

ANNUAL REPORT

2016-2017



GOVERNMENT COLLEGE OF ENGINEERING

&

CERAMIC TECHNOLOGY

73 A.C. Banerjee Lane, Kolkata 700 010, West Bengal, India

PREFACE

I, on behalf of all faculties and staff, welcome you heartily to the Government College of Engineering and Ceramic Technology (GCECT), Kolkata. I also congratulate you for choosing GCECT to reach the goal. This Institute (established on 3rd April, 1941), the then College of Ceramic Technology (Bengal Ceramic Institute) has been one of the oldest technological colleges in Kolkata and the only full-fledged college in India offering B. Tech, M. Tech. and Ph. D. programs in Ceramic Technology along with hands on trainings in traditional potteries and other ceramic products since its inception. The college has already completed 75 years of its glorious existence. The alumnus of the institute are well established in their professional career and spread all over the world. They are the flag bearers of the institute.

Initiating as a Diploma level institute, it was then elevated to a Degree college under Higher Education Department, Government of West Bengal and was affiliated to the University of Calcutta in the year 1962.

The institute has emerged as one of the best temples of learning and started transforming from mono-discipline institute to multi-discipline institute with the introduction of Information Technology and Computer Science & Engineering programs in 2000 and 2001 respectively. Now, the college is affiliated to Maulana Abul Kalam Azad University of Technology (MAKAUT), formerly West Bengal University of Technology since 2001.

Research & Development are an integral part of this institute of higher learning. The institute has good research activities in the under-graduate level. From 2006-2007, students from different background are reaping the benefit of M. Tech. program in Ceramic Technology. The introduction of M. Tech program in Ceramic Technology has enormously increased the scope & possibilities for research and development. Almost all teachers, students and scholars of the college are involved in research and development activities. M. Tech. program in Information Technology has also started its journey since 2012.

GCECT received World Bank assistance under Technical Education Quality Improvement Programme (TEQIP) Phase- I and successfully reaped tangible benefits by implementing various reform measures as per guidelines resulting into development and upgradation of various laboratories and infrastructure of the whole college in recent past.

The college also acquired one acre of land from adjacent West Bengal Small Industries Development Corporation Limited (WBSIDCL) to augment its infrastructure.

Recently, the college received prestigious NAAC grade 'A' accreditation, a certification of the quality of the institute in the national benchmark. As a consequence, the college received a substantial grant from Rashtriya Uchchar Shiksha Abhiyan (RUSA). The grant has been used for the construction of hostel and other infrastructure. Now-a-days, the college has been able to establish its proud position in the country. This college is not only providing latest technology oriented courses but also is equipped with good laboratory, library and other students' amenities. The students get the scope of being guided by renowned and eminent faculties to build their career.

All members of GCECT will put their best effort to ensure that the student of the institute receive the best training to become globally competitive professional with all human values to be useful for the society.

Prof. Krishnendu Chakrabarty
Principal
Govt. College of Engg. & Ceramic Technology

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Vision of the Institute

To cultivate excellence in various fields of engineering and technology by imparting core knowledge to the students and to transform the institution into a centre of academic excellence and advanced research apart from producing skilled technologists.

Mission of the Institute

- To impart high quality technical education that will produce globally competitive engineers & technologists.
- To inculcate entrepreneurial skill and leadership quality amongst potential students.
- To stress upon acquiring advanced knowledge and research acumen among faculties and students.
- To create compassionate, responsible and innovative global citizens.

(i) CT Department

Vision Statement:

To emerge as a world class centre for education and research in the field of Ceramics, Glass and allied materials to serve the Industry and the society at large.

Mission Statement:

- To generate an environment in the department for advanced research and innovation with a view to imparting quality teaching and training in the area of Ceramics, Glass and allied materials.
- To produce graduates with a strong foundation in the area of Ceramic and Glass Technology to cater to the needs of Industry, Academia and Research organization in India and abroad.
- To emphasize Institute-Industry interaction to make the students aware of real problems in the Industries and solutions thereof.
- To motivate the faculties for meeting the requirement of leaders in industry, academic & research institutes and society.

(ii) IT Department

Vision Statement:

The Department of Information Technology of this institute envisions itself to be in the top tier departments of the country that will be recognized for its technological advancement in teaching, learning, research and innovation and serve to address evolving global needs.

Mission Statement:

- To give high quality education to educate future leaders and contribute to the professional workforce in engineering and technology.
- To inspire learners to excel in research and innovation, collaborative activities, technologies and systems with a positive contribution to the society.

(iii) CSE Department

Vision Statement:

The Computer Science & Engineering department of this Institute is committed to become a centre of excellence to meet the sprouting global challenges by imparting education and research of highest quality and thus ensures to maintain its status as a pivotal or nodal agency or a nucleus of the overall technological growth in the domain of Computer Science.

Mission Statement:

- To present our student with up-to-date curricula and pedagogy in the computer science and thus ensure that they have a solid foundation in the core concepts, equip them with problem solving and decision making skills, and prepare them for lifelong learning in the discipline.
- To produce graduates that are knowledgeable, articulate, principled, innovative, confident, and able to think critically
- To provide for and encourages collegial, intellectual and academic growth of its faculty.
- To perform research that advances the state-of-the-art in computer science.
- To inculcates the values enshrined in the Constitution and demonstrate a sense of societal and ethical responsibility in all professional endeavors.

BASIC INFORMATION

1. Board of Governors of the College

1. Prof. Binay K. Dutta, Formerly Chairman, West Bengal Pollution Control Board (Educationist) --- Chairman
2. Prof. Mehtab Alam, Jamia Milla University, New Delhi (UGC Nominee) -----Member
3. Dr. Arup Kumar Chattopadhyay, MD, National Refractories (Educationist) -----Member
4. The Director of Technical Education, West Bengal (Govt. nominee) -----Member
5. The Registrar, Maulana Abul Kalam Azad University of Technology (University Nominee) -----Member
6. Prof. Bimal Kumar Roy, Formerly Director, ISI, Kolkata (Educationist) -----Member
7. Dr. Rituparno Sen, Professor & HOD, Ceramic Technology, Govt. College of Engg. & Ceramic Technology, Kolkata (Faculty nominated by the Principal) -----Member
8. Mr. Ranjan Ray, Associate Professor of Ceramic Technology, Govt. College of Engg. & Ceramic Technology, Kolkata (Faculty nominated by the Principal) ---Member
9. The Principal, Govt. College of Engg. & Ceramic Technology, Kolkata -----Ex-Officio
Member
Secretary

2. Administrative and Academic Positions

1. Principal : Prof. (Dr.) Krishnendu Chakrabarty
2. Controller of Examinations : Dr. Krishnendu Dutta
3. HOD of Ceramic Technology : Prof. (Dr.) Rituparna Sen
4. HOD of Information Technology : Dr. Mousumi Maitra (Majumdar)
5. HOD of Computer Science & Engineering : Dr. Kalpana Saha (Roy)
6. HOD of Basic Science, Humanities & Engineering : Dr. Debdarpan Khan
7. Registrar : Mr. Jayanta Kumar Chowdhury
8. Accounts Officer : Mr. Chandra Sekhar Das
9. Librarian : Mr. Prajat Baran Patra
10. Head Clerk : Mr. Manash Kumar Roy
11. In-Charge of Academic Section : Mr. Swapan Kumar Seal
12. Advisor of Training & Placement Cell : Mr. Prithwijit Guha

3. Faculty Members:

(i) Faculties

<i>Ceramic Technology Department</i>			
	<i>Name</i>	<i>Designation</i>	<i>Subject</i>
1.	Dr. Saikat Maitra (on Lien as the Vice-Chancellor of Maulana Abul Kalam University of Technology)	Professor	Ceramic Technology
2.	Dr. Rituparna Sen	Professor	Ceramic Technology
3.	Mr. Ranjan Roy	Associate Professor	Chemical Engineering
4.	Dr. Srimanta Kumar Patra	Associate Professor	Ceramic Technology
5.	Mr. Ram Chandra Das	Associate Professor	Ceramic Technology
6.	Dr. Kaberi Das	Assistant Professor	Ceramic Technology
7.	Dr. Tapas Kumar Bhattacharya	Assistant Professor	Ceramic Technology
8.	Dr. Barun Kumar Sanfui	Assistant Professor	Ceramic Technology
<i>Information Technology Department</i>			
	<i>Name</i>	<i>Designation</i>	<i>Subject</i>
1.	Dr. Mausumi Maitra (Majumdar)	Associate Professor	Information Technology
2.	Mr. Paramita Dey	Assistant Professor	Information Technology
3.	Mr. Ritwik Mondal	Assistant Professor	Information Technology
4.	Dr. Somdatta Chakravorty	Assistant Professor	Information Technology
5.	Mrs. Shyama Mondal	Assistant Professor	Information Technology
6.	Mr. Pranay Adak	Assistant Professor	Information Technology
7.	Mr. Atanu Kumar Paul	Assistant Professor	Information Technology
<i>Computer Science & Engineering Department</i>			
	<i>Name</i>	<i>Designation</i>	<i>Subject</i>
	Dr. Kalpana Saha (Roy)	Assistant Professor	Computer Sc. & Engg.
	Mr. Bimal Pal	Assistant Professor	Computer Sc. & Engg.
	Mr. Soumit Chowdhury	Assistant Professor	Computer Sc. & Engg.
	Mrs. Sohini Dasgupta (On Leave)	Assistant Professor	Computer Sc. & Engg.
	Mr. Partha Ghosh	Assistant Professor	Computer Sc. & Engg.
	Mr. Ranjit Kumar Mandal	Assistant Professor	Computer Sc. & Engg.
<i>Basic Science, Engineering & Humanities Department</i>			
	<i>Name</i>	<i>Designation</i>	<i>Subject</i>
	Dr. Krishnendu Chakrabarty	Professor	Electrical Engg.
	Dr. Kabita Das	Assistant Professor	Electrical Engg.
	Dr. Pinaki Mukherjee	Assistant Professor	Electronics
	Dr. Debdarpan Khan	Associate Professor	Geology
	Dr. Saibal Ray	Associate Professor	Physics
	Dr. Rajkumar Chakraborty	Associate Professor	Physics
	Mr. Prasenjit Paul	Assistant Professor	Physics
	Dr. Krishnendu Dutta	Assistant Professor	Mathematics
	Dr. Debdulal Maity	Assistant Professor	Chemistry
	Mrs. Indrani Nag Chaudhuri	Assistant Professor	Economics
	Mr. Partha Halder	Assistant Professor	Mechanical Engg.

(ii) Part Time Teachers

<i>Ceramic Technology</i>		
1.	Dr. M. S. Dutta	Ceramic Technology
2.	Mr. Pappu Halder	Ceramic Technology
<i>Information Technology</i>		
1.	Miss. Shampa Mahato	Information Technology
2.	Miss. Maumita Maity	Information Technology
3.	Mr. Sudip Kuila	Information Technology
<i>Computer Science & Engineering</i>		
1	Mr. Bishwarup Das	Computer Science & Engineering
2	Mr. Bijoy Kumar Mandal	Computer Science & Engineering
3	Mr. Rajib Biswas	Computer Science & Engineering
4	Mr. Shah Nawaz Shams	Computer Science & Engineering
5	Mrs. Rima Bhowmick	Computer Science & Engineering
6	Mrs. Sucharita Mondal	Computer Science & Engineering
7	Mrs. Pallavi Pyne	Computer Science & Engineering
8	Mrs. Amrita Biswas	Computer Science & Engineering
<i>Basic Science, Engineering & Humanities</i>		
1.	Mrs. Sonali Sarkar	Humanities
2.	Mrs. Ipsita Pathak	Communicative English
3.	Mr. A.K. Majumdar	Mech. Engg.

(iii) Visiting Teachers

1.	Dr. H.S. Maiti, INAE Distinguished Professor, Former Director, CSIR-CGCRI, Kolkata
2.	Dr. S.K. Banerjee
3.	Prof. Sankar Ghatak
4.	Dr. Gora Ghosh
5.	Mr. Kuntal Mondal
6.	Mrs. Aditi Bhattacharya
7.	Dr. Santanu Bose
8.	Mr. Prabir Mandal
9.	Mr. Ram Pratap Chowdhury
10.	Mrs. Shreoshi Basu
11.	Mr. Utpal Kumar Roy
12.	Mr. Somnath Banerjee
13.	Mr. Kaushik Chakraborty
14.	Dr. P.N. Dutta

4. Academic Programmes Pursued:

B. Tech and M. Tech Programmes in the following disciplines:

- i) Ceramic Technology [*B. Tech. and M. Tech. Programmes*]
- ii) Information Technology [*B. Tech. and M. Tech. Programmes*]
- iii) Computer Science and Engineering [*B. Tech. Programme*]

5. Student Profile:

A. Sstudents on Roll:

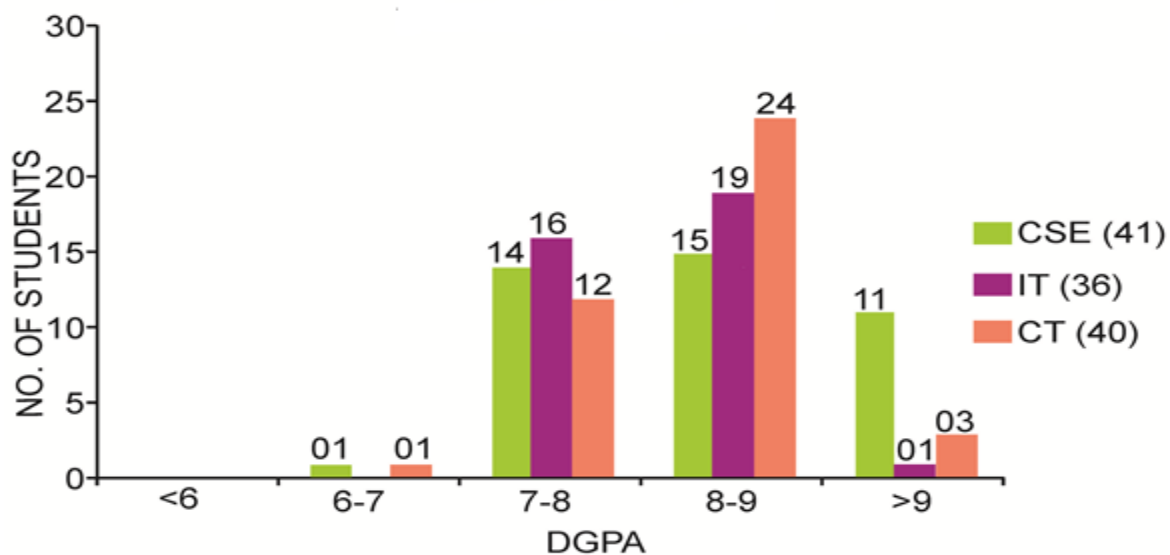
a) **B. Tech Programme in the following disciplines:**

Discipline	First Year	Second Year	Third Year	Fourth Year
Ceramic Technology	33	32	36	40
Information Technology	34	39	43	37
Computer Science and Engineering	36	47	39	42

b) **M. Tech Programme in the following disciplines:**

Discipline	First Year	Second Year
Ceramic Technology	02	09
Information Technology	15	17

B. Students Result:



6. Sponsored/ Consultancy projects carried out:

Funding Agency	Type of Project	Project Title	Role in Project	Grant (Rs.)	Duration
TSD-DST, New Delhi	Major Research Project	Development of CO ₂ -Selective Ceramic Membrane for Separation of CO ₂ from Flue Gas and Natural gas	Dr. Saikat Maitra, Professor: Principal Investigator & Dr. B.K. Sanfui, Assistant Professor: Co-investigator	1 crore 13 lacs	2016-2019
TSD-DST, New Delhi	Major Research Project	Development of Abrasion Resistant Ceramics and Insulating Refractories from Coal Ash	Dr. Saikat Maitra, Professor: Principal Investigator	63,00,000	2016-2019
Walter-Craven Ltd	Minor Research Project	Studies on suitability of soil samples for hollow bricks/blocks	Dr. Saikat Maitra, Professor: Principal Investigator	1,00,000	2016-2018
MSME, Durgapur	Minor Research Project	Design Modification of DD Kiln for improving its Thermal Efficiency an Abatement of Pollution	Dr. Saikat Maitra, Professor: Principal Investigator	4,00,000	2016-2018
TIFAC-DST, New Delhi	Major Research Project	Technology Gap Analysis for the Bangabhumi Cluster of Refractories Association, Kulti, WB	Dr. Saikat Maitra, Professor: Principal Investigator	12,00,000	2016-2019
BRNS-DAE	Major Research Project	A network project entitled : Embedding Segmentation of PET Images for Medical Applications in Brain Disorders Duration	Co-PI : Dr. Mousumi Maitra, Associate Professor, GCECT	25,84,975	2016-2019
DST, New Delhi	Major Research Project	Development of algorithms for spectral unmixing and sub pixel classification of hyperspectral image data	Dr. Somdatta Chakravorty, Assistant Professor: Principal Investigator	36,12,000	2016-2019
UGC	Major Research Project	Digital image processing of hyperspectral data for pattern recognition and change detection of saline blanks	Dr. Somdatta Chakravorty, Assistant Professor: Principal Investigator	12,08,000	2015-2018
DST, New Delhi	Major Research Project	Development of insulating refractories and abrasion resistant ceramics from coal ash	Mr. R.C. Das, Associate Professor and Prof. Saikat Maitra	61.52 lacs	2016-2019
UGC	Minor Research Project	Studies on the effect of fly ash addition on the properties of porcelainised ceramics	Dr. T.K. Bhattacharya, Assistant Professor: Principal Investigator	4,75,000	2015-2017
DST, New Delhi	Major Research Project	High Strength Light Weight Building Blocks from Agricultural Waste	Dr. B.K. Sanfui, Assistant Professor: Principal Investigator & Dr. S.K. Patra, Associate Professor: Co-investigator	60,00,450	2016-2019
SERB-DST, New Delhi	Major Research Project	Development of pre/in-situ CNT reinforced MgAl ₂ O ₄ spinel matrix composites	Dr. B.K. Sanfui, Assistant Professor: Principal Investigator	30,06,000	2017-2020

Funding Agency	Type of Project	Project Title	Role in Project	Grant (Rs.)	Duration
UGC	Minor Research Project	Study of Function Space Topology on Soft Topological Spaces	Dr. Krishnendu Dutta, Assistant Professor: Principal Investigator	250000	2017-2019
WBDST-FIST	Major Research Project	Development of Distributed Computing Lab	Mrs. Paramita Dey, Assistant Professor: Principal Investigator	9,00,000	2015-2018
WBDST-FIST	Major Research Project	Improvement of Science & Technology Infrastructure in Higher Educational Institutions	Mr. Atanu Paul, Assistant Professor: Principal Investigator	9,00,000	2015-2018

7. Ph. D. supervision by the Faculty Members of the College:

Sl. No.	Name of the student with qualification	Title of the thesis	University where registered	Name of the Supervisor
1.	Mr. Praveen K. Singh, M. Tech (Ceramic Technology)	Fabrication and characterization of sol-gel derived TiO ₂ thin film	Submitted thesis in Jadavpur University	Dr. S. Maitra, Professor
2.	Mr. Ram Chandra Das, M. Tech (Ceramic Technology)	Role of MgO/Al ₂ O ₃ molar ratios and other parameters on the kinetics of spinelization.	Jadavpur University	Dr. S. Maitra, Professor and Dr. R. Sen, Professor
3.	Mr. Uday Singh Yadav, M. Tech (Electrical Engg.)	Modeling of hysteresis non linearity of piezoelectric transducers	University of Calcutta	Dr. S. Maitra, Professor
4.	Mr. Jagram Singh Yadav, M.Sc (Physics)	Studies on the Kinetics of Thermal Decomposition of Indian magnesites.	University of Calcutta	Dr. S. Maitra, Professor
5.	Ms. Manali Mukherjee, M.Tech. (IT)	Studies on some imaging algorithms and their implementations on FPGA	University of Calcutta	Dr. M. Maitra, Associate Professor
6.	Kamaruzzman, M.Tech. (IT)	Bio-informatics	MAKAUT (applied for)	Dr. M. Maitra, Associate Professor
7.	Mr. Dibyendu Shee, M.Sc. (Physics)	Studies of compact stars in general relativity	IEST, Shibpur	Dr. S. Ray, Associate Professor
8.	Mr. Amit Das, M.Sc. (Physics)	Studies of compact stars in alternative gravity	IEST, Shibpur	Dr. S. Ray, Associate Professor
9.	Mr. Shounak Ghosh, M.Sc. (Physics)	Gravastars in GTR	IEST, Shibpur	Dr. S. Ray, Associate Professor
10.	Mr. Abdul Aziz, M.Sc. (Physics)	Homotopy Theorem in Astrophysical system	IEST, Shibpur	Dr. S. Ray, Associate Professor
11.	Mr. Sourav Roy Chowdhury, M.Sc. (Physics)	Homotopy Perturbation Method and Strange Stars	IEST, Shibpur	Dr. S. Ray, Associate Professor
12.	Mr. Debarata Deb, M.Sc. (Physics)	Homotopy Perturbation Method and Compact Stars	IEST, Shibpur	Dr. S. Ray, Associate Professor
13.	Ms. Sreya Karmakar, M.Sc. (Physics)	Worm Hole Physics under General Relativity	W.B. State University	Dr. S. Ray, Associate Professor
14.	Ms. Ipshita Chakraborty, M.Sc. (Physics)	Dark Energy and Dark Matter	W.B. State University	Dr. S. Ray, Associate Professor
15.	Nabin Chandra Biswas, M.Sc. (Maths.)	Study of some problems of soft topological spaces	IEST, Shibpur	Dr. K. Dutta, Assistant Professor
16.	Arunava Mukhopadhyay	Design optimization of wideband microstrip antenna	MAKAUT	Dr. P. Mukherjee, Assistant Professor

8. Research/Review papers published in reputed Journals:

- 1) **T.K. Bhattacharya**, "Sol Gel Combustion Synthesis of Nano Crystalline α -Al₂O₃ in relation with Fuel to Oxidizers mole ratio" *Scientific Voyage*, **2**, Issue - 1 (February, 2016)
- 2) **S. Chakravorty** and D.D. Sinha, "Development of Higher Order Model for Non- Linear Interactions in Hyperspectral Data of Mangrove Forests", *Current Science*. **111**, 1055 (2016)
- 3) **P. Mukherjee**, "Bandwidth enhancement of microstrip patch antenna using Curve fitting based Differential Evolution and Cuckoo Search optimization - a comparative study", *Information Technology, Electronics and Mobile Communication Conference (IEMCON), 2016 IEEE 7th Annual*, DOI: 10.1109/IEMCON.2016.7746346
- 4) **P. Ghosh**, S.K. Das, K. Mali, "Comparative Analysis of Proposed FCM Clustering Integrated Enhanced Firefly-Optimized Algorithm (En-FAOFCM) for MR Image Segmentation and Performance Evaluation", *J. Image Proc. & Patt. Recog. Prog.* **3**, 32 (2016)
- 5) **P. Paul**, "Cosmological Correlation in the inflationary Universe", *Scientific Voyage*, Vol. 2, Issue 1 (2016).
- 6) **P. Haldar**, G. Sutradhar, N. Modak; "Mechanical Characterization of Natural Fibre Reinforced Thermoplastic Composites", *Proceedings of the National Conference on Advances in Thermal Engineering*, Jadavpur University, India, Page No: 199-201, September (2016).
- 7) **P. Haldar**, G. Sutradhar, N. Modak; "Comparative Evaluation of Mechanical Properties of Sisal-Epoxy Composites With and Without addition of Aluminium Powder", *Materials Today: Proceedings* **4**, Page No: 3397-3406 (2017).
- 8) **P. Dey**, M. Ganguly and S. Roy, "Network centrality based team formation: A case study on T-20 cricket", *Applied Computing and Informatics*, Elsevier, Vol. **13**, Pages 161-168 (2017).
- 9) **P. Dey**, S. Pyne and S. Roy, "Information spreading in Online Social Networks: A case study on Twitter network", *Proceedings of the 18th ACM International Symposium on Mobile Ad Hoc Networking and Computing*, 978-1-4503-4912-3, Chennai, India (2017)
- 10) **P. Dey** and S. Roy, "A comparative analysis of different social network parameters derived from Facebook profiles", In S. C. Satapathy, et al. (Eds.), *Proceedings of the Second International conference on Computer and Communication Technologies. Advances in Intelligent Systems and Computing*, Vol. 379 (2016).
- 11) **P. Dey**, M. Ganguly, P. Sengupta and S. Roy, "Small World Network Formation and Characterization of Sports Network", In S. C. Satapathy, et al. (Eds.), *Proceedings of the 5th International Conference on Frontiers in Intelligent Computing: Theory and Applications : FICTA 2016*, Volume 1, 2017, Springer.
- 12) A. Sarkar, S. Chattopadhyay, **P. Dey** and S. Roy, "The importance of seed nodes in spreading information in social networks: A case study," 9th International Conference on Communication Systems and Networks (COMSNETS), Bengaluru, ieeexplore, pp. 395-396 (2017).
- 13) S. Kundu, D. Chatterjee and **K. Chakrabarty**, "Bifurcation behavior of PWM controlled DC series Drive", *IET Power Electronics*, Vol.10, Issue-3, PP-279-291 (2017).
- 14) **S. Chakravorty** and D. Sinha, "Development of Higher Order Model for Non-Linear Interactions in Hyperspectral Data of Mangrove Forests", *Current Science*, Vol. 111, No. 6, pp 1055-1062 (2016).
- 15) S.K. Maurya, Y.K. Gupta, B. Dayanandan and **S. Ray**, "A new spherically symmetric anisotropic compact star model", *Eur. Phys. J. C* **76**, 266 (2016).

- 16) U. Mukhopadhyay and **S. Ray**, ``N.C. Rana: Life and His Contributions in Astrophysical Science'' *Ind. J. Hist. Sci.*, **51**, 513 (2016).
- 17) S.K. Maurya, Y.K. Gupta, **S. Ray** and V. Chatterjee, ``Relativistic electromagnetic mass models in spherically symmetric spacetime'' *Astrophys. Space Sci.* **361**, 351 (2016).
- 18) A.K. Yadav, A.T. Ali, **S. Ray**, F. Rahaman and I.H. Sardar, ``C-field cosmology: revisited'', *Res. Astron. Astrophys.* **16**, 188 (2016).
- 19) A. Das, F. Rahaman, B.K. Guha and **S. Ray**, ``Compact stars in $f(R,T)$ gravity'' *Eur. Phys. J. C* **76**, 654 (2016).
- 20) S.K. Maurya, Y.K. Gupta, **S. Ray** and D. Deb, ``Generalized model for anisotropic compact stars'', *Eur. Phys. J. C* **76**, 693 (2016).
- 21) A. Das, S. Ghosh, B.K. Guha, S. Das, F. Rahaman and **Saibal Ray**, ``Gravastars in $f(R,T)$ gravity'', *Phys. Rev. D*, **95**, 124011 (2017) .
- 22) S.K. Maurya, Y.K. Gupta and **Saibal Ray**, ``All spherically symmetric charged anisotropic solutions for compact star'', *Eur. Phys. J. C*, **77**, 360 (2017).
- 23) D. Shee, S. Ghosh, F. Rahaman, B.K. Guha and **Saibal Ray**, ``Compact star in pseudo-spheroidal space-time'', *Astrophys. Space Sci.*, **362**, 114 (2017).
- 24) S. Ghosh, F. Rahaman, B. Guha and **Saibal Ray**, ``Gravastars with higher dimensional spacetimes'', *Phys. Lett. B* **767**, 380 (2017).
- 25) S.K. Maurya, Y.K. Gupta, **S. Ray** and D. Deb, ``A new model for spherically symmetric charged compact stars of embedding class 1'', *Eur. Phys. J. C* **77**, 45 (2017).

9. Research papers presented in National/ International Conferences:

- 1) Kamarujjaman, S. Chakraborty and **M. Maitra**, "An Unsupervised Modified Spatial Fuzzy C-mean Method for Segmentation of Brain MR Image", *5th International Conference on Advances in Computing, Communications and Informatics, LNMIIT, Jaipur, India*, Sep. 21-24, 2016.
- 2) **S. Chakravortty**, D. Ghosh and D.D. Sinha, "A Dynamic Model to Recognize Changes in Mangrove Species in Sunderban Delta using Hyperspectral Image Analysis" in *Proceedings of International Conference on Advanced Computing, Networking and Informatics in Progress in Intelligent Computing Techniques: Theory, Practice, and Applications, AISC, Springer -Sa, P.K., Sahoo, M.N., Murugappan, M., Wu, Y., Majhi, B. (Eds.), NIT Rourkela, India (2016)*.
- 3) **S. Chakravortty**, P. Kumar and M. Patra, "Sub Pixel Mapping of Hyperspectral Data for Mangrove Species Mapping in the Sunderban Biosphere Reserve of West Bengal, India" in *Proceedings of ISRS - ISG Symposium on Recent Advances in Remote Sensing and GIS with Special Emphasis on Mountain Ecosystems December*, Indian Institute of Remote Sensing, Dehradun, India (2016).
- 4) **S. Chakravortty** and S. Das, "Integration of High Spectral and High Spatial Resolution Image Data for Accurate Target Detection", *Proceedings of International Conference on Computational Intelligence, Communications and Business Analytics, CCIS, Springer, Calcutta Business School, Kolkata (2017)*.
- 5) S. Ghosh and **B.K. Sanfui** "Fabrication and characterization of organoclay reinforced polymer matrix composites films", *1st Regional Science and Technology Congress-2016, Presidency Division held on 13-14th November, 2016 at NITTTR, Kolkata (Adjudged as outstanding paper)*
- 6) S. Ghosh and **B.K. Sanfui** "Fabrication and characterization of organoclay reinforced polymer matrix composites films", *24th West Bengal State Science and Technology Congress-2017, Presidency Division held on 28 February – 2 March, 2017 at Science City, Kolkata (Adjudged as Best paper)*
- 7) **P. Paul**, 'Cosmological Correlation in the inflationary Universe', International seminar, Calcutta Mathematical Society, 10th December 2016.
- 8) **P. Paul**, 'Scalar fluctuation in the early Universe' UGC sponsored National seminar, K.K Das College Kolkata, 30th January 2017.
- 9) **D. Maity**, 'Synthesis, characterization of some new complexes of Oxim Schiff Base ligands', Indian Chemical Industries: Retrospect and Prospects, Jogesh Chandra Chowdhury College, Kolkata, 27 February 2017.

10. Invited lecture/talk in National/ International Conferences/ Institutes:

1. **K. Chakrabarty**, Delivered invited lecture on “Power Electronics” at JIS college of Engineering on 9th September 2016.
2. **K. Chakrabarty**, Delivered invited lecture on “Nonlinear dynamics and chaos in Power electronics circuits” at Pailan College of Engineering and Management on 22nd July 2016.
3. **K. Dutta**, Delivered invited talk on “Performance towards Quality Enhancement – an Accreditation Oriented Enterprise” at Habra Shri Chatinya College on 24th May 2016.
4. **S. Ray**, Delivered invited lecture on “Accelerating Universe: Role of Dark Energy”, at National workshop on trends in astrophysics and cosmology, Aliah University, Kolkata, W.B. (27-28 Sept. 2016)
5. **S. Chakravorty**, Delivered invited talk on “Remote Sensing, GIS and Application to Ground Water Studies” at Centre for Groundwater Studies for the training program to Engineers of PHED, Govt. of West Bengal for 4 batches on 20th June, 27th June, 4th July and 11th July, 2016.
6. **S. Chakravorty**, Delivered invited talk on “Hyperspectral Data in Mangrove Forest Management” in Refresher Course organized by Calcutta University on 28th February, 2017.

11. Book Chapter Published/Accepted:

- 1) M. Mukherjee, Kamarujjaman and **M. Maitra**, “Application of Biomedical Image Processing in Blood Cell Counting using Hough Transform”, *Advanced Methods for Complex Network Analysis (Edited by Natarajan Meghanathan), IGI Global, USA, Ch. 15, pp. 300515-061645* (2016).
- 2) Kamarujjaman, M. Mukherjee and **M. Maitra**, “FPGA-Based Re-Configurable Architecture for Window-Based Image Processing”, *Multi-Core Computer Vision and Image Processing for Intelligent Applications, (Edited by Mohan S. and Vani V.), IGI Global, USA* (2016).
- 3) Kamarujjaman, M. Mukherjee and **M. Maitra**, “FPGA-Based Re-Configurable Architecture for Window-Based Image Processing”, *Multi-Core Computer Vision and Image Processing for Intelligent Applications, (Edited by Mohan S. and Vani V., (Al Yamamah University, Kingdom of Saudi Arabia)), IGI Global, USA, ch. 1, pp. 1-46* (2016).
- 4) **P. Dey** and **K. Dutta**, “Social Network Analysis of Different Parameters Derived from Realtime facebook Profiles”, IGI Global (2017).
- 5) **S. Chakravorty** and A. Bhondekar, “Spatial and Spectral Quality Assessment of Fused Hyperspectral and Multispectral Data” in *Lecture Notes Computational Vision*, Valentina Emilia Balas and Jude Hemanth (Eds): Biologically Rationalized Computing Techniques for Image Processing Applications, Springer Vol. 25,978-3-319-61315-4, 434690_1_En (7) (2017).

12. Research Collaboration:

Faculty members of the Institute have formal and informal collaboration with reputed institutions/universities at national as well as international level for Postgraduate, Project, Ph.D. programmes and Patent. The names of such institutes/universities are mentioned below:

1) Dr. M. Maitra, Associate Professor

a. National

- Dept. of IT, A. K. Choudhury School of Information Technology, Calcutta University
- Dept. of IT, West Bengal University of Technology

2) Dr. S. Chakravorty, Assistant Professor

a. National

- School of Oceanographic Studies, Jadavpur University

3) Dr. S. Ray, Associate Professor

a. National

- Dept. of Mathematics, Jadavpur University
- Dept. of Physics, Indian Institute of Engineering Science & Technology
- Dept. of Physics & Mathematics, Aliah University
- Dept. of Applied Mathematics & Statistics, Calcutta University
- Dept. of Physics, Aligarh Muslim University
- Dept. of Mathematics, Nagpur University

b. International

- Milwaukee School of Engineering, USA
- Simon Fraser University, Canada
- APC laboratory, France
- Gh. Asachi Technical University, Romania
- Nankai University, China
- Sterlitamak State Pedagogical Academy, Russia
- Joint Institute for Nuclear Research, Russia
- University of Aberdeen, UK

13. Seminars/ Workshops/Conference organized by the College:

Sl. No	Convener	Title	Granting Agency	Date
1.	Prof. Saikat Maitra	Workshop on Technology Gap Analysis in MSME Refractory Sectors	Bangabhumi Cluster of Refractory Association, Asansol	20th July, 2016
2.	Dr. Somdatta Chakravortty	Workshop on Ethical Hacking	Computer Society of India	12 th August, 2016

14. Details of participation in Seminars/ Workshops/ Conferences:

- 1) **R.C. Das**, Phase Transformation and product Characterization, Jadavpur University from 4-5 October, 2016.
- 2) **S. Chakravortty**, State Student Branch Coordinator of Computer Society of India, West Bengal (2016-17)
- 3) **S. Chakravortty**, Convener of Regional Students Convention of Computer Society of India, MCKV Institute of Engineering, Liluah, Howrah (August, 2016)
- 4) **B. Sanfui**, One day workshop on Nanoscale materials properties of advanced materials on 9th November, 2016 jointly organized by CGCRI, Hysitron India Pvt. Limited and Electron Microscopy Society (Eastern Zone-Kolkata) Chapter at CGCRI, Jadavpur
- 5) **B. Sanfui**, Two days workshop on "Materials characterization techniques" on 4-5th October, 2016 organized by CoE-TEQIP Phase-II, Jadavpur University, Kolkata-700032, West Bengal, India
- 6) **P. Paul**, 'One day workshop on 'Document Preparation using Latex' held at MCKVIE on 24 September, 2016.
- 7) **R.K. Chakraborty**, 'Discussion meeting on Percolation', SN Bose National Centre for Basic Science, Kolkata, 23-24 January 2017.
- 8) **Bishwarup Das**, 'A Short Term Training Programme on Data Structures and Algorithms' organised by NITTTR, Kolkata, 4 -15 July 2016.
- 9) **S. Chakravortty**, "Training cum Workshop for Network Program on Imaging Spectroscopy and Applications", organized by Department of Science and Technology, Govt. of India from 20-24 December, 2016.
- 10) **R.K. Chakraborty**, "Recent advances in research of statistical physics", Department of Physics, Scottish Church College, 25-28 July, 2017.

15. Award / recognition of the faculty Members

1) **Somdatta Chakravortty:**

Assistant Professor of Information Technology has been awarded Ph.D. (Tech) degree on Image Processing in 2016 from the department of Computer Science & Engineering, University of Calcutta.

2) **Ashoke Kumar Majumdar:**

Part-Time Teacher of Mechanical Engineering has completed M. Tech. in Ceramic Technology in 2017 from Government College of Engineering and Ceramic Technology.

16. Class rooms refurbished:

All the classrooms of the institutes have been provided with LCD projector and computer facilities for imparting ICT enabled teaching to the students.

17. New system of teaching introduced:

Teachers are encouraged to take classes in presentation mode in addition to normal method of teaching.

18. Laboratories renovated:

Unit operation lab, Refractory lab and Glass lab, Engineering Drawing Lab.

19. New laboratories established:

Distributed computing laboratory having 102 PCs with internet connection.

20. National Service Scheme (NSS):

Under the supervision of the NSS unit of the college regular classes were held focusing on the burning issues of the society and environmental aspects for the students. Apart from these NSS unit has also guided students for the plantation program. Additionally the unit has also organized a free health checking camp for the employees on 22/06/2016 within the college campus.

21. Spoken Tutorial programme:

Under the initiative of Dr. R.K. Chakraborty, FACULTY Coordinator, in collaborative with I.I.T., Bombay an online spoken tutorial course is running in the college. At present the students of 2nd and 3rd year CSE, 2nd year IT and 4th year CT are taking this course.

22. Colloquium organized in the college:

Under the head of the usual Colloquium, a special lecture entitled '*Towards all optical packet switching: Designing polynomial size optical priority queues*' by Prof. Amitava Datta, University of Western Australia and University of Freiburg was organized on 29 November 2016.

23. Workshop on Public Financial Management System (PFMS):

A workshop on PFMS has been arranged under the Coordinatorship of Dr. Krishnendu Datta on 20 January 2017 for the faculty members of different Government Colleges of West Bengal. As an expert of the workshop was Dr. Suchandra Biswas, Bankim Halder College.

24. National Institutional Ranking Framework (NIRF):

Under of Prof. Atanu Paul, Nodal Officer, uploading of several data is in progress which includes (1) No. of faculties and their details, (2) Admission status of the students, (3) Placement and higher studies status of the students, (4) Financial data, (5) Sponsored projects and Consultancies, (6) Availability of facilities like Lift, Fire safety, Water reservoir etc.

25. The College journal: *Scientific Voyage*

A quarterly research journal published in the college under an editorial board with national and international experts in the fields. [URL: scientificvoyage.in]

26. Rashtriya Uchchar Shiksha Abhiyan (RUSA):

Under the Coordinatorship of Dr. Krishnendu Datta the college has been received Rs. 50 lacs as RUSA grant for the year 2016-17. The utilization of RUSA grant is as follows: (1) Network and Server upgradation by WEBEL, (2) Implementation of fire fighting system and hence construction of water reservoir for fire hydrant, pipeline installation etc., and (3) Renovation of the Mechanical Workshop Shed. Administrative approval of an amount of Rs. 12,795,450.00 of which Rs. 7,409,148.00 has been released in 2016-17 as matching grant for construction of a Boys' Hostel under the RUSA project. The construction of the builder for Boys' Hostel is in progress.

27. Placement status:

(i) **Ceramic Technology** :- 90% of students placed in the following industries -----

SAIL, MECON, Jindal South West Ltd., BHEL, INDAL, Grindwell Norton, TRL Krosaki Ltd., Nilachal Refractories, Somany Tiles Ltd., Bell Ceramics, Epcos (Germany) Ferrites, Samtel India, St Gobin Glss (France), Borosil Glass, RAK Ceramics, Vizag Steel Plant MECON, ESSAR India, Hindustan Copper, Carborundum Universal, OCL India, Vesuvius Ltd. (UK), H.R. Johnson India Ltd., Birla NGK Insulators, Cosmo Ferrite Ltd., Phillips India, Asahi Float Glass, Terrecid, Orind China, AI Nadha (Oman), Goa Glass Fiber, Vedanta Group, NALCO, TISCO, Nataraj Ceramics, Foseco India Ltd., Nitco Tiles, Kohler, La Opala Glass, Arcelor Mittal, Indo flogate.

(ii) **Information Technology and Computer Science & Engineering**:- 50% of students placed in the following industries -----

Cognizant, IBM, Cap Gemini, Tata Elexis, Info Tech, Sierra Atlantic, Ramco System, Pricewater house, Infosys, Mahindra Satyam, HCL, HP, SAP India, Honeywell, Hitachi, Wipro, Tech Mahindra, TCS, Subex, Keane, Microsoft etc.

28. Vertical mobility

20% of the students have taken admission in the following Institute/University for pursuing M.S. / M. Tech./ Ph.D. programmes ----- IIT-Mumbai, IIT-Kharagpur, IIT-Kanpur, IISC-Bangalore, Calcutta University, Jadavpur University, CGCRI.

29.Profile of the supporting staff of the college:		
1.	Mr. Jayanta Kr. Chowdhury	<i>Registrar</i>
2.	Mr. Chandra Sekhar Das	<i>Accounts Officer & DDO (WBA & AS)</i>
3.	Mr. Prajat Baran Patra	<i>Librarian</i>
4.	Mr. Manash Kr. Roy	<i>Head Clerk</i>
5.	Mr. Sujan Mukherjee	<i>P.A. to Principal</i>
6.	Mr. Swapan Kr. Seal	<i>Typist (Grade-I)</i>
7.	Mr. Rajib Chakraborty	<i>Technical Assistant</i>
8.	Mr. Rahul Mitra	<i>Fitter</i>
9.	Mr. Samir Biswas	<i>Storekeeper</i>
10.	Mr. Jiban Chandra Dey	<i>Lab Attendant</i>
11.	Mrs. Jhunu Rani Pramanick	<i>Peon</i>
12.	Mr. Rakhil Sil	<i>Peon</i>
13.	Mr. Soumya Chatterjee	<i>Peon</i>
14.	Mr. Jiwat Kr. Rajbhar	<i>Durwan</i>
15.	Mr. Birbal Das	<i>Durwan</i>
16.	Miss. Suman Jamadarni	<i>Sweeper</i>