



# DAYALBAGH EDUCATIONAL INSTITUTE

(Deemed to be University)

**Department of Physics and Computer Science**  
(UGC-SAP and DST-FIST funded)



**Brief Profile and Progress Report**  
**(2013-2019)**

<https://www.dei.ac.in/dei/science/index.php/physics-home>



# Brief Profile

- **Year of Establishment**
  - **1950** (*as part of REI*)
  - **1981** (*as part of DEI*)
  - **1989** (*Physics and Comp. Sci.*)

- **Teaching Staff**

**17 Ph.Ds. (94 %)**

- **1 pursuing Ph.D.**

**41 % Women**

- **Teaching Staff : 20**
- **Non-Teaching Staff : 07**
- **No. of Students : 408**
- **Teacher-Student Ratio : 1:20**

Designation	No.
Professors	05
Associate Professors	05
Assistant Professors	07
Guest Faculty	03
<b>Total</b>	<b>20</b>

Gender	No.
Women	09
Men	11
<b>Total</b>	<b>20</b>

Visiting Professor



**Prof. Gursaran Adhar, Univ. of North Carolina, Wilmington, USA**

- **Courses on High Performance Parallel Computing**
- **Joint Supervision of Ph.D. Thesis on Parallel Computing**



# Students' Enrolment and Profile : 2018-19

S.No.	Programme	Number of Students		
		Men	Women	Total
1.	<i>B.Sc. (Hons.) Physics - I yr.</i>	29	25	54
2.	<i>B.Sc. (Hons.) Physics – II yr.</i>	22	37	59
3.	<i>B.Sc. (Hons.) Physics – III yr.</i>	13	02	15
4.	<i>B.Sc. (Hons.) Computer Science - I yr.</i>	09	08	17
5.	<i>B.Sc. (Hons.) Computer Science – II yr.</i>	12	06	18
6.	<i>B.Sc. (Hons.) Computer Science – III yr.</i>	13	01	14
7.	<i>B.Voc. – Telematics I yr.</i>	41	17	58
8.	<i>B.Voc. IOT – I yr.</i>	38	14	52
9.	<i>B.Voc. IOT – II yr.</i>	28	7	35
10.	<i>M.Sc. Physics/spl. in Electronics – I yr.</i>	03	12	15
11.	<i>M.Sc. Physics/spl. in Electronics – II yr.</i>	05	04	09
12.	<i>M.Sc. Computer Science – I yr.</i>	02	04	06
13.	<i>M.Sc. Computer Science – II yr.</i>	02	02	04
14.	<i>PG Diploma in Computer Sci. &amp; Applns.</i>	07	Nil	07
15.	<i>M.Phil. Physics/Computer Science</i>	Nil	Nil	Nil
16.	<i>Ph.D.</i>	22	23	45
	<b>Total</b>	<b>246</b>	<b>162</b>	<b>408</b>

**Teacher-Student Ratio : 1:20 ; Women Enrolment : 38.5 %**

**Demand Ratio : 1:15 ; Reservation : As per Govt norms**



# Awards and Recognitions

	Faculty	Students
▪ <b>International</b>	<b>: 17</b>	<b>06</b>
▪ <b>National</b>	<b>: 09</b>	<b>04</b>
▪ <b>Best Paper Awards</b>	<b>: 07</b>	<b>07</b>
▪ <b>Visiting Professorship/Fellow</b>	<b>: 01</b>	
<b>(Univ. of Waterloo, Prof. Donna Strickland, Nobel Laureate, 2018)</b>		
▪ <b>Visiting Scientists/Fellow</b>	<b>: 23</b>	<b>09</b>
<b>Invited Talks</b>	<b>: 98</b>	<b>12</b>
• <b>Abroad</b> : 35 (Keynote : 1, Plenary : 3)		
<i>(MIT, Oxford, Cambridge, Cornell, MPI, Würzburg, Paris, ICTP-Italy, UPenn., UMD, Waterloo, Hamburg, Kiel, Czech Academy of Sciences, Durham, Arizona, UC San Diego, etc.)</i>		
• <b>In India</b> : 63		
<i>(TIFR-M, TIFR-B, IISc., IITK, IITB, IITD, IIT Kh., BHU, IRDE, Tezpur Punjab Univ., MG Univ.-Kottayam, SOA-Bubhneshwar, etc.)</i>		
□ <b>Chairmanship/Session Chairs</b>		
Conferences: 15	<b>: Abroad : 03, In India : 12</b>	

- PhD External Experts : **IITD, IITB, DTU, Calcutta, Calicut, IAS-B'lore, Burdwan QANSAS-2015**
- Supervision of INSA Summer Fellows: **RKUKT-IIIT, RK Valley, Madras, Amrita**



**International Year of Light Commemorative Keynote Address, 38<sup>th</sup> Convocation, International Council of Academies of Engineering and Technological Sciences (CAETS), 2015**





# Awards and Recognitions: Faculty

## International

### Prof. Sukhdev Roy

- **Associateship, Abdus Salam Intl. Centre for Theoretical Physics, Trieste, Italy, 2011-16.**
- **Certificate of Appreciation for Reviewing :**
  - *Optical Engg. (SPIE, USA), 2013-17; Optics-Laser Tech.-2016; Microprocessors and Microsystems-2017; Photochem. Photobiol.B-2016 ; Results in Physics-2017; Optik-2017*
- **Outstanding Reviewer-Optik-Intl. Journal for Light & Electron Optics, Elsevier, 2018**  
*Materials Chemistry and Physics, 2018.*

### Dr. Dayal Pyari Srivastava

- **Top Altmetric Score, for the Week of May 8, 2017, International Journal of General Systems, Taylor and Francis, 2017.**

### Prof. Vibha Rani Satsangi

- **Certificate of Appreciation for Reviewing:**
  - *Solid State Sciences, Elsevier, 2014;*
  - *Intl. Journal of Hydrogen Energy, Elsevier, 2016*



# Awards and Recognitions: Faculty

## National

### Young Systems Scientist Award by the Systems Society of India

- *Dr. Dayal Pyari Srivastava, 2013*
- *Dr. Shiroman Prakash, 2014*
- *Dr. K. Soami Daya, 2016*

### Dr. Shiroman Prakash

- *Early Career Research Award, DST, 2017.*
- *Associateship, Intl. Centre for Theoretical Sciences, TIFR, Bengaluru, 2017.*
- *DST INSPIRE Faculty Award, 2014.*

### Dr. Dayal Pyari Srivastava

- *Raj Kumar Varshney Award, Systems Society of India, 2016.*

### Prof. Sukhdev Roy

- *National Systems Gold Medal, Systems Society of India, 2016.*
- *IETE-Smt. Manorama Rathore Memorial Award, 2016.*



SSI-Varshney Award-2016



From Dr. A.S. Kiran Kumar,  
Chairman, ISRO



# Awards and Recognitions: Faculty

## A. Fellows of Professional Bodies

: 05

1. *Dr. Shiroman Prakash* : Royal Astronomical Society, London, 2018
2. *Prof. V.R. Satsangi*: International Association of Hydrogen Energy, 2015
3. *Prof. Sukhdev Roy* : National Academy of Sciences, India (NASI), 2016
4. *Prof. Sukhdev Roy* : Indian National Academy of Engineering (INAE), 2013
5. *Prof. Sukhdev Roy* : Inst. of Electronics & Telecommun. Engineers (IETE), 2013

## B. Members of Editorial Boards of Journals

: 02

*Prof. Sukhdev Roy* :

1. *Associate Editor, IEEE Access – A Multidisciplinary Open Access Journal (IF: 4.098)*
2. *Optics and Photonics Journal*

## C. Members of Review Boards of Journals

: 35

*Nature Communications, RSC Advances, Nanoscale, Nanophotonics, Optics Exp., Optics Commun., IEEE J. Quantum Electronics, IEEE Photonics, IEEE Trans. Neural Networks, Intl. J. Hydrogen Energy, Photonics Journal, Chemical Physics, J. of Photochem. & Photobiol. B: Biology, Dyes and Pigments, Intl. J. General Relativity and Gravitation, Mathematical Reviews, etc.*



# Awards and Recognitions: Students

## International:

1. **Nirat**, *Doctoral Fellowship, Univ. of Maryland, College Park, USA, 2017.*
2. **Saatviki Gupta**, *EPSRC Global Challenges Research Fund Institutional Sponsorship Award, Univ. of Liverpool, UK, 2016.*
3. **Aadesh P. Singh**, *Researcher*, at Engineered Nanosystems Group, Aalto University, Espoo, Finland.
4. **Saatviki Gupta**, *DST-IUSTF Bhaskar Advanced Solar Energy Fellowship, University of Texas at Austin, USA, 2014.*
5. **B. Binathi**, *CERN Openlab Summer Student Fellowship, Geneva, 2014.*

## National:

1. **Dayal Pyari Srivastava**, *Young Systems Scientist Award, Indian Students' Systems Conference (PARITANTRA), DEI, Agra, 2013 and 2012.*
2. **Sonal Sahai**, *Post-Doc., DEI, G.C. Jain Memorial Prize for Best PhD Thesis in Materials Science-2014.*
3. **Sonal Sahai**, *HEAM-Young Scientist Award, by Indian Association of Hydrogen Energy and Advanced Materials, 2015.*
4. **Aadesh P. Srivastava**, *HEAM-Young Scientist Award, by Indian Association of Hydrogen Energy and Advanced Materials, 2014.*
5. & 6. *INSPIRE Faculty Award* **Saatviki Gupta** (2017), **Purnima Sethi**, (2018).



# Awards and Recognitions: Students

## Best Paper Awards:

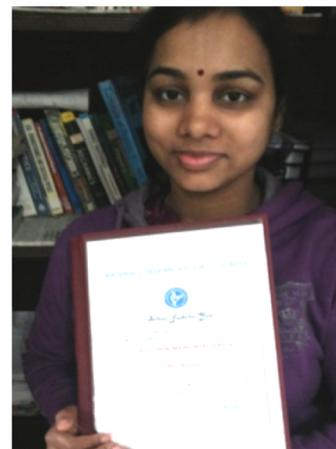
- 1. Purnima Sethi, IEEE Workshop on Recent Advances in Photonics-2013, IIT Delhi, 2013.**
- 2. Ashi Ikram, Natl. Conf. on Recent Trends in Chem. & Env. Sci., Arni Univ., Kangra, 2014.**
- 3. Chandresh Yadav, Intl. Conf. on Optics & Optoelectronics, IRDE Dehradun, 2014.**
- 4. Manoj Kumar Gupta, International Conference on Emerging trends of Engineering, Science, Management and its applications , 2016.**
- 5. Pragyesh Kumar, International Conference on Innovative Research in Engineering, Science and Management, 2016.**
- 6. Priti Gupta, National Conference on Brain, Mind and Consciousness, DEI, Agra, 2014.**
- 7. Prem Pyari Tewari, ASAR International Conference, New Delhi, 2017.**



# Awards and Recognitions: Students



**Dr. Dayal Pyari Srivastava receiving the Young Systems Scientist Award for Graph theoretic quantum system modeling for neuronal microtubules as hierarchical clustered quantum Hopfield networks, SSI, 2013**



**Dr. Sonal Sahai with the Best PhD Thesis Award, 2014**



**Ashi Ikram receiving the Best Paper Award, Natl. Conf. on Recent Trends in Chem. & Env. Sci., Arni Univ., Kangra, 2014.**



# Awards and Recognitions: Students

## Fellowships

- *DST-INSPIRE Faculty Award* : 02
- *Summer Research Fellowships* : 21  
(CERN, UMD, Florida, IISc., JNCASR, IPR, IIST, Delhi, IITD)
- *Post-Doctoral* : 02  
(Liverpool, IISc.)

## Invited Talks : Abroad : 09

(UMD College Park, Arizona State Univ., MPI Polymer Research, Liverpool, Univ. of Tokyo, Univ. of Tsukuba, NIMS, Tsukuba, Univ. of California, San Diego)

## Invited Talks : India : 03

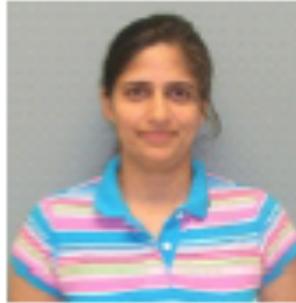
(IITK, IISER-Pune, IISER-Mohali)



# Some Distinguished Alumni



**Yogeshwar Kosta**  
*Provost (Vice Chancellor)*  
*Marwadi University*  
*Rajkot*



**Poonam Chandra**  
*Assoc. Prof. - G*  
*NCRA, TIFR*



**Saran Prasad**  
*MD, Tech. Client Service*  
*Accenture, Delhi*



**Vijay Madan**  
*Director*  
*Capgemini, Mumbai*



**Chandral Pal Singh**  
*Scientific Officer F*  
*RRCAT, Indore*



**Parag Sharma**  
*Scientist C,*  
*National Physical Lab.*  
*New Delhi*



**Ashish Sethia**  
*Vice-President*  
*Accenture*  
*Bengaluru*



**Shobha Bhasin**  
*Vice-President*  
*Small Business Banking*  
*Bank of America, NJ, USA*



# 1. Curricular Aspects

## Major Goals of DEI's Vision 2031 Academic Plan :

- *Strengthen Entrepreneurial Education*
- *Integrate Agricultural Farming and Dairy Education with Entrepreneurial and Consciousness Studies*
- *Emerge as a leader in Entrepreneurial and Consciousness Studies*

## Department's Efforts to Realize the Goals :

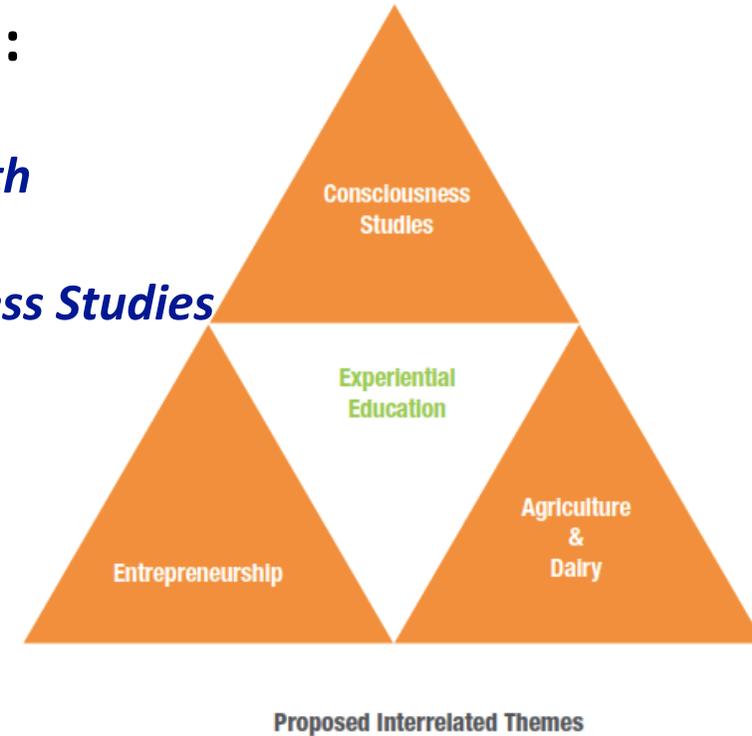
### 1. Strengths of Syllabi offered

- *Core and Ancillary Courses*
- *Elective and Self-Study Courses*
- *Emphasis on Entrepreneurship and Skill Enhancement*
- *Focus on both Academic and Societal Relevance*
- *More emphasis on Experiential Education*

### 2. New Programmes and Courses (*Compulsory and Electives*)

*Electives in all UG, PG, MPhil., PhD Programmes*

### 3. Research Focus on Bio-Inspired Systems and Consciousness Studies





# 1. Curricular Aspects

## 1. New Programmes Introduced

- **UG Programmes** : 03
  - *B.Voc. in Internet of Things* : 2017
  - *B.Voc. in Telematics* : 2018
  - *B.Voc. In Telecommunications* : 2019

## 2. New Courses (*Compulsory and Electives*)

- *Curriculum Development Workshop in Physics* : 2014  
*External Experts : IISc., TIFR, IIT Kanpur, Delhi Univ.*  
M.Sc. : *Quantum Systems Modeling, Quantum Field Theory, Astrophysics & General Relativity , String Theory*

- *Curriculum Review Workshop in Computer Science* : 2015  
*External Experts : IIT Delhi*  
Entire syllabus extensively reviewed

## 3. Strengths

- *Flexible structure of UG/PG Programs through Electives*
- *Focus on Employability/Entrepreneurship/Skill Development through compulsory Work-based Training Courses, Internships/Summer Trainings*

Courses offered jointly with  
Dept. of CSE, IIT Delhi

1. *Media Processing*
2. *Intelligent Information Processing*  
for M.Sc. Computer Science, M.Phil., B.Tech.





# 2. Teaching-Learning-Evaluation

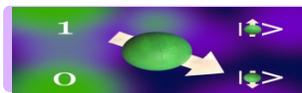
## Innovations in Teaching

- **Special Programmes for advanced learners and slow learners**
  - *UGRA, encouragement for research at UG/PG level-projects*
  - *Collaboration and visits to Institutes with MoUs*
  - *Vertical and Lateral entry*
  - *Extra, Remedial, Tutorial, support from Senior students, e-resources, encouragement for soft and social skills*
- **Student-centric methods:** such as experiential learning, participative learning and problem solving methodologies
  - **Teaching Methodology:** *GDs, Group Projects, Self-Study, Field work, case analysis, term papers, active learning, multimedia aids, research colloquia.*
  - **Experience-based Learning :** *Learning by doing: Work-based Training, Co-op, performing arts courses, vocational & skill courses, ICT courses, RDC, Agricultural Operations. neighborhood schools.*
  - **Learner-centred modes:** *Vidyaprasar, e-dei-de, Virtual and remote labs., MOOCSKENE-Bharat, variety of elective courses*
  - **Co-Scholastic Learning Components:** *co-curricular activities, games and sports, yoga, community outreach, field and industrial visits, creative and problem solving contests (hackathon), Business Advisory Clinic,*
  - **Specialized Centres of Learning :** *Quantum-Nano Systems Centre, e-Validate Lab., ICNC-TALL, 5G, IOT, AI and Robotics Labs, Quantum Jugaad Centre, Virtual and Entrepreneurship Centre*
- **Learning Outcomes :** Program outcomes, Program specific outcomes and course outcomes are stated and displayed on website and communicated to teachers.
- **Evaluation :** **New innovative features added :** *DHAs, Weekly Class Assignments, Online Quiz Tests and Evaluation Grading, Moderation, Remedial Exams, Online viva-voce exams (Major PG Projects, MPhil, PhD) through video-conferencing in India and abroad.*
- **E-Resources Developed :** *Video-courses recorded and modules, e-books*



# 3. Research, Innovation and Extension

## Thrust Areas



**Quantum Information Systems**



**Solar Hydrogen Energy**



**Nano-Biophotonics, Ultrafast Phenomena**



**String Theory, Astro & High Energy Physics**



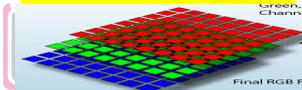
**VLSI Design, Neuromorphic Devices**



**Microwave Devices, Biosensors**



**Neural Networks & Soft Computing**



**Image Processing & Decision Support Sysys.**



**Science of Consciousness**

## New Research Areas Established

- **Graph Theoretic Quantum Systems Modeling for Information Processing Circuits**
- **String Theory**
- **Neuro-Photonics**



# Research Projects

## Resource Mobilization

*Annual Maintenance Grant : Rs. 6.60 lakhs*

### Funds Generated

#### External R & D Projects

*Projects Completed : Rs. 4.55 crores*

*Projects In Progress : Rs. 1.42 crores*

*UGC-Indo-US : Arizona State University, Tempe, USA (2015-18)*

*DST-DFG Project : University of Kiel, Germany (2012-2014)*

**Funding Agencies : DST, MHRD, UGC-SAP, NSF, DAE, DIT, AADEI**

#### Internal-Institute

*Rs. 5 lakhs*

*Rs. 71 lakhs*

## Major Funding

- **DST-FIST** : 1.20 crores (2009-14)
- **UGC-SAP-DRS-II** : 0.67 crores (2009-14)
- **MHRD-NMEICT** : 20.48 crores (8 Projects completed in 2012)
- **UGC-SAP-III** : 1.4 crores (2018-2023)

**Thrust Area : Nano-Photonics and Biosystems**

- **DST (TSD)** : 90.45 Lakhs



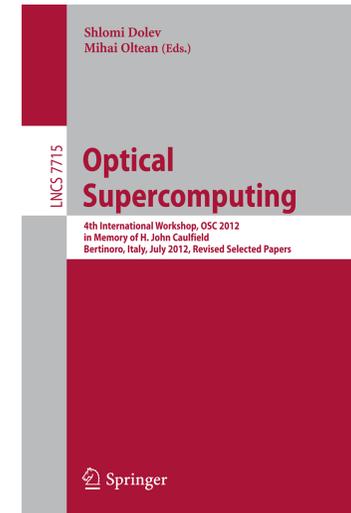
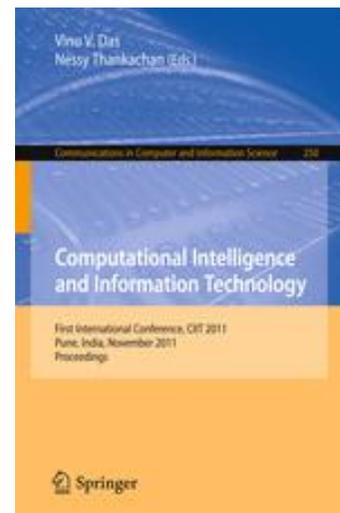
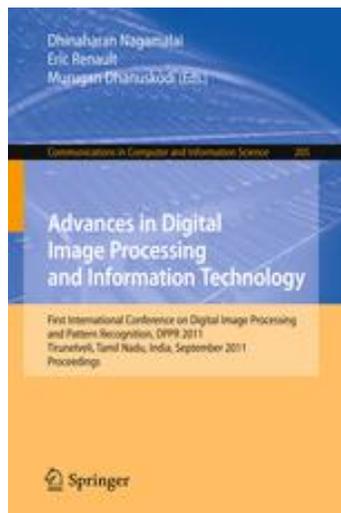
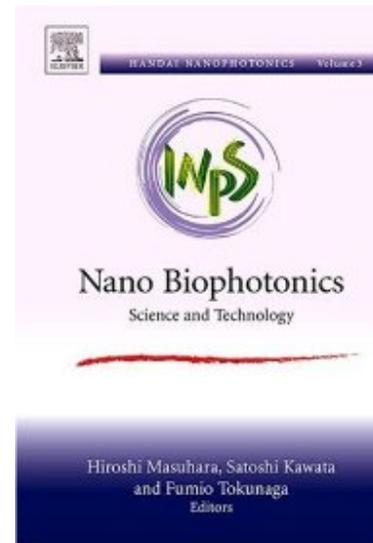
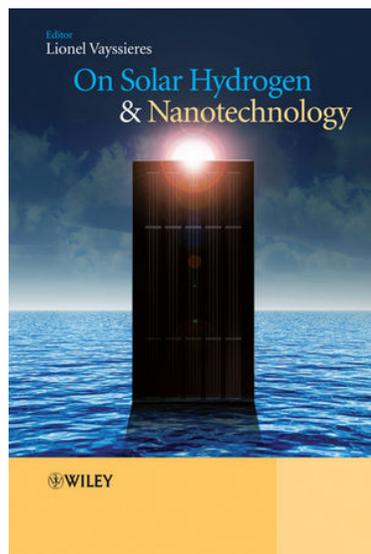
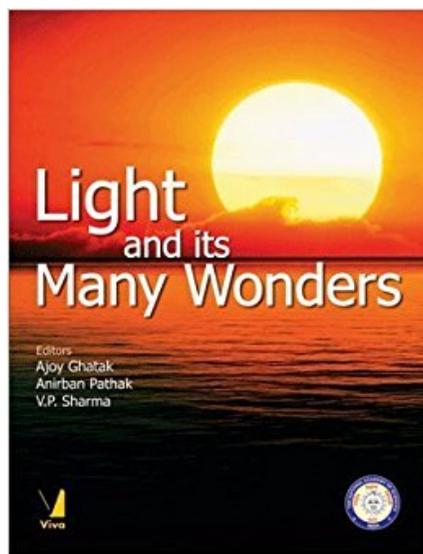
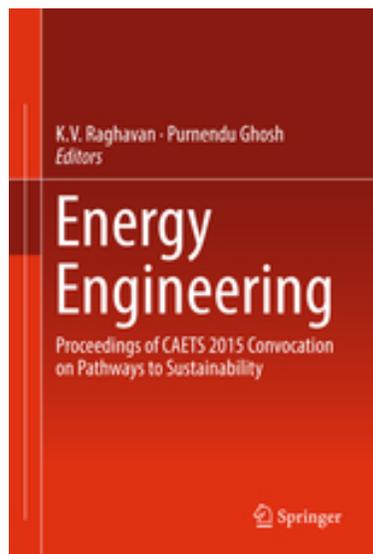
# Research Publications

- **Journals** : **137**
  - **Intl./Natl. Conf. Proc.** : **24**
  - **E-Books/Book Chapters** : **11**
  - **h-index** : **5-19**
  - **Patent** : **01** *Magnetically Tunable Planar Microwave Device on Non-magnetic Dielectric Substrate and a Method of Magnetic Tuning Thereof*
- ## Research Citations
- **In Journals** : **Total : 2448, Individual Paper: 290**

S.No.	Journal	Impact Factor, 2018
1.	<i>Applied Catalysis B: Environmental</i>	<b>14.229</b>
2.	<i>Renewable &amp; Sustainable Energy Reviews</i>	<b>10.556</b>
3.	<i>IEEE Trans. Fuzzy Systems</i>	<b>8.759</b>
4.	<i>Journal of Catalysis</i>	<b>7.723</b>
5.	<i>Journal of High Energy Physics</i>	<b>5.541</b>
6.	<i>Renewable Energy</i>	<b>5.439</b>
7.	<i>European Physical Journal C</i>	<b>4.843</b>
8.	<i>IEEE J. Selected Topics in Quantum Electronics</i>	<b>4.682</b>
9.	<i>Expert Systems with Applications</i>	<b>4.292</b>
10.	<i>Neurophotonics</i>	<b>4.129</b>



# Book Chapters





# Research Output

- PhDs Awarded : 17
- PhDs Enrolled : 42 + 3 (*Co-supervision with MSU, Kiel, IITD*)

## Organization/Co-organization of Scientific Events

- International Conferences/Workshops : 15**
- National Confs./Workshops/Seminars : 14**
- Distinguished Visitors : 09**
  - Prof. Juan Maldacena, Institute for Advanced Studies, Princeton, USA*
  - Prof. Amanda Cooper Sarkar, Oxford University, UK*
  - Dr. Esha Manne, Jet Propulsion Lab., Pasadena, USA*
  - Prof. Ashok Sen, FRS, HRI, Allahabad*
  - Prof. Sandip Trivedi, Director, TIFR, Mumbai*
  - Prof. Sunil Gupta, TIFR, Mumbai*
  - Prof. Ajoy K. Ghatak, IIT Delhi*
  - Prof. Ambar Chatterjee, IUAC, New Delhi*
  - Ms. Dimple Balraj, Google Program Manager*

### EMERITUS PATRON

Prof. P.S. Satsangl  
Chairman, Advisory Committee on Education  
Dayalbagh Educational Institutions

### PATRON

Prof. P.K. Kalra, Director DEI

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Prof. Indranil Manna, Director, IIT Kanpur  
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Prof. Jack Tuszynski, University of Alberta, Canada  
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Prof. Peter H. Roe, University of Waterloo  
Shri M.A. Pathan, Chairman, Tata Petrodyne

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Dr. Terence Stewart, University of Waterloo  
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Ms. Sneha Brijlani, DEI, Agra  
Dr. Rahul Sharma, DEI, Agra  
Dr. Dayal Pyari Srivastava, DEI, Agra  
Dr. Bani Dayal Dhir, DEI, Agra, *Forum Coordinator*  
Dr. Vishal Sahni, DEI, Agra, *Convener*

### ADDRESS FOR CORRESPONDENCE

Dr. Vishal Sahni  
Convener, QANSAS-2015  
Dayalbagh Educational Institute (Deemed University)  
Dayalbagh, Agra - 282 005  
e-mail: qansas2015@gmail.com

INTERNATIONAL SCHOOL ON  
Quantum & Nano Computing  
Systems and Applications

**QANSAS**  
**2018**

NOVEMBER 21 - 24, 2018

(with a Special Forum on Consciousness :  
Integrating Eastern and Western Perspectives on  
November 21, 2018)



Host Institution  
Dayalbagh Educational Institute (Deemed University)  
Dayalbagh, Agra - 282 005  
<http://www.dei.ac.in/dei/quantumNano/>

Sponsored by  
Quantum-Nano Systems Centre  
Research and Technology Park  
Dayalbagh Educational Institute



# Research Collaborations

## International

*Collaborative Work undertaken/in progress with research groups at:*

1. **Harvard University, USA**



2. **Stanford University, USA**



3. **Princeton University, USA**



4. **Michigan State University, USA**



5. **Univ. of California Santa Barbara, USA**



6. **University of Maryland, College Park, USA**



7. **Arizona State University, Tempe, USA**



8. **University of Waterloo, Canada**



9. **Max Planck Institute for Science of Light,**



10. **National Institute for Material Science, Tsukuba, Japan**



11. **Hokkaido University, Sapporo, Japan**



12. **University of Kiel, Germany**





# Research Collaborations

## National

1. **TIFR, Mumbai** - MoU
2. **TIFR, Bengaluru**
3. **IISc., Bengaluru**
4. **JNCASR, Bengaluru**
5. **IIT Delhi**
6. **IIT Kanpur**
7. **Inter-University Accelerator Centre, New Delhi**
8. **National Physical Lab., New Delhi**
9. **CDAC, Pune**
10. **Indian Oil Corporation, Faridabad**





# Research Collaborations

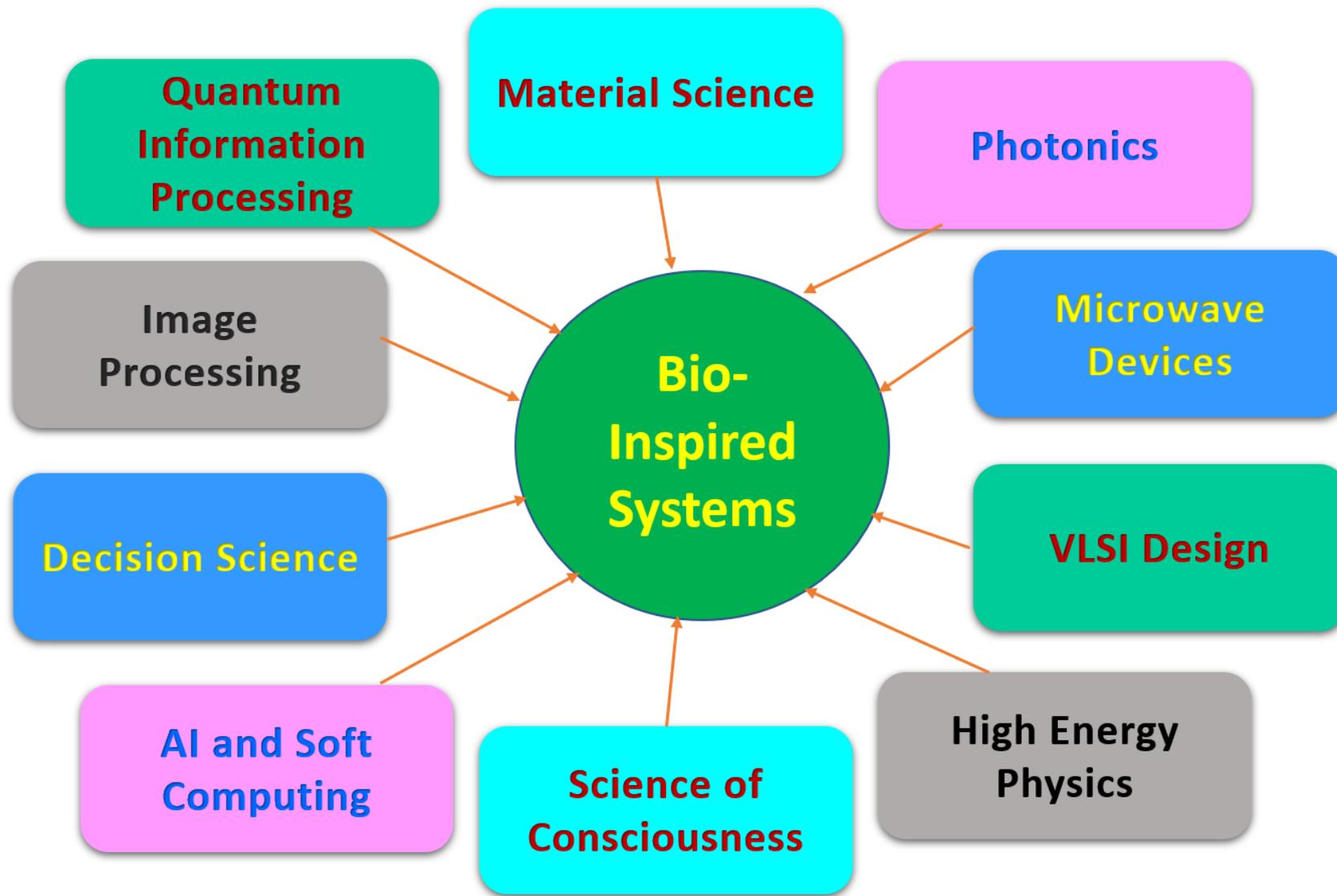
## Inter-Departmental

- 1. Botany :** *Photodynamic Therapy*
- 2. Chemistry:** *PEC Splitting of Water to generate Hydrogen*
- 3. Mathematics:** *Soft Computing, Topology, Bio-Mathematics*
- 4. Zoology :** *Neuroscience*
- 5. English :** *i-c-n-c-Tall*
- 6. Sanskrit :** *Theology*
- 7. Music :** *Psychophysiological impact of Ragas*
- 8. Psychology :** *Psychophysics, Cognitive Science*
- 9. Electrical Engineering:** *Image Processing*
- 10. Quantum and Nano Systems Centre**
- 11. Centre for Consciousness Studies**



# 3. Research, Innovation and Extension

The department is committed to explore new ways of research and contribute to the current understanding of PCS through significant findings





# Extension and Outreach Activities

- ❑ Voluntary Daily work in Agriculture Fields
- ❑ Free Tutorial Services at Day Boarding School
- ❑ Voluntary Social Service in Dayalbagh neighborhood
- ❑ Logistic support for Surveillance Services in Dayalbagh
- ❑ Logistic Support for e-transmissions of ODL classes
  - ❑ *Medical Camps (Hole in the wall project)*
  - ❑ *Telemedicine Services*
  - ❑ *Day Boarding School Transmissions*



Frugal Science project at Rajaborari (MP)

- ❑ Education through Foldscope project to tribal children in Rajaborari, MP, in collaboration with **Stanford University, USA**
- ❑ Biometric identification of infants and children in collaboration with **Michigan State University, USA**
- ❑ Providing support for ICT facilities at Rajaborari, MP and Timarni, MP.
- ❑ Video recoding of courses for school children in Murar, Bihar.
- ❑ Nuclear Electronics laboratory organizes winter camps for class XII students, and Summer Workshop for class XII on ASTROPHYSICS.
- ❑ Nodal Officer, Digital India, Govt. of India Campaign



# 4. Infrastructure & Learning Resources

S.No.	Infrastructure Head	Department/Centre/Faculty Details
1.	Library (Books, Journals (INFLIBNET))	5,000 books
2.	Internet Facilities for staff and students	Yes
3.	Total No. of Rooms	20
4.	Classrooms with ICT facility	Yes
5.	Laboratories	15





# 4. Infrastructure and Learning Resources

## New Facilities/Labs./Major Equipment Added

1. **Indigenously Designed Remote Triggered – Analog Communication Electronics (RT-ACE) Lab., 2013.**  
*Cited as Most Promising Technique of 2013 by Agilent Technologies*
2. **5G Laboratory, 2016.**
3. **IOT Laboratory, 2018.**
4. **Dayalbagh Extensive Air Shower Array (In progress).**



5G Lab.



'e-VALIDATE' Lab Machine  
Design, Developed & Deployed @ DEI



# 4. Infrastructure and Learning Resources

## New Initiatives

**IoT Lab (2018):** provides working with IoT devices and sensors like weather monitoring sensor, healthcare sensor, to help analysing real-time information

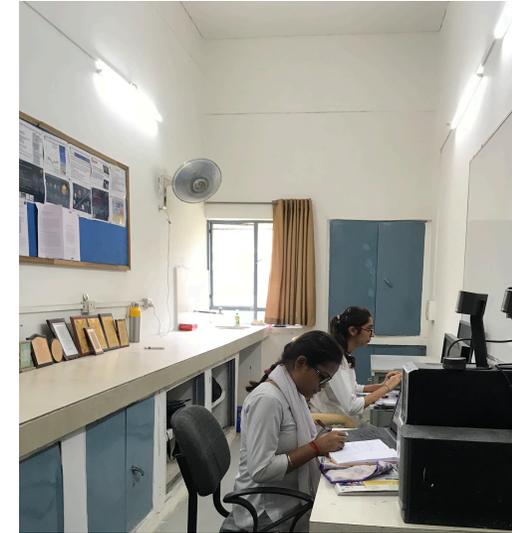




# 4. Infrastructure and Learning Resources

## The Computing Laboratory

- Desktop Systems **24**  
Dell Vostro 230, Intel Core2 Duo, 2 GB RAM,  
32-bits O.S., 500GB, based on windows OS
- Servers (Windows 2008 and Linux) **02**
- Switches –
  1. D-Link 24 Ports **01**
  2. Cisco 24 Ports **01**
- Sony LCD TV 42” **01**
- Canon Printer Multi-Function **01**
- Software – Visual Studio – 6.0, SQL Server 2007



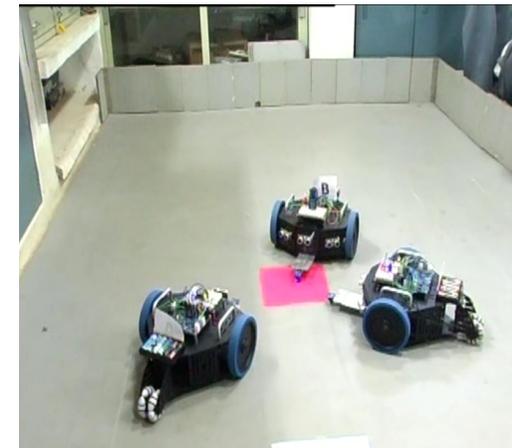
Quantum Computing Lab.



Microwave Lab.



Image Processing Lab.



Neural Networks & Robotics Lab.



# 5. Student Support and Progression

## Scholarship/Fellowships :

JRF	: 02
UGC-BSR	: 05
DST-Inspire	: 02
Others	: 03

## New Initiatives

### 1. Under-Graduate Research Award (UGRA)

- *5-6 bright students selected annually from Science and Engg. in research areas of the Department*
- *Stipend awarded Rs. 10,000/- by AADEIs*

### 2. Partial Support from R & D Projects

### 3. Encouragement for Summer Fellowships/internships

### 4. Mentoring of UG/PG Students for research competitions

### 5. Formation of IEEE Women in Engineering Group

### 6. Encouragement for participation in International and National Conferences:

**TSC, Paritantra, NSS, etc.**



# 5. Student Support and Progression

## Success in National Competitive Exams

- **UGC-CSIR NET** : 11
- **GATE** : 11
- **JEST/JAM/GRE/TOEFL** : 07

## Placement

- **Universities/Colleges** : 20  
*IISc., Bangalore, Delhi, JNTU, NIT Hamirpur, Agra, Amity, Invertis, Datia, Cheyyeru, Andra Pradesh*
- **Research Laboratories** : 05  
*NPL, SSPL, BARC, NSC*
- **Industry** : 30  
*TCS, Headstrong, Genpact, Infosys, Cadence, SAP, Accenture, Concentrix*



# 6. Governance, Leadership & Management

## Departmental Committees

- *Class Committees*
- *Proctors*
- *Programme Coordinators*
- *Time-Table Committee*
- *Moderation Committees*
- *Board of Studies*

- **Distributive and Participative Management**
- **Transparency at all levels**

## *Members of Institute and Faculty Committees*

- *Dr. K. Soami Daya, Dean, Planning and Development*
- *Prof. Vibha Rani Satsangi, Dean, Faculty of Science*
- *Prof. Vibha Rani Satsangi, Dean, PG Studies*



# 7. Innovative Practices & Best Practices

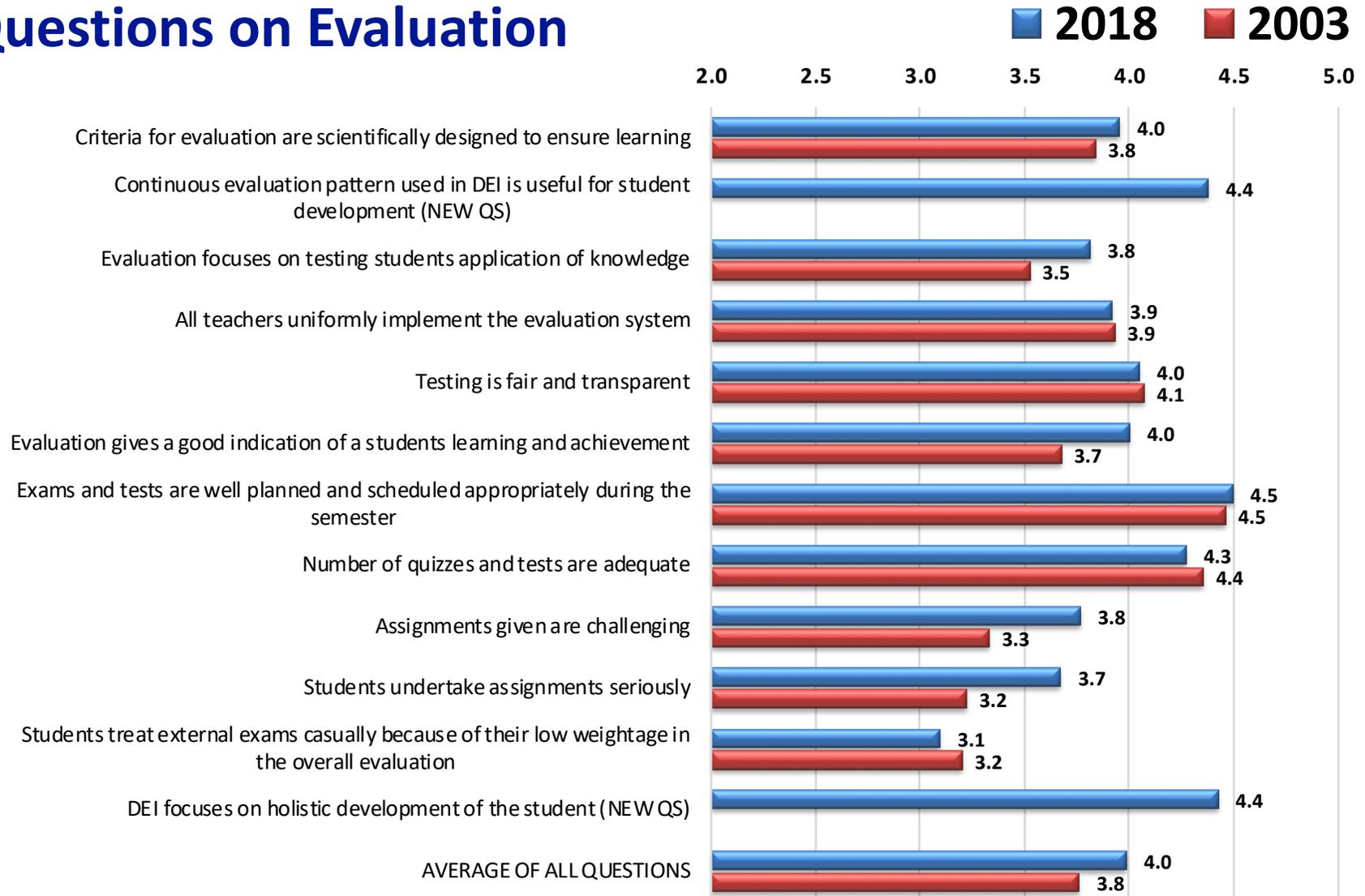
## Innovative Practices

- *Joint courses with IITD*
- *Joint supervision of PhD with IITD and UNC Wilmington*
- *Active Learning*
- *Emphasis on Entrepreneurship and Skill Development*
- *Trans-disciplinary Research Programmes*
- *Weekly Research Colloquia*
- *Research promotion at UG level : UGRA*
- *Publication of research in projects by PG students*
- *Encouragement to UG students for Summer Research Fellowships*
- *Interdisciplinary collaborative research:*
  - *Inter-Departmental and Inter-Institutional*
  - *Theoretical and Experimental*
- *Generation of Funds through Extra-Mural Grants*



# Alumni Survey : 2018

## Questions on Evaluation

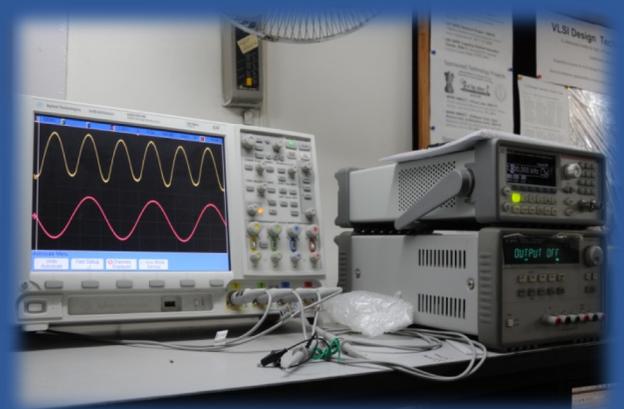
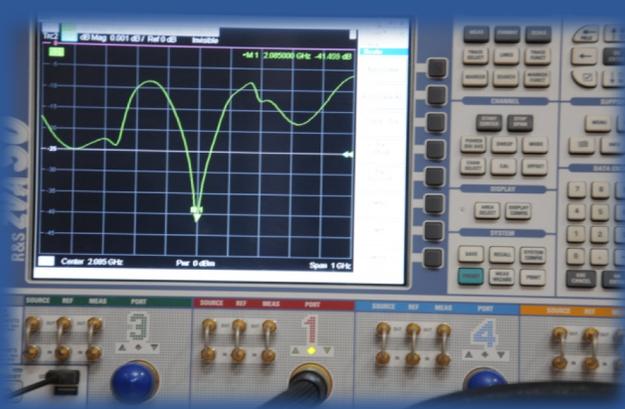




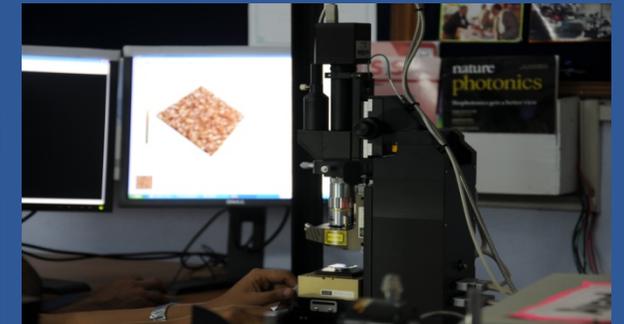
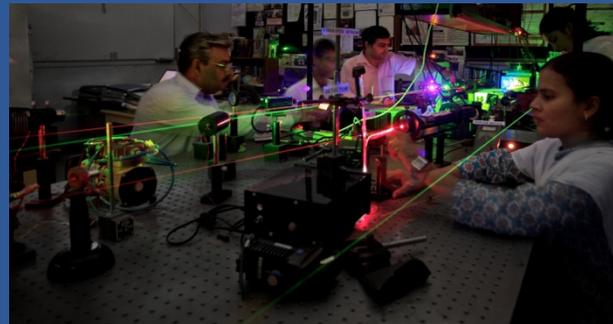
# Future Plan of Action

## Vision – 2031

- All-round contribution to achieve DEI's and National Vision
- Lead trans-/multi-disciplinary research in :
  - *Quantum Information Systems*
  - *Science of Consciousness*
- Recognition of Department as :
  - *Centre for Advanced Study in Bio-Inspired Systems*



## Moving into the Future



*To be a Centre of Excellence in Teaching and Research*

**Department of Physics and Computer Science**



Thank You