	Awarded 01/01/2021
09	Miss Shweta V.Deote	Phylogenetic analysis of bacterial isolates from chromium enriched soil	P.G. Deptt. Microbiology, S.K.Porwal College Kamptee	Dr.A.B. Ingle	16/02/2015	Awarded 01/09/2020
10	Miss Abha S. Manapure	Comparative Metagenomic Analysis of Rice (oryzasative) rhizosphere of different varieties from Bhandara District	P.G. Deptt. Microbiology, S.K.Porwal College Kamptee	Dr. Alok R. Rai	20/05/2019	Pursuing
11	Mr. Nishant Burde	Isolation Screening and characterization of cyanobacteria for biodegradation of	P.G. Deptt. Microbiology, S.K.Porwal College Kamptee	Dr. Alok R. Rai	28/01/2020	Pursuing

		organophosphate pesticides and their PGPR activity in paddy fields.				
12	Mr. Suraj V. Kombe	Phytochemical profiling of some selected ethnomedicinal plants and their clinical application	P.G. Deptt. Microbiology, S.K.Porwal College Kamptee	Dr. Alok R. Rai	08/03/2022	Pursuing

### Equipment available in Department of Chemistry and Microbiology:

Equipment available with	Generic Name of Equipment		Model, Make & year of purchase	Quantity	Remarks
Microbiology	01	PCR	Krytech GENI	2	Working
	02	Gel Documentation system	UVI-tech	1	Working
	03	Phase Contrast Microscope with photography system	Metzer	1	Working
	04	Microwave-oven	BioTech	1	Working
	05	Centrifuge	Remi	1	Working
	06	BOD Incubator	Remi	1	Working
	07	Rotary Vacuum Pump	BioTech	1	Working
	08	Autoclave	Remi	3	Working
	09	Hot air oven	BioTech	2	Working
	10	TLC Compartment	Remi	2	Working
	11	Two probe Electrometer	BioTech	2	Working
	13	Paper electrophoresis	BioTech	1	Working
	14	Medical research microscope	Metzer	1	Working
	15	Compound microscope	Metzer	1	Working
	16	UV-vis spectrophotometer	ELICO	2	Working
	17	Magnetic stirrer	Remi	3	Working
	18	Autoclave	Remi	2	Working
	10	Centrifuge	Remi	2	Working



	20	High speed centrifuge	Remi	2	Working
	21	Incubator	BioTech	3	Working
	22	BOD Incubator	BioTech	2	Working
	23	Oven	BioTech	1	Working
	25	Micro-oven	LG MC-7649DW	1	Working
	26	Colorimeter	ELICO	1	Working
<b>Department of Chemistry</b>	01	UV-vis Spectrophotometer (Double beam 190-1100 nm)	ELICO SL-210	01	Working
	02	UV-vis Spectrophotometer (Double beam 350-1100nm)	ELICO SL-177	01	Working
	03	Magnetic Stirrer@Temp Cont.	Remi 1MLH	06	Working
	04	Muffle Furnaces@1200 °C	BioTech	02	Working
	05	Centrifuge@ 5250rpm and 17000 rpm.	Remi R-8C	02	Working
	06	Homogenizer@8000 rpm	Remi 8000 rpm	01	Working
	07	Oil Bath@Temp. control	Neolab	01	Working
	08	Ultraonicator	PCi Analytics	01	Working
	09	Vacuum Oven	BioTech	01	Working
	10	Microwave Oven	LG MC-7649DW	01	Working
	11	Potentiometer	EQ-601& EQ-603	05	Working
	12	Colorimeter	CL-157	02	Working
	13	Shaker	BioTech	01	Working
	14	Hot Air Oven	BioTech	01	Working
	15	Digital Balance	Orange	05	Working
	16	One Pan Balance	Dona 160D & Dona 200D	02	Working
	17	Two Pan Balance	K-Roy	15	Working
	18	Conductivity Meter	Delux	05	Working

	19	Water Filter	Aquazen	01	Working
	20	pH Meter	DQ610	03	Working
	21	Heating Mantle	BHA	02	Working
	22	Melting point Apparatus	PEW	02	Working
	23	IR Lamp	Brite	02	Working
	24	Hot Plate	BioTech	02	Working
	25	Shimandzu Weighing Balance	AX200 and AUW220W	02	Working
	26	Water Bath	Mittal Enterprises	02	Working
	27	Vacuum Pump	Rohini1440rpm & Radalt1440 rpm	01	Working