

## Biodata

### 1. General information

<b>Name (in Capital Letters)</b>	JYOTSNA KUMAR MANDAL		
<b>Date of Birth (Day/Month/Year)</b>	08-08-1960		
<b>Correspondence Address</b>	A502 Green Valley Housing Complex, Kaikhali Chiriamore, Near New Basanta Sweets, Kolkata 700136, West Bengal, India		
<b>Permanent Address</b>	Vill- Nerakopa, P.O. – Raskundu, PS-Garhbeta, Dist.- Midnapur West, West Bengal, Pin-721127		
<b>Birth place</b>	Vill- Nerakopa, P.O. Raskundu, PS-Garhbeta, Dist.- Paschim Medinipur (Jangalmahal)		
<b>Phone. No</b>	Mobile No.	(0)9434352214, 8240323373	<b>Landline No.</b> (033) 2573 6302
<b>Email:</b>	jkm.cse@gmail.com		<b>Alternate Email, if any</b> <a href="mailto:jkmandal@klyuniv.ac.in">jkmandal@klyuniv.ac.in</a>
<b>Website</b>	http://jkmandal.com		

### 2. Present Position:

a.	Designation	Professor, CSE
b.	Organization	The University of Kalyani
c.	Pay Scale	Academic Level-14, BP: Rs. 205,600.00
d.	Date of appointment to the present post	16.03.2005 (Through Public Service Commission) at Kalyani Govt. Engineering College, West Bengal 27-03-2007 at The University of Kalyani (Open Post), W. B.
e.	Total Experience (in Years and Months) (As on 31 <sup>st</sup> March, 2022)	35 years as researcher and faculty members in various institutions. 17 years 15 days as Professor of CSE

### 3. Details of experience as Professor:

S.No.	Post held	Pay Scale	Organization	Nature of duties	Experience (In Years and Months)
1	Professor	Rs. 37,000-67,000	Kalyani Govt. Engg. College (PSC)	Teaching, Research and administration	16.3.2005 -26.3.2007 (2 yrs. 11 days)
2	Professor	Rs. 37,000-67,000	The University of Kalyani (open Post)	Teaching, Research and administration	27.3.2007- Continuing (15 yrs. as on 31 <sup>st</sup> March 2022)

### 4. Educational Qualification (in chronological order from highest)

S.No	Qualification	University	Year	Subject(s)/Topic	%achieved	Distinctions etc.
1	Ph. D.	Jadavpur University	2000	Computer Science & Engineering	NA	Ph. D. in Engineering
2	Post Graduation (M. Tech.)	The University of Calcutta	1987	Computer Science	75.25	-
3	Post Graduation (M. Sc.)	Jadavpur University	1985	Physics	65.70	Two Silver Medals for highest score in the Special Paper
4	Graduation	The University of Burdwan	1983	Physics	56.75	-

### 5. Contribution in terms of Infrastructure Development in West Bengal

1. Expert of AICTE Peer Team for EVC.
2. Expert of NAAC Peer Team.
3. Expert for Academic Audit in various institutes.
4. Designed and implemented full campus networking consisting of 4Km fiber optic network and 4Km UTP Network at the University of North Bengal during 1998-2000 from the project fund received from UGC (80 Lakhs).
5. Initiated to open Department of Engineering & Technological Studies, under Engineering Faculty and two streams of undergraduate studies, Information Technology and Electronics and Instrumentation Engineering as Dean Faculty of Engineering, Technology & Management, and University of Kalyani in 2008.

6. Actively involved in infrastructure development, networking, wireless communication between Main campus and Hostel situated at a distance of 2 km from main campus of Kalyani Government Engineering College as Coordinator of TEQIP I in Kalyani Govt. Engg. College, Govt. of West Bengal, during 2006-2007.
7. Domain Expert member of Uttarbanga Krishi Viswavidyalaya nominated by ICAR Govt. of India for planning, designing and implementation of networking and internetworking of Uttarbanga Krishi Viswavidyalaya campus, Coochbehar during my tenure as Head, Department of Computer Science & Application, University of North Bengal during 2002-2004.
8. Domain Expert member of West Bengal University of Animal and Husbandry, Belgachia for designing and implementation of Video Conferencing labs at Belgachia Campus and Haringhata Campus during 2009-10.
9. As Chairman of Center for Information Resource Management, University of Kalyani, implemented wireless connectivity between Central Park and Main Campus of the University of Kalyani
10. Implemented web based Remote Library Resource Access at the University of Kalyani as Chairman, CIRM
11. Expert member of Raiganj University for design and implementation of ICT and Networking infrastructure.

#### 6. Administrative Experience – Post(s) & Responsibilities Held:

Sl. No.	Post	Organization/ University	Duration		Experience (In Years and Months)
			From (Date)	To (Date)	
1.	Vice- Chancellor (In Charge), Kalyani University	University of Kalyani	08.04.2017	12.04.2017	5 days
2	NAAC Peer Team Expert	National Assessment and Accreditation Council, Government of India	January 2019	Continuing	-
2	AICTE Expert Committee Member	All India Council for Technical Education, Govt. of India	April, 2021	Continuing	EXPERT20190962
2.	Director, IQAC, Kalyani University	University of Kalyani	19.02.2014	Continuing	More than six years
3.	Chairman, Professional/ Academic bodies	<ol style="list-style-type: none"> <li>1. Center for Information Resource Management (CIRM), KU</li> <li>2. Computer Science Hons/M. Sc/MCA, North Bengal University</li> <li>3. Placement Cell, Kalyani University</li> <li>4. Chairman, Board of Research studies, NIT Mizoram</li> <li>5. Chairman, Board of Research Studies, Kalyani University</li> <li>6. Computer Science Major</li> <li>7. Computer Society of India, Siliguri Chapter</li> <li>8. Computer Society of India, Kolkata Chapter</li> <li>9. Institution of Electronics and Telecommunication Engineering (IETE), Secretary</li> <li>10. Institution of Electronics and Telecommunication Engineering (IETE), Chairman</li> <li>11. Institution of Electronics and Telecommunication Engineering (IETE), New Delhi, Governing Council Member</li> <li>12. Coordinator, TEQIP-I, Kalyani Govt. Engg. College</li> <li>13. Chairman, BOS, CSE, NIT Mizoram.</li> <li>14. Regional Student Coordinator, Region II, CSI, 2014-2016</li> </ol>	2015 1998 2018 2014 2018-2010 and 2019 2008 1887 2016 2018 2020 2020 2005 2012 2014	continuing 2000 continuing 2018 Continuing Continuing 1999 2017 2020 continuing 2007 2016 2016	five yrs. two yrs. two yrs. four yrs. three yrs. 11 yrs. two yrs. one yr. 2020-2022 2020-2022. two years four yrs. two yrs.

4.	<b>Dean of Faculty of Engineering, Technology &amp; Management</b>	University of Kalyani, Faculty of Engineering, Technology and Management	2008 23.4.2008 (1st term) 9.7.2010 (2 <sup>nd</sup> term)	2012 22.4.2010 (1st term) 8.7.2012 (2 <sup>nd</sup> term)	two consecutive terms
5	<b>Member of Academic Council</b>	Member of Faculty Council, University of Kalyani	2007	continuing	13 yrs.
6.	<b>Member of Executive Council/BOG</b>	University of Kalyani	2008	2012	4 yrs.
7.	<b>Member of University Court</b>	University of Kalyani	2008 2014	2012 2016	4 yrs. 2 yrs.
8.	<b>Head of the Department</b>	Kalyani University University of North Bengal Computer Center, North Bengal University Kalyani Govt. Engineering College	2008 1998 1998 2005	2010 2000 2000 2007	2 years 2 Years 2 years 2 Years
9.	<b>Member of professional/ Academic Bodies</b>	IETE Fellow(life) (2012): F232495; IEEE Senior member (2013):92557072; ACM Associate member (2012): 2006735; CSI Life member (1992):16278; CRSI Life member (2009): L/330; AIRCC Member (2011):128572; ISCA Life Member: L30951;	2012 2013 2012 1992 2009 2011 2017	continuing Continuing Continuing Continuing Continuing Continuing	6 yrs. 6 yrs. 7 Yrs 27 yrs. 11 yrs. 9 yrs. 3 yrs.
For more information kindly see the website of Dr. J K Mandal, <a href="http://jkmandal.com">http://jkmandal.com</a>					

### 7. a. Contributions to Journals and Book

S.No		Numbers already published / presented
1	Book authored (For more information kindly see the website of Dr. J K Mandal, <a href="http://jkmandal.com">http://jkmandal.com</a> )	In 2020 he has published a text book on Reversible Steganography and Authentication via Transform Encoding from Springer ( <a href="https://link.springer.com/book/10.1007/978-981-15-4397-5">https://link.springer.com/book/10.1007/978-981-15-4397-5</a> )  Twelve
2	Editor in chief (For more information kindly see the website of Dr. J K Mandal, <a href="http://jkmandal.com">http://jkmandal.com</a> )	one
3	Editorship (For more information kindly see the website of Dr. J K Mandal, <a href="http://jkmandal.com">http://jkmandal.com</a> )	53 in Edited Books in International Conferences(Springer etc.)
4	Peer review for	Springer, Elsevier, IEEE journals and conferences(many)
5	Member of the International Advisory Board (For more information kindly see the website of Dr. J K Mandal, <a href="http://jkmandal.com">http://jkmandal.com</a> )	Various Conferences(Springers etc.)(many)

### Publications:

S.No	Category	Numbers already published / presented
1	International Journals (UGC approved list only)	190(For more information kindly see the website of Dr. J K Mandal, <a href="http://jkmandal.com">http://jkmandal.com</a> )
2	International Conference	228 (For more information kindly see the website of Dr. J K Mandal, <a href="http://jkmandal.com">http://jkmandal.com</a> )
3	National Journals (UGC approved list only)	

4	National Conference	54 (For more information kindly see the website of Dr. J K Mandal, <a href="http://jkmandal.com">http://jkmandal.com</a> )
5	Other articles	Kindly see the website of Dr. J K Mandal, <a href="http://jkmandal.com">http://jkmandal.com</a>

**B.I List of scholarly publications in recognized professional and/or academic journals:**

**List of Journals to be given a s annexure**

S.No		Web of Science	Scopus	Goolge Scholar
1	Publication (number as appeared)	52	278	500
2	Citations (Overall)	371	705	3161
3	h-index	11	13	24

**C. Participation and Scholarly presentation in conference:**

**C.I. National**

S. No.	Date	Title of Conference or Institution	Title/Subject of Presentation(if made)
			55(For more information kindly see the website of Dr. J K Mandal, <a href="http://jkmandal.com">http://jkmandal.com</a> )

**C.II. International**

S.No	Category	Number of Presentations
1.	International Conference / Other Event held Abroad	5
2.	International Conference / Other Event held in India	224(For more information kindly see the website of Dr. J K Mandal, <a href="http://jkmandal.com">http://jkmandal.com</a> )
	Total	229

**D. Participation and contribution in National / International Fora in the area of your academic and professional expertise:**

		Numbers(s)
Plenary Lectures / invited talks delivered	International (See Annexure	5
	National	More than 100 lectures in last five years (For more information kindly see the website of Dr. J K Mandal, <a href="http://jkmandal.com">http://jkmandal.com</a> )
Congress attended	National	More than 30 (in last five years)
	International	
Ph.D Level Examinership, etc.,	International	4
	National	8-10 per year
Others (Specify)	International	International Academic Exposure (For more information kindly see the website of Dr. J K Mandal, <a href="http://jkmandal.com">http://jkmandal.com</a> )
	National	

**7. Consulting Experience:**

List key consulting assignments undertaken;

S.No	Client 'Organization's name	Nature of Assignment	Duration	Value (in Rs)
1.	Uttarbanga Krishi Vishwavidyalaya	Domain Expert member of Uttarbanga Krishi Vishwavidyalaya nominated by ICAR Govt. of India for planning, designing and implementation of networking and internetworking of Uttarbanga Krishi Vishwavidyalaya campus, Coochbehar during my tenure as Head, Department of	Two Years	Honorary

		Computer Science & Application, University of North Bengal during 2002-2004		
2.	West Bengal University of Animal and Husbandry, Belgachia, Kolkata	Domain Expert member of West Bengal University of Animal and Husbandry, Belgachia for designing and implementation of Video Conferencing labs at Belgachia Campus and Haringhata Campus during 2009-10.	Two Years	Honorary

### 8. Honors/Awards & Fellowships for Outstanding work

Sl. No.	Name of Award/Fellowship etc	Year of Award	Awarded by
1	A. M. Bose Memorial Silver medal for securing highest marks in the paper "Nuclear Physics and Cosmic Rays" at M. Sc	1985	Jadavpur University
2	Kali Prasanna Dasgupta Memorial Silver medal for securing highest marks in the paper "Nuclear Physics and Cosmic Rays" at M. Sc	1985	Jadavpur University
3	"Bharat Jyoti Award" for meritorious services, outstanding performances and remarkable role in the field of Computer Science & Engineering on 29 <sup>th</sup> August, 2012	2012	International Friendship Society(IIFS), New Delhi
4	"The Best Citizen of India Award 2012"	2012	The International Publishing House, Delhi, India
5	Biography in Marquis Who's Who in the World 2014(31st Edition), USA (published in November 2013)	2014	
6	Chapter Patron Award, CSI Kolkata Chapter, 2014	2014	CSI Annual Convention at JNTU, Hyderabad during 14-16 December, 2014
7	Vidyasagar Award	2016	International Society for Science Technology and management in the fifth International Conference on Computing, Communication and Sensor Network, on 25 <sup>th</sup> December, 2016 at Hotel Golden park, Kolkata, India
8	Rashtriya Pratibha Award	2017	Indo Socio Development Association, Delhi
9	<b>Siksha Ratna award</b>	<b>2018</b>	<b>Department of Higher Education, Government of West Bengal, India</b>

### 9. No. of Research Scholars (Ph. D) successfully guided:

S. No	Ph. D. Supervision	Affiliated University/Institute	Awarded/ under guidance by	Main Guide
	18 in Computer Science & Engineering and 6 in Computer Science	University of North Bengal and University of Kalyani	26	26

### 10. Patents

Sl. No.	Title of Patent	Organization	Year	Names
1	Enhancing Cyber Security using Hybrid Authentication Technique	Patent Number 2021100948, Innovation Patent, Australian Government, Eight years from 19.02.2021	2021	Gaurav Gambhir, M Gambhir, J K Mandal



Place: Kalyani

(Signature of Applicant)

## SCI Publications in last five years (2022-2018)

### 2022

1. Krishan Kundu, Prasun Halder & Jyotsna Kumar Mandal (2022) Estimation and Analysis of Change Detection, Forest Canopy Density, and Forest Fragmentation: A Case Study of the Indian Sundarbans, Journal of Sustainable Forestry, SCIE(IF:1.515); DOI: 10.1080/10549811.2022.2059515, published 30<sup>th</sup> March 2022, link: <https://www.tandfonline.com/doi/full/10.1080/10549811.2022.2059515>

### 2021

#### Patents:

**Patent Title:** Enhancing Cyber Security using Hybrid Authentication Technique, Gaurav Gambhir, M Gambhir, J K Mandal, Patent Number 2021100948, Innovation Patent, Australian Government, Eight years from 19.02.2021.

1. Santra, D., Basu, S. K., Mandal, J. K., & Goswami, S. (2019). Rough set based lattice structure for knowledge representation in medical expert systems: low back pain management case study. Expert Systems with Applications, Elsevier (Impact factor: 6.954 (2019)) [SCI], 145,113084
2. Kundu, K, Halder P and Mandal, J K, Change Detection and Patch Analysis of Sundarban Forest During 1975–2018 Using Remote Sensing and GIS Data, SN Computer Science , Springer(June 2021), 2:364.
3. Debarpita Santra, Subrata Goswami, Jyotsna Kumar Mandal and Swapan Kumar Basu, Low Back Pain Expert Systems: Clinical Resolution through Probabilistic Considerations and Poset”, Journal Artificial Intelligence in Medicine, Science Direct Elsevier, Volume 120,October 2021, 102163(SCI, IF:5.326) (<https://www.sciencedirect.com/science/article/pii/S0933365721001561>), September, 2021.
4. Krishan Kundu, Prasun Halder & Jyotsna Kumar Mandal, Detection and Prediction of Sundarban Reserve Forest using the CA-Markov Chain Model and Remote Sensing Data”, Earth Science Informatics (2021), Springer Nature(17th July 2021( SCIE with IF: 2.878))2021, DOI: <https://doi.org/10.1007/s12145-021-00648-9>, 2021.
5. M Marjit Sing, Mandal, J K, A Novel Wide & Deep Transfer Learning Stacked GRU Framework for Network Intrusion Detection, Journal of Information Security Applications, ELSEVIER, Vol 91,SCIE(IF 3.872), June, 2021, <https://doi.org/10.1016/j.jisa.2021.102899>, <https://www.sciencedirect.com/science/article/pii/S2214212621001265>.
6. Sounak Sadhukhan, P.K. Mishra, S.K. Basu, J.K. Mandal, A multi-scale agent-based model for avascular tumour growth, Biosystems, Volume 206,2021, 104450,ISSN 0303-2647,<https://doi.org/10.1016/j.biosystems.2021.104450>. ELSEVIER SCI, SCIE with IF:1.808. (<https://www.sciencedirect.com/science/article/pii/S0303264721001040>).
7. Arindam Sarkar, Moirangthem Marjit Singh, Jyotsna Kumar Mandal, Neural Synchronization guided Concatenation of Header and Secret Shares for Secure transmission of Patients’ Electronic Medical Record: Enhancing Telehealth Security for COVID-19, Arabian Journal for Science and Engineering(SCIE, IF 2.334, Springer Nature, January 2021.
8. Gambhir, G and Mandal, J K, Shared memory implementation and performance analysis of LSB steganography based on chaotic tent map, Innovations in Systems and Software Engineering, <https://doi.org/10.1007/s11334-021-00385-8>(March 2021)
9. Bandyopadhyay, S., Thakur, S.S. & Mandal, J.K. Product recommendation for e-commerce business by applying principal component analysis (PCA) and K-means clustering: benefit for the society. Innovations Syst Softw Eng 17, 45–52 (2021). <https://doi.org/10.1007/s11334-020-00372-5>

### 2020

10. Santra, D., Mandal, J. K., Basu, S.K. et al. Medical expert system for low back pain management: design issues and conflict resolution with Bayesian network. Med Biol Eng Comput (2020). <https://doi.org/10.1007/s11517-020-02222-9>, Springer(SCI, IF-2.6022), 7 September,2020.
11. Soma Bandyopadhyay, S. S. Thakur1,J. K. Mandal, Product recommendation for e-commerce business by applying principal component analysis (PCA) and K-means clustering: benefit for the society, Innovations in Software and Systems Engineering(NASA Jpurnal), Spinger, SCIMago, June, 2020
12. Mandal, J K., Chakraborty, R, A 10nm MOS and Its Applications, Microsystem technologies, Springer (Microsyst Technol (Feb, 19,2020) (IF:1.581).
13. Kundu, K, Mandal, J K., Halder, P, Urban Change Detection Analysis during 1978-2017 in Kolkata, India using Multi-temporal Satellite Data, Journal of the Indian Society of Remote Sensing (Sept., 2020) (SCIE, IF: 1.563)
14. Das, S, Mandal, J K., An enhanced block based Compress Sensing Technique using orthogonal matching pursuit, Signal, Image and Video Processing, Springer (2020) (in press)(SCI, IF 2.157).
15. Gambhir, G. & Mandal, J.K. Multicore implementation and performance analysis of a chaos based LSB steganography technique, Microsystem technologies, Springer (Microsyst Technol (2020) 25: 1669. <https://doi.org/10.1007/s00542-020-04762-4>) Feb. 2020 (IF:2.276).
16. Das, S., Mandal, J.K. Saliency detection via outlier pursuit in compress domain (SDOPCD). Microsyst Technol (2020). <https://doi.org/10.1007/s00542-020-04769-x>
17. Santra, D., Mandal, J. K., Basu, S. K., & Goswami, S. (2019). Addressing Design Issues in Medical Expert System for Low Back Pain Management: Knowledge Representation, Inference Mechanism, and Conflict Resolution Using Bayesian Network. Medical & Biological Engineering & Computing, Springer (Impact factor: 2.039 (2019) [SCI]) [In revision]

**2019**

18. Hassan, K L, Mandal, J K, Mondal, S, Enhanced Trust-based Intrusion Detection Syatem in MANET,Journal of Scientific & Industrial Research(JSIR), Vol. 78, August 2019, pp. 509-512, 2019(**IF:0.735**)
19. Chakraborty, R. & Mandal, J.K. An FPGA based cascaded CBC block cipher through RPSNC and TE, Microsystem technologies, Springer (Microsyst Technol (2019) 25: 1669. <https://doi.org/10.1007/s00542-017-3458-x>) May 2019, Volume 25, Issue 5, pp 1669–1677(**IF:1.581**).
20. Chakraborty, R, Mandal, J K, An FPGA based non-feistel block cipher through recursive substitutions of bits on prime-nonprime detection of sub-stream (RSBPNDs), Microsystem Technologies (2019) ( Microsyst Technol (2019) 25: 1679. <https://doi.org/10.1007/s00542-017-3662-8>), May 2019, Volume 25, Issue 5, pp 1679–1687(**IF:1.581**)
21. Hassan, K. L., Mandal, J. K. (2019), “Risk Factor Based Ad-hoc On Demand Multipath Distance Vector Routing Protocol (RF-AOMDV), JSIR (SCIE Journal), (vol 78, pp 746-750, Nov, 2019) ( **IF:0.557**).
22. Dutta, P., Chatterjee, R. & Mandal, J.K.(2019) , “An approach for deployment of BRS in software-defined network”, Innovations Syst Softw Eng(ESCI) (2019). <https://doi.org/10.1007/s11334-019-00340-8>, A Nasa journal, Springer, pp 1-7(**IF:1.10**)
23. Kundu K., Halder P., Mandal J.K. (2019) Forest Cover Change Analysis in Sundarban Delta Using Remote Sensing Data and GIS. In: Mandal J., Sinha D. (eds) Intelligent Computing Paradigm: Recent Trends. Studies in Computational Intelligence (Web of Science Indexed), vol 784, pp 85-101, [https://doi.org/10.1007/978-981-13-7334-3\\_7](https://doi.org/10.1007/978-981-13-7334-3_7), Springer, Singapore.

**2018**

24. Das, S., Mandal, J.K, An information Hiding scheme in wavelet domain using Chaos dynamics, Journal of scientific & industrial research, vol 77, May 2018.pp 264-267(SCI).
25. Saha, S Ghoshal, S K Chakraborty A, Drargupta S, Sarkar, Mandal, J K, Improved exploiting modification direction-based steganography using dynamic weightage array, Electronica Letters, Vol. 54 No. 8 pp. 498-500, (IF:1.59)19<sup>th</sup> April, 2018(2018)
26. R Chatterjee, R Chakraborty, J K Mandal (2018), Design of Cryptographic model for End-to-End Encryption in FPGA based systems Microsystems Technology, Springer (SCI)(online first), (IF:1.581)
27. Mandal J., K., Chakraborty Raktim “Design of 4nm MOSFET and its Applications”, Microsystem Technology, Springer, July 2018 (SCI) (online first) (IF:1.581).
28. Ghosal, S and Mandal, J., K., “High Payload Image Steganography based on Laplacian of Gaussian (LoG) Edge Detector”, Multimedia Tools and Applications (IF:1.530), Springer (Science Citation Index Expanded (SciSearch), May, 2018.
29. Ghosal, S and Mandal, J., K., On the use of the Stirling Transform in Image Steganography, Journal of Information Security and Applications (IF:1.357), Elsevier (in Press), 2018
30. Mandal, J. K.,Das, S,(2018), An Information Hiding Scheme in Wavelet Domain using Chaos Dynamics, Journal of Scientific and Industrial Research (IF:0.557), ISSN: 0022-4456(SCI)(Vol 77(05), pp264-267
31. Chatterjee R, Mandal J. K., (2018), A Content Proposer System (CPS) based on deficiencies of Confidence Based Learning (CBL), Journal of Scientific and Industrial Research (IF:0.557), ISSN: 0022-4456. (SCI), Vol. 78(1), pp 35-38
32. Das, S, Mandal, J. K., Secured Hand Sacking Based Two Phase Data Concealing Architecture in Spectral Domain, Microsystem Technology (IF:1.581), Springer (Online first) March 2018(SCI)
33. Shaswata Saha ; Sudipta Ghosal ; Anuran Chakraborty ; Souvik Dhargupta ; Ram Sarkar ;Jyotsna Mandal, “Improved exploiting modification direction based steganography using dynamic weightage array”, Electronics Letters, IET Digital Library(IF:1.155), DOI: 10.1049/el.2017.3336 , Print ISSN 0013-5194, Online ISSN 1350-911X Available online: 02 March 2018(SCI)(IF:1.232

**Research Project**

34. Modernization of Laboratory Facility (2000-2002) – Rs. 7 Lakhs, Funding Agency: AICTE, Government of India.
35. Microprocessor Based Encoder for Secured Transmission (2002-2005) – Rs. 2 Lakhs, Funding Agency: AICTE, Government of India.
36. GIS Anchored Integrated Plantation Management: Tea 2004- 2007) – Rs. 9.8 Lakhs. Funding Agency: AICTE, Government of India.
37. IIPC Cell - AICTE, Govt. of India (April 2009 to March 2012) – Rs. 10.00 Lakhs, Funding Agency: AICTE, Government of India.
38. MIT, Govt. of West Bengal, Basic Computer Training of School Teachers (July, 2010 to March, 2011) – Rs. 4 Lakhs, Funding Agency: Ministry of Information Technology, Government of West Bengal.