



# R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

(Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science & Commerce)

Opposite Ghatkopar Railway Station, Ghatkopar (West), Mumbai 400086, Maharashtra, INDIA.

Website: www.rjcollege.edu.in Email: rjcollege@rjcollege.edu.in Tel No: +91 22 25151763 Fax No: +91 22 25150957

College is recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Affiliated to UNIVERSITY OF MUMBAI II NAAC Re-Accredited 'A' Grade (CGPA: 3.50)

## NOTICE

### DEGREE COLLEGE

The Department of Botany is organising a Lecture on 'A Case for Quantum Biology: Application of Quantum Mechanics to Biology' on 13<sup>th</sup> June 2019 from 8:30 am onwards in MPSS Hall. Students are cordially invited to attend the session.

  
Principal

PRINCIPAL  
RAMNIRANJAN JHUNJHUNWALA COLLEGE  
OF ARTS, SCIENCE & COMMERCE (AUTONOMOUS)  
Ghatkopar (W), Mumbai-400 086, Maharashtra, INDIA



2019: Star College Status by DBT

2008: Best College by University of Mumbai 2010: IMC RBNQ Award 'Performance Excellence' for the year 2009

2011: 'Best Teacher Award' by Government of Maharashtra 2013: DST-FIST 2014: DBT STAR College

2013 & 2014: 'Jagar Jaanivancha Award' by Govt, of Maharashtra 2016: ISO 14001:2015 2016: ISO 9001:2015 2017: ISO 27001:2013

2018: Autonomous Status by University Grants Commission (No. F. 22-1/2018(AC) - 28.05.2018) & by University of Mumbai (No.Aff./ICD/18-19/440 - 08.06.2018)



# R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

(Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science & Commerce)

Opposite Ghatkopar Railway Station, Ghatkopar (West), Mumbai 400086, Maharashtra, INDIA.

Website: www.rjcollege.edu.in

Email: rjcollege@rjcollege.edu.in

Tel No: +91 22 25151763

Fax No: +91 22 25150957

College is recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Affiliated to UNIVERSITY OF MUMBAI || NAAC Re-Accredited 'A' Grade (CGPA: 3.50)

## BROCHURE

R. J. COLLEGE OF ARTS, SCI & COMMERCE (AUTONOMOUS), GHATKOPAR, MUMBAI - 86

DEPT OF BOTANY - DBT STAR COLLEGE ACTIVITY: JUNE, 2019

A LECTURE ON

### "A Case for Quantum Biology: Application of Quantum Mechanics to Biology"

Thursday, June 13, 2019 @ 8.30 am MPSS Hall

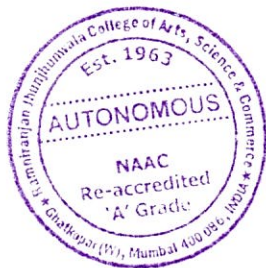
Abstract: We are currently witnessing something called a second quantum revolution which has allowed us a deeper understanding of the properties of quantum systems at the single atom and single photon level. This understanding has not only allowed us to appreciate quantum physics at a deeper level but also has given rise to new form of quantum technologies and new information processing paradigms. I will begin with brief intro to the basic properties of quantum systems that distinguish them from classical systems and talk about some macroscopic (size-scales that our eyes can see) phenomenon that arise from the quantum weirdness. With very brief history of the thought that basic biological processes may be driven by inherent quantum-ness of the life's chemistry. I will talk about the frontier research that may imply that quantum mechanics is very essential for several biological processes such as photosynthesis, DNA mutation, Quantum vision, Enzymatic activity, and magnetic navigation used by European robins and new techniques such as quantum microscopy.



BY

DR. KISHOR T KAPALE, PH.D, INTERIM CHAIR,  
PROFESSOR AND GRADUATE COORDINATOR,  
WESTERN ILLINOIS UNIVERSITY

ALL ARE CORDIALLY INVITED



  
PRINCIPAL  
RAMNIRANJAN JHUNJHUNWALA COLLEGE  
OF ARTS, SCIENCE & COMMERCE (AUTONOMOUS)  
Ghatkopar (W), Mumbai-400 086, Maharashtra, INDIA

2019: Star College Status by DBT

2008: Best College by University of Mumbai 2010: IMC RBNQ Award 'Performance Excellence' for the year 2009

2011: 'Best Teacher Award' by Government of Maharashtra 2013: DST-FIST 2014: DBT STAR College

2013 & 2014: 'Jagar Jaanivancha Award' by Govt, of Maharashtra 2016: ISO 14001:2015 2016: ISO 9001:2015 2017: ISO 27001:2013

2018: Autonomous Status by University Grants Commission (No. F. 22-1/2018(AC) - 28.05.2018) & by University of Mumbai (No.Aff./ICD/18-19/440 - 08.06.2018)





# R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

(Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science & Commerce)

Opposite Ghatkopar Railway Station, Ghatkopar (West), Mumbai 400086, Maharashtra, INDIA.

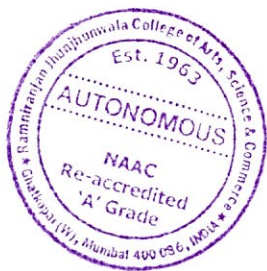
Website: www.rjcollege.edu.in Email: rjcollege@rjcollege.edu.in Tel No: +91 22 25151763 Fax No: +91 22 25150957

College is recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Affiliated to UNIVERSITY OF MUMBAI II NAAC Re-Accredited 'A' Grade (CGPA: 3.50)

## REPORT

Dr. Kishore Kapale a well-known scientist, from USA interacted with the students. He held a session on A Case for Quantum Biology: Application of Quantum Mechanics to Biology. His introduction to Quantum biology gave an insight on the study of quantum mechanics and theoretical chemistry to aspects of biology. He also touched upon the emerging field in quantum biology like how it can be applied in photosynthetic microorganisms, its application in space to name a few. The session ended with students interacting with him and also how they can pursue studies abroad and do research in quantum biology.



PRINCIPAL  
RAMNIRANJAN JHUNJHUNWALA COLLEGE  
OF ARTS, SCIENCE & COMMERCE (AUTONOMOUS)  
Ghatkopar (W), Mumbai-400 086, Maharashtra, INDIA

2019: Star College Status by DBT

2008: Best College by University of Mumbai 2010: IMC RBNQ Award 'Performance Excellence' for the year 2009

2011: 'Best Teacher Award' by Government of Maharashtra 2013: DST-FIST 2014: DBT STAR College

2013 & 2014: 'Jagar Jaanivancha Award' by Govt, of Maharashtra 2016: ISO 14001:2015 2016: ISO 9001:2015 2017: ISO 27001:2013

2018: Autonomous Status by University Grants Commission (No. F. 22-1/2018(AC) - 28.05.2018) & by University of Mumbai (No.Aff./ICD/18-19/440 - 08.06.2018)



# R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

(Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science & Commerce)

Opposite Ghatkopar Railway Station, Ghatkopar (West), Mumbai 400086, Maharashtra, INDIA.

Website: www.rjcollege.edu.in

Email: rjcollege@rjcollege.edu.in

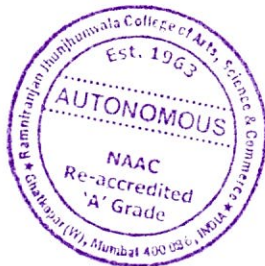
Tel No: +91 22 25151763

Fax No: +91 22 25150957

College is recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Affiliated to UNIVERSITY OF MUMBAI II NAAC Re-Accredited 'A' Grade (CGPA: 3.50)

## PHOTOGRAPHS OF THE SESSION



*Usha*  
PRINCIPAL  
RAMNIRANJAN JHUNJHUNWALA COLLEGE  
OF ARTS, SCIENCE & COMMERCE (AUTONOMOUS)  
Ghatkopar (W), Mumbai-400 086, Maharashtra, INDIA

2019: Star College Status by DBT

2008: Best College by University of Mumbai 2010: IMC RBNQ Award 'Performance Excellence' for the year 2009

2011: 'Best Teacher Award' by Government of Maharashtra 2013: DST-FIST 2014: DBT STAR College

2013 & 2014: 'Jagar Jaanivancha Award' by Govt, of Maharashtra 2016: ISO 14001:2015 2016: ISO 9001:2015 2017: ISO 27001:2013

2018: Autonomous Status by University Grants Commission (No. F. 22-1/2018(AC) - 28.05.2018) & by University of Mumbai (No.Aff./ICD/18-19/440 - 08.06.2018)





# R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

(Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science & Commerce)

Opposite Ghatkopar Railway Station, Ghatkopar (West), Mumbai 400086, Maharashtra, INDIA.

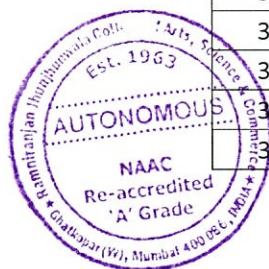
Website: www.rjcollege.edu.in Email: rjcollege@rjcollege.edu.in Tel No: +91 22 25151763 Fax No: +91 22 25150957

College is recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Affiliated to UNIVERSITY OF MUMBAI II NAAC Re-Accredited 'A' Grade (CGPA: 3.50)

## LIST OF STUDENTS WHO ATTENDED THE SESSION ON A CASE OF QUANTUM BIOLOGY: APPLICATION OF QUANTUM MECHANICS TO BIOLOGY

SR NO	NAME	CLASS	ROLL NO
1	CHAUHAN NEELAVATEE BHIMASHANKAR LATA	TYBSC	201
2	KHAN MUNAZZA MAJIDULLAH FARZANA	TYBSC	204
3	KHAN RUBY IRFAN RUKHSANA	TYBSC	205
4	KHANJIWALA JUMANA ZAKIRHUSSAIN TASNEEM	TYBSC	206
5	NITISHKUMAR PRADEEPKUMAR SEEMAKUMARI	TYBSC	207
6	MAURYA BRIJESH SHOBHASINGH NIRMALA DEVI	TYBSC	208
7	PRAJAPATI KISHAN SHRAVAN KUMAR KADAMI DEVI	TYBSC	214
8	PRAJAPATI RAKESH BAIJNATH DHARMSHILA	TYBSC	215
9	SHAIKH MUSKAN ABDUL JHAHANGEER AFSANA	TYBSC	216
10	SHELAR APARNA BHAGAWAN NANDA	TYBSC	217
11	SHUKLA SONAM KAUSHLESH VIMALA	TYBSC	218
12	MAURYA KM MAHIMA LAKSHMI PRASAD HIRAWATI DEVI	TYBSC	225
13	UPADHYAY NAVIN RAMESHCHANDRA KAMLESHDEVI	TYBSC	226
14	MANVE RASIK RAMESH RUTA	TYBSC	227
15	PADELKAR ABHISHEK RAMANAND KIRAN	TYBSC	228
16	SHRIVASTAV MOHIT RAJKUMAR KUSUM	TYBSC	229
17	BHAGAT BHAVIK BHALCHANDRA TULASI	TYBSC	230
18	JADHAV SIDDHANT RANJIT VRUSHALI	SYBSC	506
19	JAISWAR SEEMA HARINARYAN INDRAVATI	SYBSC	507
20	KELKAR APURVA RAVINDRA VRUSHALI	SYBSC	508
21	LALE SHUBHAM DILIP SANGITA	SYBSC	509
22	SHAIKH SOYEB AKHATAR BADRUDDIN JANTUNISHA	SYBSC	520
23	SHAIKH KALAMUDDIN NIJAMUDDIN NAGINABEGAM	SYBSC	521
24	SHARMA PRIYA RAMTIRTH MALA	SYBSC	522
25	SHUKLA SHALINI RISHIKESH KIRAN	SYBSC	523
26	SIDDIQUI SAMINA MOHD TAHER AMINA KHATOON	SYBSC	524
27	SONI PIYUSH PANNALAL SITA	SYBSC	525
28	YADAV VANDANA RAJESH SHEELA	SYBSC	528
29	YADAV NEHA RAJESH ANITA	SYBSC	529
30	YADAV ANKITA MANOJKUMAR RADHA	SYBSC	530
31	TERSE SAMPADA RAVINDRA RASHMI	SYBSC	531
32	PANDEY SHIVAM ASHWINI REKHA	SYBSC	541
33	BHANGE POONAM SHIVAJI RANJANA	SYBSC	542
34	GHADGE ANKITA ANKUSH GEETA	SYBSC	543
35	KHAN IMRAN SHAFIQULLAH SHAKLAIN	SYBSC	544



*Ushu*  
PRINCIPAL

RAMNIRANJAN JHUNJHUNWALA COLLEGE OF ARTS, SCIENCE & COMMERCE (AUTONOMOUS) Ghatkopar (W), Mumbai 400 086, Maharashtra, INDIA

2019: Star College Status by DBT

2008: Best College by University of Mumbai 2010: IMC RBNQ Award 'Performance Excellence for the year 2009'

2011: 'Best Teacher Award' by Government of Maharashtra 2013: DST-FIST 2014: DBT STAR College

2013 & 2014: 'Jagar Jaanivancha Award' by Govt. of Maharashtra 2016: ISO 14001:2015 2016: ISO 9001:2015 2017: ISO 27001:2013

2018: Autonomous Status by University Grants Commission (No. F. 22-1/2018(AC) - 28.05.2018) & by University of Mumbai (No.Aff./ICD/18-19/440 - 08.06.2018)





# R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

(Hindi Vidya Prachar Samiti's **RAMNIRANJAN JHUNJHUNWALA COLLEGE** of Arts, Science & Commerce)

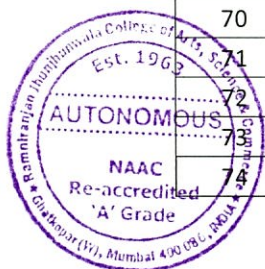
Opposite Ghatkopar Railway Station, Ghatkopar (West), Mumbai 400086, Maharashtra, INDIA.

Website: www.rjcollege.edu.in Email: rjcollege@rjcollege.edu.in Tel No: +91 22 25151763 Fax No: +91 22 25150957

College is recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Affiliated to UNIVERSITY OF MUMBAI II NAAC Re-Accredited 'A' Grade (CGPA: 3.50)

36	SIDDIQUI KHUSHBU SHAHID SALMA	SYBSC	545
37	DUBEY SONALI ASHOK KIRAN	SYBSC	502
38	GUPTA NIDHI SHANKARLAL SAVITADEVI	SYBSC	509
39	IDRISHI MOHAMMEDABID YASEEN AISHA	SYBSC	510
40	JADHAV TEJAL VIJAY SUNITA	SYBSC	511
41	MISHRA ANMOL DAYASHANKAR PUSHPA	SYBSC	523
42	PAWAR MAYUR MOHAN MOHINI	SYBSC	524
43	NAKTI SWAPNALI KRISHNA MALATI	SYBSC	525
44	PRAJAPATI ANSHU BHOLENATH SARITA	SYBSC	526
45	SHAIKH SALIM AKBAR ABEDABI	SYBSC	531
46	SINGH SHWETA BAJRANG BAHADUR NEELAM	SYBSC	532
47	SINGH NIKHIL ASHOKKUMAR PUSHPA	SYBSC	541
48	PANIGRAHI SIMRAN SIMANCHAL REENA	SYBSC	542
49	PANDEY SHIVKUMAR JAMUNAPRASAD SHASHIKALA	SYBSC	543
50	BISOYI ANJALI ANTARYAMI RANJU	SYBSC	548
51	TOTE NEHA SUNIL JAYASHREE	SYBSC	549
52	BARI HARSHADA SANTOSH SUNANDA	SYBSC	550
53	VISHWAKARMA ROSHAN AVADHRAJ SUSHILA	SYBSC	551
54	DUBEY PRIYA ANIL NISHA	SYBSC	555
55	KHAN MASEERA KHATOON MOHD ISRAEL FARIDA KHATOON	SYBSC	556
56	BHOJANE AMEYA GIRISH JYOTI	SYBSC	701
57	BHOR KASHISH VIJAY SADHANA	SYBSC	702
58	GUPTA ROSHAN RADHEYSHYAM MEERA	SYBSC	712
59	GUPTA JYOTI SANTOSH SANGEETA	SYBSC	713
60	KHAN SHIBA KHATOON MAHBOOB ALAM RUKHSANA KHATOON	SYBSC	716
61	KHAN NEHA PARVEEN MOHAMMED SHAMIM AKBARI BEGUM	SYBSC	717
62	KHAN SHAINEBANO ASHFAK AFROZ	SYBSC	718
63	KHAN AFSHA MUZIHUR REHMAN SHAMA	SYBSC	719
64	KHAN SADAF SANIYA NIYAZ AHMED MOMINA	SYBSC	720
65	KHAVALI MRUNAL VIJAY LAXMI	SYBSC	721
66	SHAIKH SANIA TAJ MOHAMMED ZULEKHA BEGUM	SYBSC	739
67	SONI RAJNANDINI ANILKUMAR SUMAN	SYBSC	745
68	TIWARI AKASH MANOJ POONAM	SYBSC	746
69	URANKAR MANISH SHIRISH NEETA	SYBSC	747
70	VISHWAKARMA PRIYA JOGINDER USHA	SYBSC	748
71	VISHWAKARMA ARVINDKUMAR RAMNARAYAN GEETADEVI	SYBSC	749
72	YADAV NITESH KUMAR DEVCHARAN KRISHNAVATI	SYBSC	750
73	SINGH PRINSEE ANAND KUMAR REETA	SYBSC	764
74	MISHRA ATULKUMAR RAMASHANKAR BABITA	SYBSC	765



*Usha*  
PRINCIPAL

RAMNIRANJAN JHUNJHUNWALA COLLEGE  
OF ARTS, SCIENCE & COMMERCE (AUTONOMOUS)  
Ghatkopar (W), Mumbai-400086, Maharashtra, INDIA

2019: Star College Status by DBT

2008: Best College by University of Mumbai 2010: IMC RBNQ Award 'Performance Excellence' for the year 2009

2011: 'Best Teacher Award' by Government of Maharashtra 2013: DST-FIST 2014: DBT STAR College

2013 & 2014: 'Jagar Jaanivancha Award' by Govt. of Maharashtra 2016: ISO 14001:2015 2016: ISO 9001:2015 2017: ISO 27001:2013

2018: Autonomous Status by University Grants Commission (No. F. 22-1/2018(AC) - 28.05.2018) & by University of Mumbai (No.Aff./ICD/18-19/440 - 08.06.2018)



# R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

(Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science & Commerce)

Opposite Ghatkopar Railway Station, Ghatkopar (West), Mumbai 400086, Maharashtra, INDIA.

Website: www.rjcollege.edu.in

Email: rjcollege@rjcollege.edu.in

Tel No: +91 22 25151763

Fax No: +91 22 25150957

College is recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Affiliated to UNIVERSITY OF MUMBAI II NAAC Re-Accredited 'A' Grade (CGPA: 3.50)

75	REHMANI AFSANA HAQIULLAH ZAIBUNNISA	FYBSC	232
76	SHAIKH ARSHEE YASIN SHAMIM	FYBSC	234
77	BHAWAL KALPESH MADAN SUNITA	FYBSC	408
78	CHAURASIYA TWINKLE UDAYCHAND NEERA	FYBSC	415
79	CHOUDHARY AFREENBANU NIZAMUDDIN SHAHIDA	FYBSC	418
80	CHOUGULE MARIAM AYUB PARVEEN	FYBSC	419
81	DABIR ZAIN NAZIR PARVEEN	FYBSC	421
82	DALVI SHRUTI NITYANAND NIKITA	FYBSC	422
83	KHAN AMREEN SALAUDDIN RAHATUNNISA	FYBSC	470
84	KHAN MOHAMMED ALAM KUTBULLAH JAHAN KAISARJHAN	FYBSC	471
85	SINGH SEJAL NILESH KUMKUM	FYBSC	531
86	SINGH AKSHAT AJAYKUMAR SADHANA	FYBSC	533
87	SINGH SHBHAYA ARUN SHOBADDEVI	FYBSC	534
88	VISHWAKARMA VIKKY SUVAS GEETADEVI	FYBSC	545
89	VISHWAKARMA VANDANA BANKELAL VIMALA	FYBSC	546
90	VISHWAKARMA RUBIDEVI SAHEBLAL NISHADEVI	FYBSC	547
91	YADAV POOJA RAMBACHAN SHARMILA	FYBSC	560
92	YADAV LAKSHMINA AMARJEET CHANDRAKALA	FYBSC	561



*Ushra*  
PRINCIPAL  
RAMNIRANJAN JHUNJHUNWALA COLLEGE  
OF ARTS, SCIENCE & COMMERCE (AUTONOMOUS)  
Ghatkopar (W), Mumbai-400086, Maharashtra, INDIA

2019: Star College Status by DBT

2008: Best College by University of Mumbai 2010: IMC RBNQ Award 'Performance Excellence' for the year 2009

2011: 'Best Teacher Award' by Government of Maharashtra 2013: DST-FIST 2014: DBT STAR College

2013 & 2014: 'Jagar Jaanivancha Award' by Govt. of Maharashtra 2016: ISO 14001:2015 2016: ISO 9001:2015 2017: ISO 27001:2013

2018: Autonomous Status by University Grants Commission (No. F. 22-1/2018(AC) - 28.05.2018) & by University of Mumbai (No.Aff./ICD/18-19/440 - 08.06.2018)





# R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

(Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science & Commerce)

Opposite Ghatkopar Railway Station, Ghatkopar (West), Mumbai 400086, Maharashtra, INDIA.

Website: www.rjcollege.edu.in

Email: rjcollege@rjcollege.edu.in

Tel No: +91 22 25151763

Fax No: +91 22 25150957

College is recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Affiliated to UNIVERSITY OF MUMBAI || NAAC Re-Accredited 'A' Grade (CGPA: 3.50)

## CERTIFICATE



Hindi Vidya Prachar Samiti's

RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science &  
Commerce (AUTONOMOUS)

## CERTIFICATE

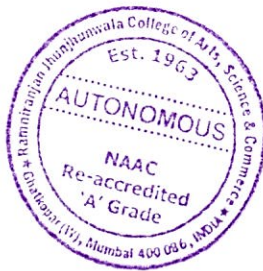
This is to certify that

**Mr. Bhawal Kalpesh Madan**

Of FYBSc and Roll No 408

has attended the Lecture on **A Case for Quantum Biology: Application of Quantum Mechanics to Biology** held on 13<sup>th</sup> June 2019 organized by **Department of Botany**

Dr. Usha Mukundan  
Principal



2019: Star College Status by DBT

2008: Best College by University of Mumbai 2010: IMC RBNQ Award 'Performance Excellence' for the year 2009  
2011: 'Best Teacher Award' by Government of Maharashtra 2013: DST-FIST 2014: DBT STAR College

2013 & 2014: 'Jagar Jaanivancha Award' by Govt, of Maharashtra 2016: ISO 14001:2015 2016: ISO 9001:2015 2017: ISO 27001:2013

2018: Autonomous Status by University Grants Commission (No. F. 22-1/2018(AC) - 28.05.2018) & by University of Mumbai (No.Aff./ICD/18-19/440 - 08.06.2018)