## **Annual Quality Assurance Report**

AY 2013-2014





VIT- A place to learn; A chance to grow

## **Annual Quality Assurance Report**

Submitted

То

## **National Assessment and Accreditation Council**



AY 2013-2014

## Part - A

### 1. Details of the Institution

| 1.1 Name of the Institution         | : VIT University                     |  |  |  |  |  |
|-------------------------------------|--------------------------------------|--|--|--|--|--|
| 1.2 Address Line                    | : Katpadi, Thiruvallam road, Katpadi |  |  |  |  |  |
| Address Line 2                      | :                                    |  |  |  |  |  |
| City/Town                           | : Vellore                            |  |  |  |  |  |
| State                               | : Tamil Nadu                         |  |  |  |  |  |
| Pin Code                            | : 632 014                            |  |  |  |  |  |
| Institution e-mail address          | : registrar@vit.ac.in                |  |  |  |  |  |
| Contact Nos.                        | : +91 9566656773                     |  |  |  |  |  |
|                                     |                                      |  |  |  |  |  |
| Name of the Head of the Institution | : V.Raju, Vice Chancellor            |  |  |  |  |  |
| Tel. No. with STD Code              | <b>:</b> +91 416 2202921             |  |  |  |  |  |
| Mobile                              | : -                                  |  |  |  |  |  |
| Name of the IQAC Co-coordinator     | : Dr. G.Jayaraman                    |  |  |  |  |  |
| Mobile                              | : +91 9944796904                     |  |  |  |  |  |
| IQAC e-mail address                 | : iis@vit.ac.in                      |  |  |  |  |  |
|                                     |                                      |  |  |  |  |  |

#### **1.3 NAAC Track ID** (For ex. MHCOGN 18879)

TNUNGN10093

EC/47/RAR/22

## 1.4 NAAC Executive Committee No. & Date:

(For Example EC/32/A&A/143 dated 3-5-2004. This EC no. is available in the right cornerbottom of your institution's Accreditation Certificate)

#### 1.5 Website address: http:// www.vit.ac.in

Web-link of the AQAR: http://www.vit.ac.in/Aboutus/IQAC/AQAR 2013-14 Pdf

#### **<u>1.6 Accreditation Details</u>**

| Sl. No. | Cycle                 | Grade                             | CGPA | Year of<br>Accreditation | Validity<br>Period |  |
|---------|-----------------------|-----------------------------------|------|--------------------------|--------------------|--|
| 1       | 1 <sup>st</sup> Cycle | B+                                | _    | 16.09.2003               | 5yrs               |  |
| 2       | 2 <sup>nd</sup> Cycle | А                                 | 3.25 | 29.01.2009               | 5yrs               |  |
| 3       | 3 <sup>rd</sup> Cycle | Visit scheduled Feb 24 – 26, 2015 |      |                          |                    |  |

#### **1.7 Date of Establishment of IQAC:** 09/03/2007

### 1.8 AQAR for the year (for example 2010-1): 2013-2014

Details of the previous year's AQAR submitted to NAAC after the latest Assessment and

Accreditation by NAAC ((for example AQAR 2010-11submitted to NAAC on 12-10-2011)

i. AQAR 2011 - 2012 30/10/2013

ii. AQAR 2012 - 2013 30/12/2013

### **1.10 Institutional Status**

| University – State –  | Central –            | Deemed - | - Private $$ |  |  |  |  |
|---|----------------------|----------|--------------|--|--|--|--|
| Affiliated College  | No                   |          |              |  |  |  |  |
| Constituent College   | No                   |          |              |  |  |  |  |
| Autonomous college of UGC   | No                   |          |              |  |  |  |  |
| Regulatory Agency approved Institution Yes<br>(eg. AICTE, BCI, MCI, PCI, NCI) |                      |          |              |  |  |  |  |
| Type of Institution <b>Co-ed</b>  | ucation <sub>V</sub> | Men _    | Women _      |  |  |  |  |
| Urban(Off-Campus) ✓ Tribal –<br>Rural (Main-Campus) ✓                         |                      |          |              |  |  |  |  |
| Financial Status Grant-in-  | aid                  |          |              |  |  |  |  |

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| Grant-in-aid + Self Financing Totally Self-fi                      | inancing $$    |  |  |  |  |
|--|----------------|--|--|--|--|
| 1.11 <u>Type of Faculty/Programme</u>                              |                |  |  |  |  |
| Arts $\checkmark$ Science $\checkmark$ Commerce $\checkmark$ Law – | PEI (PhysEdu)  |  |  |  |  |
| <b>TEI (Edu)</b> Engineering $\checkmark$ Health Science –         |                |  |  |  |  |
| Management $\checkmark$ Others (Specify) $-$                       |                |  |  |  |  |
| 1.12 Name of the Affiliating University (for the College)          | Not applicable |  |  |  |  |

## 1.13 Special status conferred by Central/ State Government-- UGC/CSIR/DST/DBT/ICMR etc

| Autonomy by State/Central Govt. / Unive   | rsity   |                         |              |
|---|---------|-------------------------|--------------|
| University with Potential for Excellence  | _       |                         | _            |
| DST Star Scheme                           | UGC-CPE |                         | _            |
| UGC-Special Assistance Programme          | - D     | ST-FIST                 | $\checkmark$ |
| UGC-Innovative PG programmes              | any o   | ther ( <i>Specify</i> ) | _            |
| UGC-COP Programmes                        | _       |                         |              |
| 2. IQAC Composition and Activities        |         |                         |              |
| 2.1 No. of Teachers                       | 9       |                         |              |
| 2.2 No. of Administrative/Technical staff | _       |                         |              |
| 2.3 No. of students                       | 1       |                         |              |

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| 2.4 No. of Management representatives                                | 1                                 |
|--|-----------------------------------|
| 2.5 No. of Alumni  | _                                 |
| 2.6 No. of any other stakeholder<br>and community<br>representatives | _                                 |
| 2.7 No. of Employers/ Industrialists                                 | _                                 |
| 2.8 No. of other External Experts                                    | 1                                 |
| 2.9 Total No. of members   | 12                                |
| 2.10 No. of IQAC meetings held                                       |                                   |
| <ul><li>2.11 No. of meetings with various No stakeholders:</li></ul> | - Faculty–4                       |
| Non-Teaching Staff Students –  | Alumini Other –                   |
| 2.12 Has IQAC received any funding from                              | n UGC during the year? Yes – No √ |

0

If yes, mention the amount

#### 2.13 Seminars and Conferences (only quality related)

| Total | international | National | State | Institution<br>Level |
|-------|---------------|----------|-------|----------------------|
| 2     | 0             | 0        | 0     | 2                    |

(i) No. of Seminars/Conferences/Workshops/Symposia organized by the IQAC

(ii) Themes (1) Innovation in teaching and collaborative learning

(2) Enhanced and creative learning

#### 2.14 Significant Activities and contributions made by IQAC

- (a) Researching quality check points in various processes
- (b) Research publication
- (c) Sponsored projects

#### 2.15 Plan of Action by IQAC/Outcome

The plan of action chalked out by the IQAC in the beginning of the year towards quality enhancement and the outcome achieved by the end of the year \*

| Plan of action                                   | Achievements                                  |
|--|---|
| Analyzing journal publication                    | Identified disciplines as high priority areas |
| Conduct of academic audit                        | Academic audit conducted both the semester    |
| Conduct and analyzing of quality circle meetings | Insisted on achiever taken reports            |
| Identification of slow learners                  | Insisted on special tutorials assignments     |

\* Attach the Academic Calendar of the year as Annexure.

| 2.15 Whether the AQAR was placed in statutory | Body Yes √     | No _ |
|---|----------------|------|
| Management $\checkmark$ Syndicate _           | any other body |      |
| Provide the details of the action taken       | _              |      |

## <u>Criterion – I</u>

#### 1. <u>Curricular Aspects</u>

#### <u>Part–B</u>

## **1.1 Details about Academic Programmes**

| Level of the<br>Programme | Number of<br>existing<br>Programmes | Number of<br>programmes<br>added during<br>the year | Number of<br>self-<br>financing<br>programme | Number of value<br>added / Career<br>Oriented<br>programmes |
|---------------------------|-------------------------------------|---|--|---|
| PhD                       | 1                                   | 0   | _  | 1   |
| PG                        | 30                                  | 4   | _  | 34  |
| UG                        | 18                                  | 0   |  | 18  |
| PG Diploma                | _                                   | _   | _  | _   |
| Advanced Diploma          | _                                   | _   | —  | _   |
| Diploma                   | _                                   | _   | _  | _   |
| Certificate               | _                                   | _   | —  | _   |
| Others                    | 2                                   | 0   | _  | 2   |
| Total                     | 51                                  | 4   | _  | 55  |
| Interdisciplinary         |                                     | 2   |  |   |
| Innovative                | _                                   | _   | _  |   |

### 1.2 (i) Flexibility of the Curriculum: CBCS/Core/Elective option / Open options

(ii) Pattern of programmes:

| Patter    | Number of Programmes |
|-----------|----------------------|
| Semester  | 2                    |
| Trimester | 1                    |
| Annual    |                      |

| 1.3 Feedback from | stake | eholders* | Alu          | mni 🗸  | Parents      | $\checkmark$ | Employers     | $\checkmark$ | Students  | $\checkmark$ |
|-------------------|-------|-----------|--------------|--------|--------------|--------------|---------------|--------------|-----------|--------------|
| (On all aspects)  |       |           |              |        |              |              | 1             |              |           |              |
| Mode of feedback  | :     | Online    | $\checkmark$ | Manual | $\checkmark$ | Co-o         | operating sch | ools         | (for PEI) | -            |

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## <u>1.4 Whether there is any revision/update of regulation or syllabi, if yes, mention their salient aspects.</u>

- > (As of the  $31^{st}$  Academic Council meeting held on 10/12/2013)
- Introduction of new programme electives of B.Tech and M.Tech (Biotechnology)
- Introduction of 'Genetic Counselling' in M.Sc.(Biomedical Genetics)
- > Approval of Curriculum & syllabus for M. Tech (Control and Automation)
- Revision of curriculum & syllabus for M. Tech (Power Electronics & Drive)
- Introduction of new elective course "Automated Test Engineering" for B. Tech (EEE and EIE)
- > Introduction of new elective "Neural Networks and Fuzzy control" for B.Tech (EIE)
- Inducting courses of B. Tech (EEE) into Program Electives: Distributed generation, Energy Management system & SCADA, Deregulation & restricted Power System
- Introduction of 2 year MCA programme

#### **<u>1.5 Any new Department/Centre introduced during the year. If yes, give details.</u></u>**

- Solar Energy Research Centre
- Centre for Biomaterials Science and Technology
- Center for Advanced Material Process and Testing

## <u> Criterion – II</u>

#### 2. Teaching, Learning and Evaluation

| 2.1 Total No. of permanent | Total | Asst.<br>Professors | Associate<br>Professors | Professor<br>s | Others |
|----------------------------|-------|---------------------|-------------------------|----------------|--------|
| faculty                    | 1743  | 883                 | 288                     | 206            | -      |

### **2.2 No. of permanent faculty with Ph.D**. 625

2.3 No. of Faculty Positions Recruited (R) and Vacant (V) during the year

2

3

| Asst.<br>Profe | essors | Associ<br>Profes | iate<br>ssors | Profe | essors | Othe | rs | Total |   |
|----------------|--------|------------------|---------------|-------|--------|------|----|-------|---|
| R              | V      | R                | V             | R     | V      | R    | V  | R     | V |
| 59             |        | 33               | Ι             | 15    | _      | 32   |    | 139   | — |

210

92

**2.4 No. of Guest and Visiting faculty and Temporary faculty**: 517

| S.No | No. of Faculty | International level | National level |
|------|----------------|---------------------|----------------|
| 1    | Attended       | 172                 | 460            |

#### 2.5 Faculty participation in conferences and symposia:

Presented papers

**Resource Persons** 

#### 2.6 <u>Innovative processes adopted by the institution in Teaching and Learning:</u>

- ➢ Use of learning management system
- > Participatory learning using the PBL and RBL mode with presentation in SET Conference

176

21

- > Encouraging students to publish their original work in leading scientific journals.
- Semester abroad programme for students
- Encouraging faculty members to undergo online Certificate Courses offered by leading Universities Laboratory Demonstration
- Field Visit / Industrial Demonstration on Advanced Technologies

**State level** 

59

50

16

> Make-a-Thon competitions for students for proof of concept studies

| 2.7 Total No. of actual teaching                                       | 144 |
|--|-----|
| Days during this academic year   |     |
| 2.8 Examination/ Evaluation<br>Reforms initiated by the<br>Institution | Yes |

Open Book Examination, Double Valuation, Photocopy, and Multiple Choice Questions

### 2.9 No. of faculty members involved in curriculum restructuring/revision/syllabus Development as member of Board of Study/Faculty/Curriculum Development W o r k s h o p :

223 (The Dean, Programme chairs, professors and course coordinators are in involved in the process.)

## 2.10 Average percentage of attendance of student: 85%

### 2.11 Course/Programme wise distribution of pass percentage:

| S.No | Branch | Course  | Appeared | Distinction (>9.0) | I<br>(>6.0) | II | III | Total<br>Pass |
|------|--------|---|----------|--------------------|-------------|----|-----|---------------|
| 1    | B.B.A. | Bachelor of Business<br>Administration          | 73       | 1                  | 42          | _  | _   | 42            |
| 2    | B.C.A. | Bachelor of Computer<br>Applications            | 127      | 14                 | 93          | _  | _   | 93            |
| 3    | B.Com  | Bachelor of Commerce<br>(Computer Applications) | 164      | 15                 | 106         | _  | _   | 106           |
| 4    | B.Sc   | Computer Science                                | 182      | 14                 | 90          | _  | _   | 90            |
| 5    | B.Sc   | Multimedia and Animation                        | 32       | 1                  | 14          | _  | _   | 15            |
| 6    | B.Tech | Bioinformatics                                  | 51       | 1                  | 46          | _  | -   | 46            |
| 7    | B.Tech | Biomedical Engineering                          | 57       | 7                  | 30          | _  | _   | 30            |
| 8    | B.Tech | Biotechnology                                   | 195      | 21                 | 178         | _  | _   | 178           |
| 9    | B.Tech | Civil Engineering                               | 177      | 20                 | 149         | _  | _   | 149           |
| 10   | B.Tech | Computer Science and Engineering                | 605      | 164                | 556         | _  | —   | 556           |

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| S.No | Branch                         | Course   | Appeared | Distinction (>9.0) | I<br>(>6.0) | II | III | Total<br>Pass |
|------|--------------------------------|--|----------|--------------------|-------------|----|-----|---------------|
| 11   | B.Tech                         | Electrical and Electronics<br>Engineering                            | 280      | 82                 | 261         | _  | _   | 261           |
| 12   | B.Tech                         | Electronics and<br>Communication Engineering                         | 575      | 103                | 505         | _  | _   | 505           |
| 13   | B.Tech                         | Electronics and<br>Instrumentation Engineering                       | 125      | 16                 | 111         | _  | _   | 111           |
| 14   | B.Tech                         | Information Technology   | 255      | 53                 | 227         | _  | —   | 227           |
| 15   | B.Tech                         | Mechanical Engineering   | 558      | 158                | 510         | —  | —   | 510           |
| 16   | B.Tech                         | Mechanical with<br>Specialization in Automotive<br>Engineering       | 56       | 0                  | 47          | _  | _   | 47            |
| 17   | B.Tech                         | Mechanical with<br>Specialization in Chemical<br>Process Engineering | 66       | 8                  | 55          | _  | _   | 55            |
| 18   | B.Tech                         | Mechanical with<br>Specialization in Energy<br>Engineering           | 107      | 10                 | 90          | _  | _   | 90            |
| 19   | M.C.A.                         | Master of Computer<br>Applications                                   | 264      | 27                 | 243         | _  | _   | 243           |
| 20   | M.S.                           | M.S.(Software Engineering)   | 285      | 20                 | 227         | _  | —   | 227           |
| 21   | M.Sc                           | Applied Microbiology   | 68       | 13                 | 64          | _  | —   | 64            |
| 22   | M.Sc                           | Biomedical Genetics  | 54       | 9                  | 45          | _  | _   | 45            |
| 23   | M.Sc                           | Biotechnology  | 126      | 24                 | 111         | _  | —   | 111           |
| 24   | M.Sc                           | Chemistry  | 30       | 9                  | 25          | _  | _   | 25            |
| 25   | M.Sc                           | Computer Science   | 71       | 6                  | 57          | _  | _   | 57            |
| 26   | M.Sc                           | Electronics  | 23       | 3                  | 20          | _  | _   | 20            |
| 27   | M.Sc                           | Pharmaceutical Chemistry   | 8        | 6                  | 6           | _  | _   | 6             |
| 28   | M.Sc (5<br>Year<br>Integrated) | Biotechnology  | 60       | 8                  | 47          | _  | _   | 47            |
| 29   | M.Tech                         | Automotive Electronics   | 45       | 6                  | 43          | _  | _   | 44            |
| 30   | M.Tech                         | Automotive Engineering   | 50       | 0                  | 50          | _  | _   | 50            |
| 31   | M.Tech                         | Biomedical Engineering   | 35       | 8                  | 32          | _  | _   | 32            |
| 32   | M.Tech                         | Biotechnology  | 72       | 14                 | 72          | _  | _   | 72            |
| 33   | M.Tech                         | CAD / CAM  | 72       | 16                 | 68          | _  | _   | 68            |
| 34   | M.Tech                         | Communication Engineering  | 74       | 4                  | 71          | _  | _   | 71            |
| 35   | M.Tech                         | Computer Science and<br>Engineering                                  | 153      | 30                 | 149         | _  | _   | 149           |
| 36   | M.Tech                         | Energy and Environmental<br>Engineering                              | 41       | 3                  | 39          | _  | _   | 39            |

| S.No | Branch                 | Course   | Appeared | Distinction<br>(>9.0) | I<br>(>6.0) | II | III | Total<br>Pass |
|------|------------------------|--|----------|-----------------------|-------------|----|-----|---------------|
| 37   | M.Tech                 | Information<br>Technology(Networking)          | 75       | 7                     | 74          | _  | _   | 74            |
| 38   | M.Tech                 | Manufacturing Engineering                      | 45       | 6                     | 43          | _  | _   | 43            |
| 39   | M.Tech                 | Mechatronics                                   | 40       | 11                    | 36          | _  | _   | 36            |
| 40   | M.Tech                 | Nanotechnology                                 | 38       | 4                     | 38          | _  | —   | 38            |
| 41   | M.Tech                 | Power Electronics and Drives                   | 97       | 31                    | 93          | _  | —   | 93            |
| 42   | M.Tech                 | Sensor System Technology                       | 46       | 5                     | 41          | _  | _   | 41            |
| 43   | M.Tech                 | Software Technology                            | 67       | 13                    | 67          | _  | _   | 67            |
| 44   | M.Tech                 | Structural Engineering                         | 82       | 54                    | 74          | _  | _   | 74            |
| 45   | M.Tech                 | VLSI Design                                    | 144      | 34                    | 125         | _  | —   | 125           |
| 46   | MBA                    | Master of business<br>administration           | 198      | 6                     | 181         | _  | _   | 181           |
| 47   | MBA                    | Master of buisness<br>management(inter grader) | 220      | 3                     | 180         | _  | _   | 180           |
| 48   | Ph.D Progra            | amme   | 116      | _                     | -           | _  | _   | 116           |
| 49   | 9 MS(By Res) Programme |  | 13       | _                     | _           | _  | _   | 13            |
| 50   | 50 M.Phil Programme    |  | 5        | _                     | _           | _  | _   | 5             |
| 51   | 51 Other               |  |          | 5 Program I           | ntroduce    | d  |     |               |

## 2.12 How does IQAC Contribute/Monitor/Evaluate the Teaching & Learning processes:

The IQAC insists the schools to conduct periodical Quality Circle meeting at the programme level and also conducts academic audit at the end of each semester. The result analysis for the internal assessment is discussed at the Deans meeting and the action taken on anomalies is insisted.

## 2.13 Initiatives undertaken towards faculty development

(These activities are undertaken with the help of Academic Staff College and the respective schools / research centres; It is specified that all faculty members should have participated in atleast one of the development programmes either conducted by the University or elsewhere)

| S.No | Faculty / Staff Development<br>Programmes      | Number of faculty benefitted* |
|------|--|-------------------------------|
| 1    | Refresher courses                              | 200                           |
| 2    | UGC – Faculty Improvement Programme            | 63                            |
| 3    | HRD programmes                                 | 11                            |
| 4    | Orientation programmes                         | 108                           |
| 5    | Faculty exchange programme                     | 7                             |
| 6    | Staff training conducted by the university     | 486                           |
| 7    | Staff training conducted by other institutions | 122                           |
| 8    | Summer / Winter schools, Workshops, etc.       | 4753                          |
| 9    | Others   | 182                           |

\* The same faculty member could have undertaken more than one development programme. This number cannot be compared with the total faculty strength, as there will be no correlation.

## 2.14 Details of Administrative and Technical staff

| Category             | Number of<br>Permanent<br>Employees | Number of<br>Vacant<br>Positions | Number of<br>permanent<br>positions<br>filled during<br>the Year | Number of<br>positions<br>filled<br>temporarily |
|----------------------|-------------------------------------|----------------------------------|--|---|
| Administrative Staff | 880                                 |                                  | 16   |   |
| Technical Staff      | 397                                 |                                  | 27   |   |
| Project Staff        | 107                                 |                                  |  |   |

## **Criterion – III**

#### 3. Research, Consultancy and Extension

#### 3.1 Initiatives of the IQAC in Sensitizing/Promoting Research Climate in the institution

The IQAC through the 'Sponsored Research office' of VIT provides information about the call for proposals, advertised by various funding agencies, through email to all faculty members.

The IQAC through the 'Academic Research Office' arranges to recognize the faculty members who have contributed to research – either through publication of research papers in Scopus indexed journals or obtained research grants. Such recognition is extended to research scholars in addition to the faculty members.

#### 3.2 Details regarding major projects

|                     | Completed | Ongoing | Sanctioned | Submitted |
|---------------------|-----------|---------|------------|-----------|
| Number              | 13        | 59      | 33         | 101       |
| Outlay in Rs. Lakhs | 201.2     | 871.0   | 301.0      | 2619.2    |

#### **3.3 Details regarding minor projects**

|                     | Completed | Ongoing | Sanctioned | Submitted |
|---------------------|-----------|---------|------------|-----------|
| Number              | 2         | 8       | 5          | 7         |
| Outlay in Rs. Lakhs | 8.9       | 14.0    | 5.6        | 17.4      |

#### 3.4 Details on research publications

| S.No | Journals               | International | National |
|------|------------------------|---------------|----------|
| 1    | Peer Review Journals   | 1494          | 120      |
| 2    | Non-Peer Review        | 46            | 28       |
| 3    | e-Journals             | 34            | 7        |
| 4    | Conference proceedings | 201           | 67       |

## **3.5 Details on Impact factor of publications:**

| Range      | Average | h-index | Nos. in SCOPUS |
|------------|---------|---------|----------------|
| 1.00-10.04 | 0.9     | 39      | 1203           |

# 3.6 Research funds sanctioned and received from various funding agencies, industry and other organizations

| S.No | Project Titles  | Principal                     | Funding   | Quantum                | Durati | on   |
|------|---|-------------------------------|---|------------------------|--------|------|
|      |   | investigator                  | Agency  | of grant<br>(in lakhs) | From   | То   |
| 1    | Screening Characterisation<br>and Bioinformatic Structure<br>analysis of pectinase produced<br>from actinomycetes   | Dr. V. Suneetha               | DST Young<br>Scientist SERC -<br>Fast Truck                               | 13.28                  | 2010   | 2013 |
| 2    | Investigations on using<br>ferroelectric polymers as<br>photo-electric converters and<br>photo-induced capacitors in<br>plastic solar cells.                  | Dr. A. Anand<br>Prabhu        | Department of<br>Science &<br>Technology<br>(DST), New<br>Delhi           | 15.63                  | 2010   | 2013 |
| 3    | Proposal Under Fund for<br>Improvement of S&T<br>Infrastructure in Universities &<br>Higher Educational Institutions<br>(FIST) in Chemical<br>Science/Level 1 | Dr.k.<br>Sathiyanarayana      | Department of<br>Science &<br>Technology<br>(DST), New<br>Delhi           | 6.40                   | 2010   | 2013 |
| 4    | Investigation of solubility and<br>catalytic properties of<br>substituted hydroxyl, fluoro<br>and oxy apatite ceramics  | Dr.G.Buvaneswari              | epartment of<br>Science &<br>Technology<br>(DST), New<br>Delhi            | 30.25                  | 2010   | 2013 |
| 5    | Screening of extra cellular<br>matrix protein derived cryptic<br>bioactive peptides involved in<br>regulation of cell activity                                | Dr.C.Shanthi                  | Department of<br>Science &<br>Technology<br>(DST), New<br>Delhi           | 20.37                  | 2010   | 2013 |
| 6    | "Investigation on Cr and Co<br>Doped CdTe Diluted Magnetic<br>Semiconductors for Room<br>Temperature Ferromagnetism"  | Dr.<br>Madhusudhana<br>Rao    | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi | 14.90                  | 2010   | 2013 |
| 7    | "Nano-Molecular Structures<br>Stabilized Thin-film<br>Electrodes: Preparation,<br>Surface Correlation and<br>Electrocatalysis"                                | Dr. Annamalai<br>Senthilkumar | Department of<br>Science &<br>Technology<br>(DST), New<br>Delhi           | 20.54                  | 2010   | 2013 |

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| S.No | Project Titles  | Principal                    | Funding   | Quantum    | Durati | on   |
|------|---|------------------------------|---|------------|--------|------|
|      |   | investigator                 | Agency  | of grant   | From   | То   |
|      |   |                              |   | (in lakhs) |        |      |
| 8    | "Study of the High Cycle<br>Fatigue (HCF) Behavior of<br>Beta Titanium Alloy Til 5-3"   | Dr. Geetha<br>Manivasagam    | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi | 13.51      | 2010   | 2013 |
| 9    | Experimental investigations in<br>high efficiency compound<br>augmented doubly enhanced<br>micronfin recuperations                              | Dr. Yagnavalkya<br>Mukkamala | DepartmentofScience&Technology(DST),NewDelhi                              | 25.00      | 2010   | 2013 |
| 10   | "Studies on the strength an<br>dimensional accuracy of<br>components produced in<br>layered manufacturing"                                      | Prof. CD Naiju               | DepartmentofScience&Technology(DST),NewDelhi                              | 7.10       | 2010   | 2013 |
| 11   | Ambiguite Semantic Issues<br>and Tool Development in<br>Contextual Grammer  | Dr. K.<br>Lakshmanan         | DepartmentofScience&Technology(DST),NewDelhi                              | 1.37       | 2010   | 2013 |
| 12   | Nanoparticles in the prevention<br>of calcium oxalate crystal<br>formation and retention in<br>renal epithelium                                 | Dr. Pragasam<br>Viswanathan  | DepartmentofScience&Technology(DST),NewDelhi                              | 14.52      | 2010   | 2013 |
| 13   | Bioremediation of Pesticides<br>from Agricultural Soil Using<br>Microbial Consortia and<br>Preparation of Appropriate<br>Formulation            | Dr. Jayanthi<br>Abraham      | DepartmentofScience&Technology(DST),NewDelhi                              | 15.00      | 2010   | 2013 |
| 14   | Mathematical Modeling of<br>some nonlinear MHD mixed<br>convective heat and mass<br>transfer flows through porous<br>medium in vertical channel | Dr.S.Srinivas                | DepartmentofScience&Technology(DST),NewDelhi                              | 9.46       | 2011   | 2013 |
| 15   | "Factors Influencing Student<br>Learning Outcomes in Language<br>Courses: Inter state, College and<br>Course Level Analysis"                    | Dr. P. Ganesan               | Indian Council of<br>Social Science<br>Research<br>(ICSSR)                | 4.24       | 2010   | 2013 |
| 16   | "Growth and Characterization<br>of higly nonlinear organic<br>crystal 3 methyl 4 nitrostilbene<br>(MMONS)"                                      | Dr. S. Kalainathan           | DepartmentofScience&Technology(DST),NewDelhi                              | 24.83      | 2010   | 2013 |

| S.No | Project Titles  | Principal                              | Funding   | Quantum    | Durat | ion  |
|------|---|--|---|------------|-------|------|
|      |   | investigator                           | Agency  | of grant   | From  | То   |
|      |   |  |   | (in lakhs) |       |      |
| 17   | "Pyrolysis of waste agro<br>biomass by thermocataytic<br>process using microwave in<br>pebble/fluidised bed reactor"                              | Dr. R. Natarajan                       | Department of<br>Science &<br>Technology<br>(DST), New<br>Delhi             | 10.30      | 2010  | 2013 |
| 18   | "Proposal under FIST<br>Programme - NMR"  | Department of<br>chemistry and<br>team | Department of<br>Science &<br>Technology<br>(DST), New<br>Delhi             | 12.80      | 2011  | 2014 |
| 19   | Development of Sol-Gel Based<br>Sensor for Early Diagnosis of<br>Oral Cancer by Centre for<br>Biomedical Research                                 | Dr. Bhaskar<br>Mohan Murari            | Department of<br>Science &<br>Technology<br>(DST), New<br>Delhi             | 23.78      | 2011  | 2014 |
| 20   | "Biochemical and Molecular<br>Investigation of Plant Dyes"  | Dr. R. Siva                            | Council of<br>Scientific and<br>Industrial<br>Research (CSIR),<br>New Delhi | 3.42       | 2011  | 2014 |
| 22   | "Automated disposition of<br>weld radiographs based on<br>given specification and<br>performance enhancement of<br>the existing developed system" | Dr. Margret<br>Anouncia                | Dept. of Space  | 4.27       | 2011  | 2014 |
| 23   | MST Radar signal processing<br>using wavelets and harmonic<br>decomposition   | Prof. G.<br>Ramachandra<br>Reddy       | Dept. of Space  | 1.93       | 2011  | 2014 |
| 24   | "Nanotechnology for<br>improvement of bioefficacy of<br>Tea Polyphenols"  | Dr. Abul Kalam<br>Azad Mandal          | National Tea<br>Research<br>Foundation                                      | 11.11      | 2011  | 2014 |
| 25   | Financial Assistance for<br>Sensor Network Projects<br>"Interactive Kiosl for Farmers<br>using sensor Grid based on<br>Meta Modeling"             | Prof. C.Srimathi                       | DepartmentofScience&Technology(DST),NewDelhi                                | 64.00      | 2011  | 2014 |
| 26   | "Development of a Numerical<br>Model for the Nonlinear Four-<br>Wave Interactions in Discrete<br>Special Wave Models"                             | Dr. V. Prabhakar                       | Council of<br>Scientific and<br>Industrial Research<br>(CSIR), New Delhi    | 6.54       | 2011  | 2014 |
| 27   | "Micro Credit to Self Help<br>Groups: A Boon for<br>Empowerment of Rural<br>Women"  | Dr. V. Selvam                          | Indian Council of<br>Social Science<br>Research<br>(ICSSR)                  | 5.90       | 2011  | 2014 |

| S.No | Project Titles   | Principal                 | Funding   | Quantum                     | Durati | on   |
|------|--|---------------------------|---|-----------------------------|--------|------|
|      |  | investigator              | Agency  | of grant                    | From   | То   |
| 28   | "A Gender analysis on<br>Opportunities for Work-Life<br>Balance: Addressing issues of<br>Equality and Social Justice in<br>the Work Place"         | Dr. Anita Priya<br>Raja   | Indian Council of<br>Social Science<br>Research<br>(ICSSR)                  | ( <b>in lakns</b> )<br>4.17 | 2011   | 2014 |
| 29   | "Numerical Modelling and<br>Simulation of Boundary Layer<br>Problem i.e. Singular<br>Singularly Perturbed Two<br>Point Boundary Value<br>Problems" | Dr.A.S.V. Ravi<br>Kanth   | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi   | 4.49                        | 2011   | 2014 |
| 30   | "Wavelet Based Improved<br>Denoising and Geographical<br>Feature Extraction in SAR<br>Images Using Pattern<br>Recognition Algorithms"              | Dr.<br>Arulmozhivaraman   | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi   | 24.60                       | 2011   | 2014 |
| 31   | "Modeling of spatial variation<br>of soil properties for<br>probabilistic site<br>characterization of<br>Kalpakkam"                                | Dr. Pijush Samui          | IGCAR   | 2.97                        | 2011   | 2014 |
| 32   | Bio-sorption of Heavy Metal<br>(Lead, Cobalt, Nickel,<br>Aluminum) by Coconut Coir<br>in a Bio-reactor (3 Projects)                                | Dr. Anand Prem<br>Rajan   | R&D   | 0.50                        | 2011   | 2014 |
| 33   | Generic classification and<br>recognition of defence related<br>targets and objects  | Dr. Chandra mouli         | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi   | 9.81                        | 2011   | 2014 |
| 34   | "DST - FIST Programme,<br>SMBS"  | SMBS                      | DepartmentofScience&Technology(DST),NewDelhi                                | 257.00                      | 2011   | 2014 |
| 35   | "Nanopesticide Formulation<br>Characterization and Chemo<br>Dynamics in Rice Model<br>Ecosystem"   | Dr. N.<br>Chandrasekahran | Council of<br>Scientific and<br>Industrial<br>Research (CSIR),<br>New Delhi | 12.59                       | 2011   | 2014 |
| 36   | "Development of Non-Invasie<br>Blood Glucose Measurement<br>System"  | Dr. Zachariah C.<br>Alex  | Indian Council of<br>Medical Research<br>(ICMR), New<br>Delhi               | 13.58                       | 2011   | 2014 |

| S.No | Project Titles   | Principal                              | Funding   | Quantum             | Durati | ion  |
|------|--|--|---|---------------------|--------|------|
|      |  | investigator                           | Agency  | of grant            | From   | То   |
| 37   | "Design and Development of<br>Multi band Wearable Antenna<br>for Military Application"   | Dr. Zachariah C.<br>Alex,              | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi | (in lakhs)<br>13.00 | 2011   | 2014 |
| 38   | "Revealing Machanism on the<br>encapsulation/immobilization<br>of organic redox mediators on<br>Carbon nanotube modified<br>electrode by surface enhanced<br>raman spectroscopy and<br>electrochemical techniques" | Dr. Annamalai<br>Senthilkumar          | Department of<br>Science &<br>Technology<br>(DST), New<br>Delhi           | 32.28               | 2011   | 2014 |
| 39   | "Studies on the molecular<br>aspects of Schizophrenia with<br>special reference to hormone<br>receptor genes and variant<br>serotype alleles"  | Dr. Anil Kumar<br>Gopinath             | Department of<br>Biotechnology<br>(DBT), New<br>Delhi                     | 8.72                | 2011   | 2014 |
| 40   | "Evaluation of liquefaction<br>resistance of Indian soils using<br>statistical learning algorithms"  | Dr. Pijush Samui                       | BARC  | 10.75               | 2011   | 2014 |
| 41   | "Women awarness on<br>consumer Protection Act - A<br>study with special reference to<br>Vellore District in Tamilnadu"   | Dr. N. Sundaram                        | Indian Institute of<br>Public<br>Administration<br>(IIPA)                 | 3.50                | 2011   | 2014 |
| 42   | "Flow Injection Analysis<br>Electro-chemical Detector<br>(FIA-ECD) for biochemical<br>Analysis   | Dr.A.Senthil<br>Kumar                  | DepartmentofScience&Technology(DST),NewDelhi                              | 34.36               | 2011   | 2014 |
| 43   | "Growth and characterization<br>of self-assembled in As/GaAs<br>quantum dot infrared<br>photodetectors for high<br>temperture and long<br>wavelength operations"   | Dr. Kaustab<br>Ghosh                   | DepartmentofScience&Technology(DST),NewDelhi                              | 19.20               | 2012   | 2015 |
| 44   | "Gene therapy for leukocyte<br>adhesion deficiency using<br>lentiviral vectors"  | Dr. Everette Jacob<br>Remington nelson | DBT   | 74.50               | 2011   | 2014 |
| 45   | "Synthesis growth and<br>characterization of single<br>crystals of succinic and maleic<br>acids with the admixtures of L-<br>histidinium for opto-<br>electronics applications"                                    | Dr. Rajan Babu                         | Science &<br>Engineering<br>Research Board<br>(SERB)                      | 15.60               | 2012   | 2015 |

| S.No | Project Titles   | Principal                   | Funding   | Quantum              | Durat | ion  |
|------|--|-----------------------------|---|----------------------|-------|------|
|      |  | investigator                | Agency  | of grant             | From  | То   |
| 46   | "Advanced Centre for Bio-<br>separation and related<br>Technology, Phase - II"   | Dr. M.A.<br>Vijayalakshmi   | Science &<br>Engineering<br>Research Board<br>(SERB)                      | (in lakhs)<br>118.20 | 2012  | 2015 |
| 47   | "GIS Based early warning<br>landslide susceptibility model<br>using data mining<br>classification approach"  | Prof. M.<br>Venkatesan      | Dept. of Space  | 7.72                 | 2012  | 2015 |
| 48   | "Differential membrane lipid<br>profile and fluidity of<br>Acidithiobacillus ferrooxidans<br>during the process of adhesion<br>to minerals"GIS Based early<br>warning landslide<br>susceptibility model using data<br>mining classification<br>approach" | Dr. Anand Prem<br>Rajan     | Science &<br>Engineering<br>Research Board<br>(SERB)                      | 28.56                | 2012  | 2015 |
| 49   | "Growth and characterization<br>of new nonlinear optical<br>stilabazolium crystal 4-N, N-<br>Dimethylamino-4-N-Methyl-<br>Stilbazolium 2<br>napthalenesulfonate (DSNS)"  | Dr. S. Kalainathan          | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi | 12.93                | 2012  | 2015 |
| 50   | "Studies on pulsed current<br>GTA welding and friction stir<br>welding of superalloy C276"   | Dr. N.<br>Arivazhagan       | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi | 14.86                | 2012  | 2015 |
| 51   | "Nanoformulation of Pesticide<br>- An Effective Insect Repellant<br>for Military Soldiers"   | Dr. N.<br>Chandrasekaran    | LSRB  | 19.59                | 2012  | 2015 |
| 52   | "Isolation and Identification of<br>Antidiabetic Compounds from<br>Marine Algae"   | Dr. M.A. Jayasri            | DBT   | 24.26                | 2012  | 2015 |
| 53   | "Development of approaches for<br>geometric, radiometric and<br>atmospheric correction of remote<br>sensing data products for multi-<br>data data analysis"  | Dr. S. Prabhu               | Dept. of Space  | 4.45                 | 2012  | 2015 |
| 54   | "Grid Based application<br>development for Satellite<br>image processing"  | Dr. S. Margret<br>anouncia  | Dept. of Space  | 10.46                | 2012  | 2015 |
| 55   | "Structure and function of<br>TRIOBP a novel actin bundling<br>protein involed in hearing"   | Dr. Kavitha<br>Thirumurugan | DBT   | 21.80                | 2012  | 2015 |

| S.No | Project Titles  | Principal                         | Funding   | Quantum    | Durat | ion  |
|------|---|-----------------------------------|---|------------|-------|------|
|      |   | investigator                      | Agency  | of grant   | From  | То   |
| 5.6  |   | D. A1.11.                         | Q   | (in lakhs) | 2012  | 2015 |
| 56   | "Exploitation of physical and<br>chemical properties of<br>remarkably flexible<br>hypercoordinate silcon<br>complexes"  | Dr. Akella<br>Sivaramakrishna     | Engineering<br>Research Board<br>(SERB)                                     | 21.85      | 2012  | 2015 |
| 57   | "Growth and Characterisation<br>of Diluted Magnetic<br>Semiconducting (DMS)<br>Crystal Lead Sulphide Doped<br>with Manganese, Europium<br>and Gadolinium by Bridgeman<br>Technique" | Dr. S. Kalainathan                | Council of<br>Scientific and<br>Industrial<br>Research (CSIR),<br>New Delhi | 11.04      | 2012  | 2015 |
| 58   | "Utilisation of Bottom ash of<br>Thermal Power Plants for<br>Construction activities as<br>substitute of fine aggregate"  | Dr.A.Santhi                       | NLC   | 6.89       | 2011  | 2014 |
| 59   | "Novel Phosphine Oxide-<br>Functionalized Dendrimers:<br>Synthesis, Coordination Behavior<br>and Extraction Studies of<br>actinides from Radioactive<br>Wastes"                     | Dr. Akella<br>sivaramakrishna     | DAE   | 14.22      | 2012  | 2015 |
| 60   | "Role of Information and<br>Communication Technology<br>(ICT) in Higher Education: An<br>Empirical Study of<br>Engineering and Management<br>Institutions of North India"           | Prof. C.m. Maran                  | Indian Council of<br>Social Science<br>Research<br>(ICSSR)                  | 2.55       | 2012  | 2015 |
| 61   | "Preparation of hierarchically<br>porous zeolites using<br>agricultural waste materials as<br>hard templates and their<br>catalytic activity studies"                               | Dr.K.K.<br>Cheralathan            | Science &<br>Engineering<br>Research Board<br>(SERB)                        | 26.00      | 2012  | 2015 |
| 62   | "Inhibitory effect of<br>Cinnamomum zeylanicum on a<br>α-glucosidase activity and<br>postprandial hyperglycemia"  | Dr. Kavitha<br>Thirumurugan       | Science &<br>Engineering<br>Research Board<br>(SERB)                        | 22.50      | 2012  | 2015 |
| 63   | "Phylogenetic and functional<br>analysis of carotenoid cleavage<br>dioxygenase(CCD) of Bixa<br>Orellena with special reference to<br>bixin synthesis"                               | Dr. R. Siva                       | Science &<br>Engineering<br>Research Board<br>(SERB)                        | 23.26      | 2012  | 2015 |
| 64   | "3D Dosimetric Analysis on<br>Polymer Gel using Integrated<br>Laser CT scanner"   | Dr. E. James<br>Jabaseelan Samuel | Science &<br>Engineering<br>Research Board<br>(SERB)                        | 32.79      | 2012  | 2015 |

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| S.No | Project Titles   | Principal                        | Funding   | Quantum                | Durat | ion  |
|------|--|----------------------------------|---|------------------------|-------|------|
|      |  | investigator                     | Agency  | of grant<br>(in lakhs) | From  | То   |
| 65   | "Synthesis and<br>Characterization of Polymer-<br>Graphene Nanocomposite<br>(PGNC) for Naval<br>Applications"  | Dr. Girish<br>Mukundrao Joshi    | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi | 20.62                  | 2012  | 2015 |
| 66   | "Alkoxysilanols: An efficient<br>oxygen-rich single precursor<br>for metallasiloxanes and metal<br>silicate materials"   | Dr. Palanisami                   | Science &<br>Engineering<br>Research Board<br>(SERB)                      | 19.44                  | 2012  | 2015 |
| 67   | "Ethernet Hardware for<br>automobile Applications"   | Dr. Gerardine<br>Immaculate Mary | Department of<br>Science &<br>Technology<br>(DST), New<br>Delhi           | 85.82                  | 2012  | 2015 |
| 68   | "Financial Inclusion in Rural<br>India-A Study with special<br>Reference to Vellore District<br>of TamilNadu (Industrially<br>most Backward District)"   | Dr. N. Sundaram                  | Indian Council of<br>Social Science<br>Research<br>(ICSSR)                | 7.98                   | 2012  | 2015 |
| 69   | "Improving the Writing Skills<br>of Students of Government<br>Higher Secondary Schools in<br>Vellore District through Task-<br>based Approach"   | Dr. R. Srinivasan                | Indian Council of<br>Social Science<br>Research<br>(ICSSR)                | 4.61                   | 2012  | 2015 |
| 70   | "Deciphering the novel genes<br>involved in pathogen<br>recognition receptor mediated<br>signaling pathways in penaied<br>shrimp"  | Dr. R. Sudhakaran                | Science &<br>Engineering<br>Research Board<br>(SERB)                      | 17.00                  | 2012  | 2015 |
| 71   | "Studies on the Curing<br>Regime, Rate of Hardenin,<br>Toughness Properties and<br>Long Term Durability of glass<br>Fibre Reinforced Geopolymer<br>Concrete"   | Dr. A. Sivakumar                 | Science &<br>Engineering<br>Research Board<br>(SERB)                      | 6.48                   | 2012  | 2015 |
| 72   | "Transition metal complexes<br>bearing pyridyl-amine and<br>pyridyl-porphyrin ligands-<br>Synthesis, characterization,<br>and its application towards<br>catalytic oxidation of alkenes<br>to epoxides and alcholos" | Dr. G.<br>Thirumanavelan         | Science &<br>Engineering<br>Research Board<br>(SERB)                      | 22.58                  | 2012  | 2015 |

| S.No | Project Titles   | Principal                 | Funding  | Quantum    | Durat | ion  |
|------|--|---------------------------|--|------------|-------|------|
|      |  | investigator              | Agency   | of grant   | From  | То   |
|      |  |                           | ~ .  | (in lakhs) |       |      |
| 73   | "Synthesis of efficient<br>heterogeneous fenton catalyst<br>for degradation of industrial<br>organic pollutants by catalytic<br>wet peroxide oxidation"          | Dr. G. Satish<br>Kumar    | Science &<br>Engineering<br>Research Board<br>(SERB)       | 25.74      | 2012  | 2015 |
| 74   | "Development of Porous<br>Titanium based implants for<br>osteoporotic bone by rapid<br>manufacturing and its chemical<br>and biomechanical<br>evaluations"       | Dr. Geetha<br>Manivasagam | Science &<br>Engineering<br>Research Board<br>(SERB)       | 14.62      | 2012  | 2015 |
| 75   | "Diversity & exploration of<br>marine magnetotactic bacteria<br>from southern Indian coast for<br>the production of<br>magnetosomes"                             | Dr. K.<br>Suthindhiran    | Science &<br>Engineering<br>Research Board<br>(SERB)       | 18.00      | 2012  | 2015 |
| 76   | "Antimicrobial and<br>Immunstimulatory Activities<br>of Actinomycetes for Aquatic<br>Animal Health Management"   | Dr. K. Kannabiran         | DBT  | 4.14       | 2012  | 2015 |
| 77   | "Spatio-temporal transmission<br>model for H1N1 using<br>clustering for Vellore  | Dr. Daphne lopex          | ICMR   | 9.72       | 2012  | 2015 |
| 78   | "Synthesis of C-N bond<br>bearing chiral/achiral organic<br>molecules via selective C-H<br>activation using novel<br>zirconium catalysts"                        | Dr. Rajasekhara<br>Reddy  | Science &<br>Engineering<br>Research Board<br>(SERB)       | 23.70      | 2012  | 2015 |
| 79   | "Targeted proteonmics-based<br>discovery and over expression<br>of a key cross-talking protein<br>for multiple stress tolerance in<br>rice"                      | Dr. S. Babu               | Science &<br>Engineering<br>Research Board<br>(SERB)       | 24.06      | 2012  | 2015 |
| 80   | "A Study on Stress and the<br>Probability of Psychiatric<br>Problems among the under Trial<br>and Convicted Male and Female<br>Prisoners in the Vellore Prisons" | Dr. Syed khalid<br>perwez | Indian Council of<br>Social Science<br>Research<br>(ICSSR) | 5.64       | 2012  | 2015 |
| 81   | "Study on Socio Economic<br>Conditions and Improvement<br>Avenues of Leather Tannery<br>Workers in Vellore District,<br>Tamil Nadu"                              | Dr. S. Rita               | Indian Council of<br>Social Science<br>Research<br>(ICSSR) | 7.50       | 2012  | 2015 |

| S.No | Project Titles  | Principal                            | Funding   | Quantum    | Durat | ion  |
|------|---|--------------------------------------|---|------------|-------|------|
|      |   | investigator                         | Agency  | of grant   | From  | То   |
|      |   |                                      |   | (in lakhs) |       |      |
| 82   | "Growth and characterization<br>of oxide single crystals using<br>optical floating zone<br>technique"   | Dr. S. Kalainathan                   | UGC-DAE   | 6.59       | 2012  | 2015 |
| 83   | "Design Optimization of<br>Aerospace Sandwich<br>Composites for strength,<br>stiffness, toughness, weight<br>and cost"  | Dr. K.<br>Padmanabhan                | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi   | 12.27      | 2012  | 2015 |
| 84   | "Identification of p38 MAPK<br>interacting proteins involved in<br>inflammation mediated cell<br>death"   | Dr. M. Anbalagan                     | DBT   | 5.83       | 2012  | 2015 |
| 85   | "Silver nanoparticle - based<br>point of use test for Cr (III)<br>determination in tannery<br>contaminated waters"  | Dr. Amitava<br>Mukherjee             | Department of<br>Science &<br>Technology (DST),<br>New Delhi                | 14.56      | 2012  | 2015 |
| 86   | "Development of single stage<br>reversible flow bioreactor for<br>simultaneous removal of COD<br>and ammonia from wastewaters"  | Dr. P.C. Sabumon &<br>Dr. Alka Metha | Department of<br>Science &<br>Technology (DST),<br>New Delhi                | 18.00      | 2012  | 2015 |
| 87   | "New Vistas in Organometallic<br>Chemistry of Group 8-10<br>Metals - Synthesis, Reactivity<br>and Applications of Novel<br>Metal and Metallacycloalkane<br>Complexes" | Dr. Akella<br>Sivaramakrishna        | Council of<br>Scientific and<br>Industrial<br>Research (CSIR),<br>New Delhi | 3.16       | 2011  | 2014 |
| 88   | "Production of Phytoene by<br>Inhibition of Phytoene<br>Desaturase Gene (pds) In<br>Dunaliella sp"  | Dr. K.M.<br>Gothandam                | Council of<br>Scientific and<br>Industrial<br>Research (CSIR),<br>New Delhi | 12.64      | 2012  | 2015 |
| 89   | "Development of electrochemical<br>based biosensor for detection of<br>lymphatic filarial parasite,<br>Wuchereria bancrofti, in vectors"                              | Dr. A. Senthil<br>Kumar              | DepartmentofScience&Technology (DST),New Delhi                              | 30.91      | 2012  | 2015 |
| 90   | "Processing and characterization<br>of dispersion strengthened<br>precipitation hardenable<br>aluminium alloys"   | Dr. V. Umasankar                     | ISRO  | 17.54      | 2012  | 2015 |
| 91   | "Theoretical & Experimental<br>analysis of similariton & all-<br>normal dispersion ultrafast<br>fiber laser oscillators"  | Dr. Sivabalan                        | Science &<br>Engineering<br>Research Board<br>(SERB)                        | 27.08      | 2012  | 2015 |

| S.No | Project Titles   | Principal                                       | Funding  | Quantum    | Durati | ion  |
|------|--|---|--|------------|--------|------|
|      |  | investigator                                    | Agency   | of grant   | From   | То   |
|      |  |   |  | (in lakhs) |        |      |
| 92   | "Toxicological analysis with<br>suspension of zine oxide"  | Dr. Amitava<br>Mukherjee                        | IIT  | 4.95       | 2012   | 2015 |
| 93   | "Stability and Aggregation of<br>Silver Nanoparticles in Natural<br>Aqueous Matrices Effect of<br>Surface Sapping and<br>Environmental Controls" | Dr. Amitava<br>Mukherjee                        | CLRI   | 22.88      | 2012   | 2015 |
| 94   | "Effect of pond ash and steel<br>fiber in concrete"  | Prof. A. Sofi                                   | Science&EngineeringResearchBoard(SERB)               | 4.32       | 2011   | 2014 |
| 95   | "Improving the performance of<br>wire cut EDM by developing<br>the wire electrodes"  | Dr. G.<br>Rajyalakshmi                          | Science &<br>Engineering<br>Research Board<br>(SERB) | 14.75      | 2011   | 2014 |
| 96   | "A Study on in vitro Anti-<br>Inflammatory Effect of Indian<br>Ayurvedic Herbal Formulation<br>Triphala and its Mechanism of<br>Action"          | Dr. Mahboob<br>Khan Rasool                      | ICMR   | 11.30      | 2012   | 2015 |
| 97   | "Some Investigations on fuuy<br>formal concept analysis"   | Dr. Ch. Aswani<br>Kumar                         | DAE  | 7.77       | 2011   | 2014 |
| 98   | "Development of carbon<br>nanomaterialsbased water<br>filters for the removal of heavy<br>metal ions toward water<br>purification applications"  | Dr.A.Nirmala<br>Grace<br>Prof. V.<br>Velmurugan | DepartmentofScience&Technology(DST),NewDelhi         | 12.72      | 2012   | 2015 |
| 99   | "In-Silico Approaches for<br>Designing B-Lactamase<br>Inhibitors"  | Dr. Anand<br>Anbarasu                           | ICMR   | 12.93      | 2012   | 2015 |
| 100  | "Structure property<br>relationship studies of<br>halloysite nanotube filled<br>PP?ABS blends and its<br>composites                              | Dr. Pankaj<br>Balkrishna Tambe                  | Science &<br>Engineering<br>Research Board<br>(SERB) | 15.25      | 2012   | 2015 |
| 101  | "Design and Development of<br>optical tomography system for<br>soft tissue imaging"  | Prof. J B. Jeeva                                | DepartmentofScience&Technology(DST),NewDelhi         | 12.34      | 2011   | 2014 |
| 102  | "Flowing and depository<br>profiling of contaminants<br>through domestic water supply<br>system and health risks<br>assessment"                  | Prof. S. Shantha<br>Kumar                       | DOTE   | 2.00       | 2012   | 2015 |

| S.No | Project Titles Principal Funding  |  | Quantum   | Durat      | ion  |      |
|------|---|--|---|------------|------|------|
|      |   | investigator                                       | Agency  | of grant   | From | То   |
|      |   |  |   | (in lakhs) |      |      |
| 103  | "Investiations for Room<br>temperature ferromagnetism in<br>Cr,Fe,Ni and Cu-doped In2O0<br>thin films for spintronic<br>applications"   | Dr.S. Kaleemulla                                   | UGC-DAE   | 0.33       | 2012 | 2015 |
| 104  | "Design and development of<br>telemedicine based health care<br>unit for diabetic disorder  | Prof. S.<br>Vivekanandan                           | Science &<br>Engineering<br>Research Board<br>(SERB)                                | 10.10      | 2013 | 2016 |
| 105  | "Development of Trigeneration<br>Power, Cooling and<br>Desalination) Plant by<br>compressed air humidification<br>and dehumidification" | Dr. Tangellapalli<br>Srinivas                      | Council of<br>Scientific and<br>Industrial<br>Research (CSIR),<br>New Delhi         | 15.89      | 2013 | 2016 |
| 106  | "Growth and Characterization<br>of PMN-PT single crystal"   | Dr.S. Kalainathan                                  | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi           | 32.41      | 2013 | 2016 |
| 107  | "Bio-degradable Polymer<br>based Neem Nano-emulsion<br>for control release applications<br>in Aquaculture Industries"                   | Dr. N.<br>Chandrasekaran                           | Department of<br>Science &<br>Technology<br>(DST), New<br>Delhi                     | 20.00      | 2013 | 2016 |
| 108  | "DST - FIST Programme,<br>SBST"   | Dr. Anil Kumar<br>Gopinath                         | Department of<br>Science &<br>Technology<br>(DST), New<br>Delhi (FIST<br>Programme) | 84.00      | 2013 | 2016 |
| 109  | "Development of egg vending machine"  | Dr. S. Denis<br>Ashok                              | CPDO  | 1.22       | 2013 | 2016 |
| 110  | "The unique process of Aloe-<br>vera extract separation and its<br>application for Diabetics"   | Dr. M.A.<br>Vijayalakshmi                          | TIFAC - CORE  | 6.58       | 2012 | 2015 |
| 111  | "DST - Fist Programme -<br>FIST"  | Dean - SENSE                                       | Department of<br>Science &<br>Technology (DST),<br>New Delhi                        | 48.00      | 2012 | 2015 |
| 112  | "Development of Engine<br>Nanocoolant for Armoured<br>Fighting Vehicle"   | Dr. A. Nirmala<br>Grace &<br>Prof.<br>V.Velmurugan | CVRDE   | 23.48      | 2012 | 2015 |

| S.No | Project Titles   | Project Titles Principal Funding                          |   | Quantum             | Durat | ion  |
|------|--|---|---|---------------------|-------|------|
|      |  | investigator  | Agency  | of grant            | From  | То   |
| 113  | "Development of<br>Computational Framework for<br>the Automated Analysis of<br>Cardiac MRI"  | Prof. G. Dharani<br>Bai                                   | Department of<br>Science &<br>Technology (DST),<br>New Delhi              | (in lakhs)<br>19.20 | 2011  | 2015 |
| 114  | " A Comparative Study of Social<br>Security Schemes and Quality of<br>Life Among Women workers in<br>the Manufacturing Industries in<br>Vellore and Tirupur District"      | Dr. R. Indra Devi,<br>Dr. P. Ganesan,<br>Dr. A.S. Sathish | Indian Council of<br>Social Science<br>Research<br>(ICSSR)                | 5.00                | 2013  | 2016 |
| 115  | " Vibration based structural<br>health monitoring and<br>progressive failure analysis of<br>a rotating tapered composite<br>plate"   | Dr. R. Vasudevan  | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi | 6.72                | 2013  | 2016 |
| 116  | " GIS based data infrastructure<br>for the area of tummalapalle<br>uranium mine, Andhra Pradesh"   | Dr. Kiran<br>Yarrakula                                    | BRNS  | 24.97               | 2013  | 2016 |
| 117  | " An Analysis of Corner Shop<br>Economy of Vellore "   | Dr. N.P. Hariharan  | Indian Council of<br>Social Science<br>Research<br>(ICSSR)                | 8.00                | 2013  | 2016 |
| 118  | "Chaos based security systems<br>in Transform domains"   | Dr. K. Ganesan  | Science &<br>Engineering<br>Research Board<br>(SERB)                      | 19.44               | 2010  | 2013 |
| 119  | "Novel chiral poly [ionic<br>liquids] and their applications<br>in enantioselective organic<br>transformations"  | Dr. Kari<br>Vijayakrishna                                 | Science &<br>Engineering<br>Research Board<br>(SERB)                      | 38.46               | 2013  | 2016 |
| 120  | " Enhanced production of<br>anthraquinones through<br>gamma irradiation in root<br>cultures of oldenlandia<br>umbellata L. and rubia<br>cordifolia L"                      | Dr. R.Siva  | Department of<br>Automic Energy<br>(DAE)                                  | 22.88               | 2013  | 2016 |
| 121  | " Antioxidant and antibacterial<br>activity of seaweeds against<br>fish bacterial pathogens"   | Dr. John Thomas   | Science&EngineeringResearchBoard(SERB)                                    | 18.90               | 2013  | 2016 |
| 122  | " Formulation, characterisation<br>of biobased oil nanoemulsion<br>towards controlling bacterial<br>infection in Aquaculture<br>(Special reference to fish and<br>shrimp)" | Dr. N.<br>Chandrasekaran                                  | Department of<br>Biotechnology<br>(DBT), New Delhi                        | 17.40               | 2013  | 2016 |

| S.No | Project Titles Principal Funding  |   | Quantum   | Durati     | ion  |      |
|------|---|---|---|------------|------|------|
|      |   | investigator  | Agency  | of grant   | From | То   |
| 102  |   |   | 0   | (in lakhs) | 2012 | 2016 |
| 123  | "Characterization and<br>processing of composite<br>Materials for manufacturing of<br>Gears used in Aerospace<br>Application"   | Dr. M. Anthony<br>Xavior                              | Science &<br>Engineering<br>Research Board<br>(SERB)                          | 22.06      | 2013 | 2016 |
| 124  | " Novel Diketone based<br>Oxovanadium (IV)<br>Complexes: Synthesis,<br>Characterization,DNA binding<br>and insulin Mimetic Studies"   | Dr. A. Sheela   | Council of<br>Scientific and<br>Industrial<br>Research (CSIR),<br>New Delhi   | 7.25       | 2013 | 2016 |
| 125  | "Studies on pulsed current<br>GTA welding and friction stir<br>welding of Dissimilar AISI<br>304 and AISI 4340<br>Aeronautical Steel"                                       | Dr. N.<br>Arivazhagan                                 | Aeronautics R&D<br>Board, New Delhi   | 17.11      | 2013 | 2016 |
| 126  | "Development of a<br>stroboscopic machine vision<br>approach for the measurment<br>and evaluation of spindle<br>radial errors in machine tools"                             | Dr. Denis Ashok                                       | Science &<br>Engineering<br>Research Board<br>(SERB)                          | 16.60      | 2013 | 2016 |
| 127  | "Microwave Synthesis of<br>NiMg and NiMgZn Ferrites for<br>Electromagnetic Interference<br>Shielding Technology"  | Dr. W. Madhuri  | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi     | 15.26      | 2013 | 2016 |
| 128  | " Developing a Colorimetric<br>Assay for Acetylcholinesterase<br>and Inhibitor Screening with<br>Plasmonic Nanoparticles<br>Nanotechnology based Sensing<br>of Nerve Gases" | Dr. Amitava<br>Mukherjee                              | Defence Research<br>& Development<br>Organisation<br>(DRDO), New<br>Delhi     | 26.26      | 2013 | 2016 |
| 129  | " Investigation of efficient<br>bacteriophages for against to<br>NDM -1 producing isolates of<br>Escherichia coli & Klebesiella<br>pneumoniae"                              | Dr. N. Ramesh   | Science &<br>Engineering<br>Research Board<br>(SERB)                          | 24.70      | 2013 | 2016 |
| 130  | " Mathematical Modeling of<br>Some Nanofluid Flows"   | Dr. S.Srinivas  | Department of<br>Atomic Energy<br>(DAE), Mumbai.                              | 9.67       | 2013 | 2016 |
| 131  | " A facile agricultural waste<br>mediated green synthesis of<br>palladium and nickel<br>nanoparticles and their<br>biological studies"                                      | Dr. Mohana<br>Roopan (PI),<br>Prof. S.<br>Karthikeyan | Department of<br>Biotechnology<br>(DBT), New<br>Delhi ( under<br>RGYI Scheme) | 9.65       | 2013 | 2016 |

| S.No | Project Titles Principal Funding   |                             | Quantum  | Durat      | ion  |      |
|------|--|-----------------------------|--|------------|------|------|
|      |  | investigator                | Agency   | of grant   | From | То   |
|      |  |                             |  | (in lakhs) |      |      |
| 132  | "Modulatory effects of<br>hemoglobin in calcium Oxalate<br>crystal aggregation and<br>retention in the Renal calculi"  | Dr. Pragasam<br>Viswanathan | Indian Council of<br>Medical Research<br>(ICMR), New<br>Delhi                | 1.28       | 2013 | 2016 |
| 133  | " Ultrashort pulse generation at<br>850 nm using a tapered<br>photonic crystal fiber"  | Dr. K.<br>Senthilnathann    | Council of<br>Scientific and<br>Industrial<br>Research (CSIR),<br>New Delhi  | 3.43       | 2012 | 2016 |
| 134  | "Small molecule inhibitors<br>targeting endoplasmic recticulum<br>stress response pathways as<br>potential therapeutic agents for<br>neurodegenerative diseases" | Dr. Ravanan<br>Palaniyandi  | Science &<br>Engineering<br>Research Board<br>(SERB)                         | 24.00      | 2013 | 2016 |
| 135  | "Synthesis and studies of novel<br>perylene diimide derivatives<br>for organic photovoltaic<br>applications"   | Dr. P. Sakthivel            | Science &<br>Engineering<br>Research Board<br>(SERB)                         | 14.02      | 2013 | 2016 |
| 136  | "Database of Drug Resistance<br>mutations and virtual<br>compounds for Leprosy"  | Dr. V. Shanthi              | Indian Council of<br>Medical Research<br>(ICMR), New<br>Delhi                | 11.28      | 2013 | 2016 |
| 137  | "Brain controlled wheelchair<br>study for neuromuscular<br>impairments"  | Dr. P. Geethanjali          | Science&EngineeringResearchBoard(SERB)                                       | 23.34      | 2013 | 2016 |
| 138  | "Reliable and Secured Space<br>Communication based on<br>fundamental cut-sets and<br>fundamental circuits in   | Dr. Selvakumar              | Department of<br>Space<br>Indian Space<br>Research<br>Organisation<br>(ISRO) | 13.63      | 2013 | 2016 |
| 139  | "Development of early warning<br>system for shallow landslides<br>using rainfall thresholds."  | Dr. G.P.<br>Ganapathy       | Department of<br>Space<br>Indian Space<br>Research<br>Organisation<br>(ISRO) | 8.96       | 2013 | 2016 |
| 140  | " Highly efficient and cost-<br>effective preparation of<br>nanoporous carbon by<br>microwave pyrolysis water<br>purification"                                   | Dr. Ashok Kumar<br>S.K.     | Department of<br>Science and<br>Technology<br>(DST), New<br>Delhi            | 6.48       | 2013 | 2016 |

| S.No | Project Titles Principal Funding   |                                | Funding   | Quantum             | Durat | ion  |
|------|--|--------------------------------|---|---------------------|-------|------|
|      |  | investigator                   | Agency  | of grant            | From  | То   |
| 141  | " Investigations of the growth<br>aspects and property studies of<br>alkali, (I-A) metals mixed<br>Boro succinates and malonates<br>single crystal"                              | Dr. R. Ezhil Vizhi             | Science &<br>Engineering<br>Research Board<br>(SERB) - DST      | (in lakhs)<br>16.44 | 2013  | 2016 |
| 142  | "Development of<br>nanocomposites alumina<br>hydroxyapatite biocomposite<br>coatings on real life Ti-based<br>orthopedic bone implant<br>substrate for enhanced service<br>life" | Prof. Geetha<br>Manivasagam    | Department of<br>Science &<br>Technology<br>(DST), New<br>Delhi | 19.24               | 2013  | 2016 |
| 143  | Development of early warning<br>system for shallow landslides<br>using rainfall thresholds   | Dr. G. P.<br>Ganapathy         | Dept. of Space  | 5.47                | 2013  | 2016 |
| 144  | Reliable and Secured Space<br>Communication based on<br>fundamental cut-sets and<br>fundamentals circuits in<br>Graphs"  | Dr. R. Selvakumar              | Dept. of Space  | 9.30                | 2013  | 2016 |
| 145  | "Development of Geospatial<br>data module for crop<br>production suitability index"  | Dr. Venkata<br>Ravibabu Mandla | Science &<br>Engineering<br>Research Board<br>(SERB)            | 17.88               | 2013  | 2016 |
| 146  | Release of IEI Grant for R&D<br>Project entitled: Study on<br>mechanical behaviour<br>of natural fibre reinforced<br>biodegradable natural resin<br>polymer composite            | Dr. G.<br>Venkatachalam        | The Institute of<br>Engineering<br>(India), Kolkata             | 0.30                | 2013  | 2016 |
| 147  | Synthesis and Experimental<br>Studies on<br>Lron Pnictides in Normal state   | Dr. Nilotpal<br>Ghosh          | Science &<br>Engineering<br>Research Board<br>(SERB)            | 42.07               | 2013  | 2016 |
| 148  | Developing an integrated (nano -<br>bio) technology based approach<br>for Groundwater remediation: A<br>bench scale<br>feasibility test for hexavalent<br>chromium               | Dr. Amitava<br>Mukharjee       | Science &<br>Engineering<br>Research Board<br>(SERB)            | 42.45               | 2013  | 2016 |
| 149  | Preparation and application of<br>biocompatible thin film<br>Coating on Surgical 316L<br>implant and its in vitro<br>Corrosion Study.  | Dr. U.<br>Vijayalakshmi        | Science &<br>Engineering<br>Research Board<br>(SERB)            | 22.00               | 2013  | 2016 |

#### 3.7 No. of books published i) With ISBN No. -6 Chapters in Edited Books -4

ii) Without ISBN No -

3.8 No. of University Departments receiving funds from



**3.9 For colleges Autonomy** CPE DBT Star Scheme (Not Applicable)

3.10 Revenue generated through consultancies: Rs 105 lakhs

| 3.11 No. of conferences | Level               | International | National | State | University | College |
|-------------------------|---------------------|---------------|----------|-------|------------|---------|
| organized by the        | Number              | 2             | 6        | —     | _          | -       |
| Institution             | Sponsoring agencies | CSIR          | CSIR     | _     | -          | Ι       |

**3.12** No. of faculty served as experts, chairpersons or resource persons: -56

**3.13 No. of collaborations:** - 39 International - 39 National - 121 any other -

3.14 No. of linkages created during this year 44

3.15 Total budget for research for current year in lakhs:

From funding agency — 800 Lakhs

From Management of University— 600 Lakhs

Total — 1400 Lakhs

#### 3.16 No. of patents received this year

| S.No | Type of Patent | Applied/Granted | Number |
|------|----------------|-----------------|--------|
| 1    | National       | Applied         | 29     |
| 1    |                | Granted         | 4      |
| 2    | International  | Applied         | _      |
|      |                | Granted         | _      |
| 3    | Commercialized | Applied         | _      |
| 5    | Commercialized | Granted         | _      |

#### 3.17 No. of research awards/ recognitions received by faculty and research fellows

#### Of the institute in the year

| Total | International | National | State | University | Dist | College |
|-------|---------------|----------|-------|------------|------|---------|
| 421   | 5             | 12       | 48    | 355        | Nil  | Nil     |

#### 3.18 No. of faculty from the Institution

Who are Ph. D. Guide's -601

And students registered under them -2492

#### **3.19** No. of Ph.D. awarded by faculty from the Institution -116

#### 3.20 No. of Research scholars receiving the Fellowships (Newly enrolled +

existing ones)

JRF – 19, SRF – 74, Project Fellow – 43, Any other – 158

#### 3.21 No. of students Participated in NSS events:

University level - 100 State levels - Nil

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|   | National level – Nil             | International level – Nil |
|---|----------------------------------|---------------------------|
| 3.22 No. of students participated in NC | C events:                        |                           |
|   |                                  |                           |
|   | University level – <b>Pre RD</b> | CCAMP State level – Nil   |
| 3.23 No. of Awards won in NSS:          | National level – Nil             | International level – Nil |
|   | University level – Nil           | State level – Nil         |
| 3 24 No. of Awards won in NCC.          | National level – Nil             | International level – Nil |
| 5.24 No. of Awards wor in NCC.          | University level – Nil           | State level – Nil         |
|   | National level – Nil             | International level – Nil |

| 3.25 No. of Extension activities organized |                    |      |          |  |  |  |  |  |  |
|--|--------------------|------|----------|--|--|--|--|--|--|
| University Forum –21                       | College forum- Nil | NCC- | NSS $-3$ |  |  |  |  |  |  |
| Any other – 2                              |                    |      |          |  |  |  |  |  |  |

# **3.26** Major Activities during the year in the sphere of extension activities and Institutional Social

Responsibility

- Road safety campaign, women Empowerment, Blood duration camp
- Health Awareness workshop, Green Environment, orphanage visit

## **Criterion – IV**

## 4. Infrastructure and Learning Resources

## **4.1 Details of increase in infrastructure facilities:**

| Facilities   | Existing           | Newly<br>created    | Source of<br>Fund | Total     |
|--|--------------------|---------------------|-------------------|-----------|
| Campus area  | 88,93,115<br>sq.ft | 1, 46,462<br>sq.ft. | VIT               | 9,039,577 |
| Class rooms  | 301 Nos.           | _                   | VIT               | 301       |
| Laboratories   | 273 Nos.           | -                   | VIT               | 273       |
| Seminar Halls  | 21 Nos.            | _                   | VIT               | 21        |
| No. of important equipments purchased $(\geq 1-0 \text{ lakh})$ during the current year. | _                  | 1504                | VIT               | 1,504     |
| Value of the equipment purchased during the year (Rs. in Lakhs)                          | 75,31.03           | 1,842.21            | VIT               | 9,373.25  |
| Others   | _                  | _                   | _                 | _         |

## 4.2 Computerizationofadministrationand library

Library uses library system and software for managing library services

## 4.3 Library services:

|                 | Existing              |        | Newly  | added        | Total                    |        |
|-----------------|-----------------------|--------|--------|--------------|--------------------------|--------|
|                 | No.                   |        | No.    | Value(inlakh | No.                      | Value  |
| Text Books      | 2,25,087              | 780.92 | 9,310  | 47.14        | 2,34,397                 | 828.06 |
| Reference Books | 20,493                | 910.17 | 1415   | 39.72        | 21,908                   | 949.9  |
| e-Books         | 80,000+               | 10.80  | 30,000 | Subscription | 1,10,000+                | 14.72  |
| Journals        | 574 For the year 2013 | 506.36 | _      | _            | 592 For the<br>year 2014 | 537.02 |

| e-Journals       | 13,250+           |         | ACS                 |       | 13,294+           |         |
|------------------|-------------------|---------|---------------------|-------|-------------------|---------|
| Digital Database | 17 Database       | 1548.13 | Journal             | 19.30 | 18Database        | 1918.13 |
|                  | For the year 2013 |         | 44                  |       | For the year 2014 |         |
| CD,              | 16,759            | 16.04   |                     |       | 17,910            |         |
| Audio &          | 315               | 3.05    | 276 CD <sub>s</sub> | 4.8   | 315               | 15.9    |
| Video            | 561               | 0.11    |                     |       | 561               |         |

#### **4.4 Technology up gradation (overall)**

|          | Total     | Compute | Internet | Browsin | Computer | Offic | Depart- | Others |
|----------|-----------|---------|----------|---------|----------|-------|---------|--------|
|          | Computers | r Labs  |          | g       | Centres  | e     | ments   |        |
| Existing | 8,292     | 117     | 1Gbps    |         |          |       | _       | —      |
| Added    | 6,494     | 93      | 1Gbps    | _       |          |       |         |        |
| Total    | 14,786    | 210     | 2Gbps    |         |          |       |         |        |

## 4.5 Computer, Internet access, training to teachers and students and any other programme for technology up gradation (Networking, e-Governance etc.)

Internet access is provided to all staff and faculty members. The schools and the offices are connected by LAN / WiFi.

#### 4.6 Amount spent on maintenance in lakhs:

| Total                                    | : 54986.78    |
|--|---------------|
| iv) Others                               | : 47231.00    |
| iii) Equipments                          | : 3888.00     |
| ii) Campus Infrastructure and facilities | : 3862.80     |
| i) ICT                                   | <b>:</b> 4.98 |

## <u>Criterion – V</u>

#### 5. Student Support and Progression

#### 5.1 Contribution of IQAC in enhancing awareness about Student Support Services

The IQAC through the 'Student Welfare Office' promotes awaresness about the student support services

#### 5.2 Efforts made by the institution for tracking the progression

The 'Alumni office' helps in tracking student progression. This is also done based on the survey conducted during the graduation of the students. Assces to VIT alumni data base is provided to all alumni for updating their data

#### 5.3 (a) Total Number of students

| UG     | PG    | Ph.D. | Others |
|--------|-------|-------|--------|
| 16,112 | 8,478 | 1,887 | 108    |

(b) No. of students outside the state - 18,221

(c) No. of international students - 593

| Men    |     |  | Women |     |  |
|--------|-----|--|-------|-----|--|
| No     | %   |  | No    | %   |  |
| 19,392 | 73% |  | 7,186 | 27% |  |

| Last Year |     |    |      | This Ye    | ar    |         |     |    |      |            |       |
|-----------|-----|----|------|------------|-------|---------|-----|----|------|------------|-------|
| General   | SC  | ST | OBC  | Physically | Total | General | SC  | ST | OBC  | Physically | Total |
|           |     |    |      | Challenged |       |         |     |    |      | Challenged |       |
| 4666      | 171 | 16 | 2117 |            | 6970  | 5115    | 161 | 21 | 3034 |            | 8331  |

Demand ratio — Application: 1, 82,799; admitted: 7,158; Ratio: 25.5:1

Dropout % - 0.30%

#### 5.4 Details of student support mechanism for coaching for competitive examinations (If any)

The Students welfare office facilitates students to undertake coaching classes for the competitive examinations through external agencies.

No. of students beneficiary: Not recorded

#### 5.5 No. of students qualified in these examinations



#### 5.6 Details of student counseling and career guidance

Total number of person counseled – 403

Total number of sessions - 985

No. of students benefitted: all students who have undertaken counselling

#### 5.7 Details of campus placement

|  | On campus                             | Off Campus                      |                           |
|--|---------------------------------------|---------------------------------|---------------------------|
| Number of<br>Organizati<br>ons visited | Number of<br>Students<br>Participated | Number of<br>Students<br>Placed | Number of Students Placed |
| 490                                    | 8464                                  | 5712                            | _                         |

#### 5.8 Details of gender v sensitization programmers

Woman safety & Awareness programmes are conducted

Periodically in hostels by YRC Health club & Uddeshya

#### 5.9 Students Activities

5.9.1 No. of students participated in Sports, Games and other events

State/University level - 609 National level - 492 International level - 144

No. of students participated in cultural events

State/ University level - 154 National level - 1252 international level - 155

No. of medals /awards won by students in Sports, Games and other events

Sports : State/University level - 78 National level - 185 International level - 64

Cultural: State/ University level -139 National level - 411 International level - 155

#### 5.10 Scholarships and Financial Support

|   | Number of students | Amount(inlakhs) |
|---|--------------------|-----------------|
| Financial support from institution                                      | 2155               | 659.2           |
| Financial support from government                                       | 132                | 25.4            |
| Financial support from other sources                                    |                    |                 |
| Number of students who received<br>International/ National recognitions | 25                 | 73.7            |

### 5.11 Student organized / initiatives

| Fairs : State/ University level — 205    | National level — 205   | International level —205  |
|--|------------------------|---------------------------|
| Exhibition: State/ University level — 2  | 05 National level —205 | International level — 205 |
| 5.12 No. of social initiatives undertake | n by the students      |                           |

5.13 Major grievances ofstudent (if any) redressed:Nil

## <u>Criterion – VI</u>

#### 6. Governance, Leadership and Management

#### 6.1 State the Vision and Mission of the institution

#### **Our Vision**

We at VIT University will impart futuristic technical education and instil high patterns of discipline through our dedicated staff, who shall set global standards, making our students technologically superior and ethically strong, who in turn shall improve the quality of life of the human race.

#### **Our Mission**

Our mission is to educate students from all over India, including those from the local and rural areas, and from other countries, so they become enlightened individuals, improving the living standards of their families, industry and society. We will provide individual attention, world-class quality education and take care of character building.

#### 6.2 Does the Institution has a management Information System

Yes, the institution has established a management information system recently.

#### **6.3** Quality improvement strategies adopted by the institution for each of the following:

#### 6.3.1 Curriculum Development

- Opinion obtained from different stakeholders
- Discussed at various levels and then taken up to the Board of Studies, which includes members from other institutes and industries and recommended for approval by Academic Council

#### 6.3.2 T e a c h i n g and Learning

- The faculty members are encouraged to update themselves to meet the demands in the teaching-learning process. This includes subject knowledge as well as teaching methodologies
- Periodical meetings at various levels, including the quality circle meeting, to ensure quality in the process
- FFCS offers complete flexibility in learning process
- Insisting on industrial exposure to students

#### 6.3.3 E x a m i n a t i o n and Evaluation

- Preauditing of question papers and post-auditing of answer scripts for Term end examination involvement of external members
- Auditing of question papers even for the Continuous assessment tests
- Common question papers for the examinations for courses handled by different faculty members
- Declaration of results at the earliest (less than a month)

#### 6.3.4 Research and Development

- Encouraging faculty members through specific recognition process for their contribution towards research activities
- Insisting on plagiarism reports before publication of student papers and also thesis submission
- Involvement of external members in the doctoral committee of the scholars
- Evaluation of research thesis by two examiners national and international
- Research planned discussed by the Research Advisory Committee, involving leading academicians from the country

#### 6.3.5 L i b r a r y , ICT and physical infrastructure / instrumentation

- Periodical review by the Library Advisory Committee
- Constitution of the Campus Development Committee to meet the increasing demands of the stakeholders and also create proper ambience and campus environment

#### 6.3.6 H u m a n Resource Management

Concentrate on the organization's COPS (culture, organization, people HR systems )

- Implement and evaluations of the action plans
- Performance Appraisal
- Employee Reward
- Employee Training & development

#### 6.3.7 Faculty and Staff recruitment

- Assessment Centre (Specialized in the domain)
- Internal & External Advertising
- Campus drive at top Institutions like IIT/NIT'S

#### 6.3.8 Industry Interaction/Collaboration

- Encouraging consultancy projects with and without financial benefits
- Memorandum of Understanding with relevant companies
- Establishing industry-sponsored laboratories

#### 6.3.9 Admission of Students

- Complete transparency in the whole process
- Selection by common entrance examination / merit in the qualifying examination followed by counseling
- Question paper for entrance, setby other instituties

#### 6.4 Welfare schemes for

| ching                     | Non-Teaching  |   |  |
|---------------------------|---|---|--|
|                           | EPF,ESI,Pension   |   |  |
| Medical Insurance         | Scheme,   | Medical Insurance   |  |
| Performance<br>Evaluation | Gratuity, Salary<br>Advance   | Education<br>Allowance, PE  |  |
| Canteen & Medical         | Transport   | Canteen &<br>Medical Facility   |  |
|                           | Medical Insurance<br>Performance<br>Evaluation<br>Canteen & Medical<br>Facility | chingNon-TeadEPF,ESI,PensionEPF,ESI,PensionMedical InsuranceScheme,PerformanceGratuity, SalaryEvaluationAdvanceCanteen & MedicalFacilityFacilityTransport |  |

6.5 Total corpus fund generated : 729.38 crores

| 6.6 Whether annual financial audit has been done | Yes | $\checkmark$ | No — |
|--|-----|--------------|------|
|--|-----|--------------|------|

#### 6.7 Whether Academic and Administrative Audit (AAA) has been done?

| Audit Type     | Exter        | nal                | Internal                             |                                    |  |
|----------------|--------------|--------------------|--------------------------------------|------------------------------------|--|
|                |              |                    |                                      |                                    |  |
|                | Yes/No       | Agency             | Yes/No                               | Authority                          |  |
|                |              |                    |                                      |                                    |  |
| Academic       | Yes          | Individual experts | Yes                                  | IQAC                               |  |
| Administrative | Yes(Finance) |                    | Yes(general<br>stock and<br>finance) | Stock<br>verification<br>committee |  |

### 6.8 Does the University/ Autonomous College declare results within 30 days?

| For UG Programmes | Yes |
|-------------------|-----|
| For PG Programmes | Yes |

### **6.9** What efforts are made by the University/ Autonomous College for Examination?

Not applicable

6.10 What efforts are made by the University to promote autonomy in the affiliated/constituent?

Not applicable

#### 6.11 Activities and support from the Alumni Association

Quality improvement strategies adopted by the institution for Activities and support from the Alumn Association

## VITAA Activities / events from 1<sup>st</sup> June 2013 to 31<sup>st</sup> May 2014

| S.No. | VITAA Activities / Events   | Date                         |  |
|-------|---|------------------------------|--|
| 1.    | UAE Chapter Social activity   | 28 <sup>th</sup> June 2013   |  |
| 2.    | Alumni lecture by Mr.Abhishek Pratap Singh (2008 B.Tech                         | 23 <sup>rd</sup> July 2013   |  |
|       | Bioinformatics)   |                              |  |
| 3.    | Melbourne Chapter gathering 27 <sup>th</sup> July 2013                          |                              |  |
| 4.    | VITAA Book bank scheme 29 <sup>th</sup> July 2013                               |                              |  |
| 5.    | VITAA-VIT Chapter (working alumni members in VIT) meeting                       | 1 <sup>st</sup> Aug. 2013    |  |
| 6.    | IFTAR treat for poor labourers organised by UAE Chapter                         | 2 <sup>nd</sup> August 2013  |  |
| 7.    | VITAA Half Yearly Executive Committee members meeting 3 <sup>rd</sup> Aug. 2013 |                              |  |
| 8.    | Coimbatore Chapter Social activity (lunch served to the inmates of              | 9 <sup>th</sup> Aug. 2013    |  |
|       | Aravanaikkum Anbu Illam, Coimbatore)  |                              |  |
| 9.    | 1989 batch alumni members gathering10th Aug. 2013                               |                              |  |
| 10.   | Coimbatore Chapter members visit to GH, Coimbatore                              | 15th August 2013             |  |
| 11.   | My-Tree programme in VIT 15th August 2013                                       |                              |  |
| 12.   | Alumni lecture by Mr. Ravi Raj Yanamandala (1989 B.E. Civil)                    | 16 <sup>th</sup> August 2013 |  |
| 13.   | VITAA-VIT Chapter coordinators meeting  | 23 <sup>rd</sup> August 2013 |  |
| 14.   | Safe Motherhood Day Celebrations organized by                                   | 23 <sup>th</sup> August 2013 |  |
|       | VITAACoimbatore chapter   |                              |  |
| 15.   | Chennai Chapter dinner meet   | 24 <sup>th</sup> August 2013 |  |

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| S.No. | VITAA Activities / Events                                       | Date   |
|-------|---|--|
| 16.   | Chittoor Chapter Hi-tea gathering                               | 25 <sup>th</sup> August 2013                 |
| 17.   | Hyderabad Chapter Hi-tea get-together29th August 2013           |  |
| 18.   | Bangalore Chapter Hi-tea meeting31st Aug                        |  |
| 19.   | Preplacement session to VIT Chennai Campus students organized   | 30 <sup>th</sup> & 31 <sup>st</sup> August   |
|       | by VITAA Chennai Chapter  | 2013   |
| 20.   | Teachers Day celebration organised by Coimbatore chapter        | 5 <sup>th</sup> Sept. 2013                   |
| 21.   | Puducherry Chapter Hi-tea gathering                             | 7 <sup>th</sup> Sept. 2013                   |
| 22.   | One day Orientation Programme for Govt. School teachers         | 7 <sup>th</sup> Sept. 2013                   |
|       | organized by VITAA-VIT Chapter                                  |  |
| 23.   | Alumni lecture by Mr. Prabakaran (2011 B.Sc. Computer Science ) | 14 <sup>th</sup> Sept. 2013                  |
|       |   |  |
| 24    | Alumni lecture by Privyrat Gadhyi (2005 B Tech, Biotechnology)  | 18 <sup>th</sup> Sept. 2013                  |
| 24.   | Read donation camp organized by Rangalore Chapter               | $2^{nd}$ October 2013                        |
| 25.   | LIAE Chapter Sports activity                                    | 2 October 2013                               |
| 20.   |   | 4 Oct. 2013                                  |
| 27.   | VITAA Rolling Trophy – Cricket & Throwball matches              | 5 <sup>th</sup> & 10 <sup>th</sup> Oct. 2013 |
| 28.   | UAE Chapter dinner gathering                                    | 11 <sup>th</sup> Oct. 2013                   |
| 29.   | UAE Chapter leisure trip to Dibba, Musandam, Oman               | 14 <sup>th</sup> Oct. 2013                   |
| 30.   | Alumni lecture by Mr. Bhuvaneswaran.S (2008 M.Tech.Energy &     | 18 <sup>th</sup> Oct. 2013                   |
|       | Environmental Engineering)                                      |  |
| 31.   | Sydney Chapter dinner meet                                      | 19 <sup>th</sup> Oct. 2013                   |
| 32.   | Alumni lecture by Mr. Ajay Viswanathan (2011 B.Tech IT)         | 24 <sup>th</sup> Oct. 2013                   |
| 33.   | Boston Alumni Diwali dinner meet                                | 2 <sup>nd</sup> Nov. 2013                    |
| 34.   | San Francisco Alumni Diwali Lunch meet                          | 3 <sup>rd</sup> Nov. 2013                    |
| 35.   | UAE Chapter lunch gathering                                     | 8 <sup>th</sup> Nov. 2013                    |
| 36.   | Muscat Chapter dinner meet                                      | 9 <sup>th</sup> Nov. 2013                    |
| 37.   | UAE Chapter Blood Donation Camp                                 | 15 <sup>th</sup> Nov. 2013                   |
| 38.   | VITAA UAE Chapter - Seminar on Contract Cost Management         | 29 <sup>th</sup> Nov. 2013                   |
| 39.   | Medical Camp organized by VITAA Coimbatore Chapter              | 29 <sup>th</sup> Nov. 2013                   |
| 40.   | First Anniversary Celebrations of VITAA Coimbatore Chapter      | 30 <sup>th</sup> Nov. 2013                   |

| S.No. | VITAA Activities / Events Date                                  |                             |
|-------|---|-----------------------------|
| 41.   | Alumni interactive session for STARS & GV School Development    | 4 <sup>th</sup> Jan. 2014   |
|       | Programme students  |                             |
| 42.   | Alumni lecture by Mr. Praveen Paranjothi (2002 B.Tech ECE) for  | 22nd Jan. 2014              |
|       | VIT Business School students                                    |                             |
| 43.   | Chennai chapter event - Cloud computing Session for VIT Chennai | 24th Jan. 2014              |
|       | campus students   |                             |
| 44.   | Reunion of 1988 & 1989 batch alumni                             | 25th Jan. 2014              |
| 45.   | VITAA Day 2014 (19 <sup>th</sup> Annual Alumni meet)            | 26th Jan. 2014              |
| 46.   | Alumni interactive session for STARS & GV School Development    | 1 <sup>st</sup> Feb. 2014   |
|       | Programme students  |                             |
| 47.   | Singapore Chapter gathering                                     | 16 <sup>th</sup> Feb. 2014  |
| 48.   | Coimbatore Chapter alumni meet with Chancellor                  | 20 <sup>th</sup> Feb. 2014  |
| 49.   | VIT's International Industry Conclave at Singapore              | 28 <sup>th</sup> Feb. 2014  |
| 50.   | Singapore Chapter lunch gathering                               | 1 <sup>st</sup> March 2014  |
| 51.   | Coimbatore Chapter activity (Participation in Women's Day)      | 8 <sup>th</sup> March 2014  |
| 52.   | Alumni lecture by Mr. Anand Madanagopal (1999 MCA) for School   | 14 <sup>th</sup> March 2014 |
|       | of Bio Sciences and Technology (SBST ) students                 |                             |
| 53.   | Alumni lecture by Mr. Uma Shankar Barathi. U (alumnus of 2007   | 22 <sup>nd</sup> March 2014 |
|       | batch B.Tech Mechanical) for VIT Business School Student        |                             |
| 54.   | Singapore Chapter event – Cycling at East Coast Park, Singapore | 12 <sup>th</sup> April 2014 |
| 55.   | Salem Chapter Inauguration                                      | 29 <sup>th</sup> March 2014 |
| 56.   | Creativity Contest for kids                                     | 28 <sup>th</sup> April 2014 |
| 57.   | VITAA Singapore Chapter - Interaction with Mr.Sambasivan        | 1 <sup>st</sup> May 2014    |
| 58.   | Coimbatore Chapter - Interactive session                        | 17 <sup>th</sup> May 2014   |
| 59.   | VITAA UAE Chapter gathering                                     | 30 <sup>th</sup> May 2014   |

#### **Distinguished Alumni Awards 2014**

Distinguished Alumni Awards are given to the most successful VIT alumni every year. Alumni who have made significant contributions / achievements in the field of Entrepreneurship, Academics & Research, Social Development and Corporate Career are eligible for the award. Chancellor distributed the Distinguished Alumni Awards for the year 2014 on 26 January, 2014 to the following alumni:

#### Academics & Research:

Dr. T. Gnanasekaran (alumnus of B.E. ECE,1989); Professor and Head, Department of Information Technology, R.M.K College of Engineering and Technology, Chennai.

#### Corporate Career:

Mr. Janakiraman Subramanian (alumnus of B.E.ECE, 1988); Head of Global Consulting and Integration Services, Verizon Enterprise Solutions, Asia.

#### Entrepreneurship:

Mr. Ashok Chakravarthi Arulmozhi (alumnus of B.E. CSE, 2000); Director, Evanssion FZCO, Dubai, UAE.

#### Social Development:

Lt Col S. M. Kannan (alumnus of B.E. ECE, 1990); Indian Army, Bangalore.

#### Hon'ble Chancellor's Special Award 2014 winners:

Hon'ble Chancellor's Award for alumni contributing to the growth of VIT & VITAA.

Mr. Venkatesh Paditham (alumnus of B.E. ECE, 1992); Founding Director, Vensys Consulting, Vensys Australia Pty Ltd., Sydney NSW 2000, Australia.

Mr. Sankara Subramanian. C (alumnus of B.E. Mech, 2003), Wildlife photographer,

Founder and Travel Evangelist for BE ON THE ROAD (www.beontheroad.com)

Ms. D. Bindu Madhavi (alumnus of B.Tech. Biotechnology, 2006), Famous Actress of South Indian Film Industry.

#### VITAA Scholarship Awards 2014

Every year the VIT Alumni Association provides scholarship awards to students on merit-cum financial need basis. This year, scholarships worth Rs.2,00,000/- were distributed for Vellore and Chennai campus students.

#### 6.12 Activities and support from the Parent – Teacher Association

Not Applicable

#### 6.13 Development programmers for support staff

- Implement a coherent planning framework that provides clarity on priority goals and Performance measures.
- Employee Training & development & Vigorous Follow up
- ➢ Soft Skills
- Technical Skills
- Cross Skilling
- Out bound-Team building Activity
- ▶ Handling students with positivety, Date : 02nd April 2014 (Wednesday
- Happiness at Work, Date : 14th May 2014 (Wednesday)
- Building Drive, Excitement and Speed at, 19th Nov 2013
- > Personality Temperament Test and Analysis", 19th Feb 2014

#### 6.14 Initiatives taken by the institution to make the campus eco-friendly

#### Natural resources usage in construction activities

- > Use of UPVC Windows in buildings instead of Wood.
- > PVC doors (Recycled plastic) in toilets instead of Wood.
- ➢ Use of Manufactured sand instead of River sand.
- Use of solid blocks instead of bricks(earth)
- ➢ Use of poor
- Other blocks instead of bricks.

#### Horticulture and Landscaping measures

- ▶ Landscaping done for about 67 acres.
- ▶ 15691 trees planted &maintained inside the campus.
- > 1014 trees were planted in & around Vellore and maintained by VIT.

#### **Energy conservation measures**

➤ 435 KW power saved by using LED ,solar,CFL,Pl lamps instead of using tubelights, clear bulbs etc.

Solar water heating system installed &maintained in M & N block for heating 20,000 liters of water every day.

> All lifts are provided with AC variable voltage; variable frequency drives (ACVVF).

#### Water conservation measures

- > Use of self closing taps in wash basins, urinals for avoiding wastage of water.
- > Treated water used for all landscaping areas.
- > Treated water used in toilet and urinal flushing purposes.
- > Shower usage avoided for water used in economically.

➤ Rain water harvesting system done in all buildings. Only excess water is conveyed to lake.

Lake maintenance for preservation of ground water, fishes, birds etc.

#### Other measures

- > Proper disposal of solid wastes, bio medical wastes, liquid wastes by authorized agencies.
- > Conducting training programs for faculty and staff members by learning and research cell.
- > Giving Performance incentive every year based on the performance of employees.
- ➢ Giving research seed money
- Conducting FDPS, Workshops

#### 7. Innovations and Best Practices

7.1 Innovations introduced during this academic year which have created a positive impact on the functioning of the institution. Give details.

**Regular Industrial Visits** 

- Training and Internships at reputed industries /
- Institutions to improve practical knowledge
- Conduct of Value Added Programs during holidays
- Training for CAT / GMAT / GRE / TOEFL
- Optional Foreign language Certificate Programs
- 7.2 Provide the Action Taken Report (ATR) based on the plan of action decided upon at thebeginning go the
  - Strong industrial connectivity with more than 120 industries in and around Chennai
  - > Most of the teachers have started video recording their lectures and are available in digital public domain

#### 7.3 Give two Best Practices of the institution (please see the format in the NAAC Self-study Manuals)

There are several best practices followed by the University, of which the recently tested 'Freedom to innovate' is in Annexure I, in the specified format.

#### 7.4 Contribution to environmental awareness / protection

- Green Vellore project Regular planting of trees within the campus Specific budget allotted to the maintenance of the 'campus greenery' 'Environment and Protection' club

#### 7.5 Whether environmental audit was conducted? No

To be initiated in the next academic year

7.6 Any other relevant information the institution wishes to add. (For example SWOT Analysis)

SWOT analysis given in Annexure - II

#### 8. Plans of institution for next year

- Increase in research output
- Increase in consultancy service
- Introduce new program in law

Javaraman Prof. Name Signature of the Coordinator, IQAC Prof. V. Raju, Vice Chancellor

Signature of the Chairperson, IQAC

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### Abbreviations:

| CAS  | - | Career Advanced Scheme                   |
|------|---|--|
| CAT  | - | Common Admission Test                    |
| CBCS | - | Choice Based Credit System               |
| CE   | - | Centre for Excellence                    |
| СОР  | - | Career Oriented Programme                |
| CPE  | - | College with Potential for Excellence    |
| DPE  | - | Department with Potential for Excellence |
| GATE | - | Graduate Aptitude Test                   |
| NET  | - | National Eligibility Test                |
| PEI  | - | Physical Education Institution           |
| SAP  | - | Special Assistance Programme             |
| SF   | - | Self Financing                           |
| SLET | - | State Level Eligibility Test             |
| TEI  | - | Teacher Education Institution            |
| UPE  | - | University with Potential Excellence     |
| UPSC | - | Union Public Service Commission          |

### Abbreviations:

| CAS  | - | Career Advanced Scheme                   |
|------|---|--|
| CAT  | - | Common Admission Test                    |
| CBCS | - | Choice Based Credit System               |
| CE   | - | Centre for Excellence                    |
| СОР  | - | Career Oriented Programme                |
| CPE  | - | College with Potential for Excellence    |
| DPE  | - | Department with Potential for Excellence |
| GATE | - | Graduate Aptitude Test                   |
|      |   |  |

| NET  | - | National Eligibility Test            |
|------|---|--------------------------------------|
| PEI  | - | Physical Education Institution       |
| SAP  | - | Special Assistance Programme         |
| SF   | - | Self Financing                       |
| SLET | - | State Level Eligibility Test         |
| TEI  | - | Teacher Education Institution        |
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## ANNEXURE II

### Title of the Practice: Freedom to Innovate

#### Goal / Objectives of the practice

The objectives of this practice, 'Freedom to Innovate', are as follows:

- To bring together enthusiastic students, pooling their skill sets and to develop unique as well as efficient products that could potentially improve human lives
- To find affordable solutions to unsolved problems and innovative alternatives to existing ones
- To create a network of engineers, both students and professionals, to share expertise and work on multidisciplinary projects

#### The Context

Conventional methodologies adapted in the teaching-learning process for the GenY students seem to be boring and out-dated. Their interest levels in learning the courses are not productive, sometimes counter-productive. However, these students love challenges and opt for independent and out-of-box thinking. After equipped with the fundamentals of their disciplines, they love to involve in exploratory learning while dwelling on the advances in any field of their interest. Therefore other innovative methods, other than class room teaching and routine projects, need to be adapted.

### The Practice

Apart from the theory and laboratory classes that are slated in the curriculum, the students are encouraged to involve in independent projects that could be used to solve day-to-day problems faced the society. Students who are curious to take up such exploratory learning methodologies, are given space to work and basic funding for their projects. They are free to choose any faculty member as the mentor. Restrictions are not imposed for choosing the faculty mentor. This 'freedom' allows promotion of interdisciplinary thinking among students. The students enrolled dedicate substantial amount of time on problem identification, which helps them to realize and clearly understand our end goals. They interact with professionals and ideate to envisage possible solutions and follow a cycle of designing, prototyping, testing and taking feedback to improve and come up with a better product.

#### **Evidence of Success**

Started in the AY 2012 – 2013 involving smaller group of students (8), the subsequent AY 2013 – 2014 saw more number of students being involved in this type of learning activities. As of date, about 170 students are working in this laboratory. Moreover, few students from the innovation lab participated in national as well as international competitions and brought laurels to the University. The students were one amongst the winners in, the CAMTech India Jugaadathon in Kolkata (all three prizes), Big data Hack-a-thon 2014, MIT Grand Hackfest 2014, CAMTech Uganda 2014. Getting involved in such 'extra learning' did not affect the academic achievement of the students. In fact, it is observed that their academic performance had increased. Also, such participatory learning was helpful in inculcating both individual as well as collective thinking abilities in students. The laboratory is partnering with CAMTech, Massachusetts Institute of Technology, Harvard Medical School, Massachusetts General Hospital, MIT Hacking Medicine, Novartis Foundation, UCSF and Wipro.



The creation lab is now the member of *Consortium of Affordable Medical Technologies* (*CAMTech*)

#### **Problems Encountered and Resources Required**

The students need to find enough time amidst their busy academic schedule, inclusive of preparation for their various examinations. Time is the major constraint. However, as the projects are voluntary and could kindle scientific interest, the students have no hesitation to work late night or during holidays / vacation. As of now small percentage of finance is earmarked for purchasing the necessary supplies for the execution of the project. This needs to be scaled up for higher financial requirement and to cater for the needs of diverse projects. On the whole, the challenges faced by these students are coping with academic commitments, resources and timely funding; access to state of the art technologies and need for dedicated R & D facilities.

#### **ANNEXURE II**

#### Strengths

#### Outstanding students representing all regions of the country

VIT represents India through its diverse student body. Every state and every region of the country is well represented in its student population. While more than 65% of the students come from the northern states, only 10% are from Tamil Nadu. The selection of students for various engineering programmes is done through a nation-wide entrance examination. The selection process ensures that VIT has an excellent outstanding student intake. In 2013, about 160,000 students appeared for the VIT Engineering Entrance Examination. From the applicants about 3000 students were selected from the top 20,000 ranks for its programs in engineering. The selectivity in VIT admissions is estimated to be the third highest in India. Selecting outstanding students helps shape the academic vigor, innovation in teaching and learning, scope of research, and the ranking in the national placement.

#### **Cmmitted Faculty**

VIT's basic strength lies in its faculty. Well qualified and committed faculty members have helped build the institution to its current status as a nationally ranked institution. The academic credentials of the faculty, their research profile, their involvement with industry, and their approach to continuous quality improvement have helped VIT to emerge as the first and the only institution in India to receive ABET (USA) accreditation for seven of its programs in engineering, Computer Science and Information Technology. In the last four years, the number of scopus indexed publications by faculty has enabled VIT surpass all the Indian institutions with the exception of IISc, IITs - Delhi and Karaghpur. Today, the university has become one of the most sought after institutions in the country for qualified faculty for teaching and research. The university receives an ever-increasing number doctoral degree holders, and scientists with overseas post doctoral research experience for teaching and research assignments. The University expects to have 100% of the faculty with Ph.D., by 2018. VIT University places utmost importance in recruiting, training and encouraging outstanding faculty members.

#### Institutionalized Quality Measures and Recognized Programs

VIT has developed strong quality measures that help assure international benchmarking of programs, curricula, faculty credentials, research output, and student services. A continuous quality improvement process assures the involvement of all stakeholders, ranging from students, parents, faculty, industry, employers, governmental agencies and the public at-large, in the

academic process. Quality Circles in each school, and at the program level, and institutional accreditation process based on established quality measures and accreditation criteria ensure that VIT maintains not only national accreditation standards, but also conforms to international accreditation criteria. As VIT is presenting itself for NAAC assessment and evaluations, it is also preparing to present all of its engineering programs for reaccreditation by ABET.

#### Strong Partnership with Industry and International Institutions

VIT considers its partnership with industry and international institutions as the defining element of its strategic plan. It has developed exceptional relationship with the Indian and the multinational organizations in every segment of industry. Starting with its partnership with Tata and Mahindra in Automotive, WIPRO and Accenture in the Information Technology, Honeywell and HCL in Electronics and Communication, and others, VIT has built an elaborate network of industry partners. This partnership has contributed to the development of a curriculum that is most responsive to the needs of industry, and has assured outstanding placement for VIT's graduates.

Very similar to industry partnership, VIT's partnership with the international institutions is set to define the global role for the university for a long time to come. With projects for students, study abroad programs and faculty exchange arrangements with more than 160 universities worldwide, VIT has prepared itself to compete globally. Through partnerships with premier universities such as Purdue and MIT in the USA, Australian National University, Mmbrara University and the Guangdong University in the other parts of the world, VIT has established an outstanding academic partner network. Hundreds of international students and faculty study on campus at VIT while an equal number of VIT students and faculty go to foreign universities for higher studies and research.

### World Class Infrastructure

VIT is distinct and well known among the academic institutions in India for its academic infrastructure. In addition to exceptional facilities such as excellent classrooms, laboratories, and library, the university has built up a campus infrastructure that can match well with those in the developed countries. On-campus accommodation for a diverse student body with provisions to study, carry out research and to experience a vibrant cultural atmosphere are among the features of our infrastructure.

#### Acknowledged Academic Presence in the Country

VIT has become a national institution, known for the quality of its academic programmes and its scholarly output. The international accreditation for its programmes, strong faculty, excellent placement record, its infrastructure and its links with industry and international institutions have helped the university to earn a place among the top universities in the country. Excellence in teaching has helped VIT gain ABET accreditation. High quality research output has helped the university gain a prominent place among research oriented academic institutions. The academic leaders and the public at large also acknowledge the university's transformation from a teaching university to research intensive university. This has helped in admitting best students and recruiting high caliber faculty. It has also been a motivating factor in establishing goals to be high, with the ultimate goal to become an internationally recognized university.

#### Weakness

### Lack of Public Support for Research

As a deemed university, VIT relies primarily on its own resources to support academic and applied research. Lack of 12B status is a disadvantage in getting support from funding agencies of the government. Although the faculty members of VIT compete for resources through grant proposals to various funding organizations, limitations in public funding process has a major impact on our research output. Resolving this weakness will help VIT make significant contributions to science and technology

## Lack of Supply of Qualified Faculty

As every major institution in India is facing, VIT is also facing the issue of shortage of doctoral degree holders in critical areas of engineering. In areas ranging from information technology to electronics engineering, and from mechanical to manufacturing engineering, we compete nationally for one of the most scare resources in the country, namely, the highly competent and well qualified faculty with a strong interest in applied research. Due to this difficulty, VIT has been meeting part of its needs by hiring outstanding master's degree holders and then supporting them to complete their doctoral degrees. It normally requires four to five years of time and salary as investment per faculty. Our current efforts to have 100% faculty with Ph.D in all schools will be achieved by 2018.

A related issue for all national universities in India is the retention of outstanding faculty. Since the job market for qualified engineering faculty with Ph.D. is very good, VIT along with other national institutions is offering incentives and support mechanisms to retain the best faculty. These include faculty development arrangements in partner universities in foreign countries, spending time in industry to undertake applied research and providing extra salary for holding a doctoral degree.

#### Limitation in Industry Sponsored Research

Indian industry lags behind its peers in the developed countries in terms of sponsoring research or providing financial support. Majority of the companies in industry do product related projects rather than formal research. Consequently, their opportunity to fund research is limited. Although industry has started looking at research, the process will take time to mature. It is a weakness in the system that VIT has to overcome.

#### **Opportunities**

#### To Maximize the Impact of Industry and International Partnership

VIT has a strong partner base in industry and international institutions. The university is working towards maximizing the impact of the partnership through the following:

- Creating faculty exchange with international institutions
- Promoting collaborative research with international partners
- Providing faculty with extensive exposure to industry practice
- Undertaking industry sponsored projects
- Creating opportunities for international student exchange
- Creating industry supported lab facilities
- Enhancing industry involvement in curriculum development and continuous quality improvement
- Creating global opportunities for graduates while providing similar opportunities for students from international institutions

#### To Expand Research Output

VIT started moving towards becoming a research intensive university. In the last four years, the research output has increased from 400 Scopus indexed publications in 2010 to 1600 in 2013. Currently VIT's focus is to increase the collaborative research with major research universities around the world for the following impact:

- To create joint international research labs
- To secure lab time for researchers in capital intensive global labs
- To support joint publications with international researchers
- To facilitate substantial increase of VIT's citation index
- To create global presence for VIT through joint conferences

- To share research output in national and international forums
- To increase the funding, especially international funding, substantially

### To Provide Mentoring for International Accreditation

Since 2003, VIT has focused its efforts to emerge as an internationally recognized institution. As a first stage in the process, the university secured accreditation for a select set of programs from the UK accrediting agencies. However, as the process for international benchmarking expanded, it became obvious that ABET (USA) accreditation was far more important to reach global ranking. Currently, VIT is the only institution in India to have ABET accreditation for programs in all its schools of engineering, Computer Science and Information Technology. There are seven ABET accredited programs in the university as of 2014. In 2015, VIT will have 14 ABET accredited programs. The evaluation process to accomplish it is currently under way. Until now VIT has gone through three accreditation cycles with ABET and has gained very valuable experience. The university has also groomed faculty with expertise to conduct international benchmarking, create continuous quality improvement mechanisms, respond to the stake holders needs and expectations, assure currency in curricula, devise appropriate assessment processes for the academic program and assure that program objective and the outcomes are met or exceeded in each case. With its experience, VIT can help other institutions with the following:

- Offering mentoring to Indian institutions interested in ABET accreditation
- Conducting workshops and seminars to prepare faculty
- Providing support for benchmarking exercises
- Helping establish continuous quality improvement processes
- Assessing and evaluating programs internally

### To Contribute towards Developing Technology Based Education

Our higher educational needs can be met not only through instruction provided in the classrooms, but also through education that uses technology based processes. The use of technology will enable interdisciplinary and inter institutional collaboration to develop instructional material and to teach effectively. It will enhance the learning opportunities for students. VIT sees greater opportunities in working with IITs and other national institutions and international partners to develop instructional material and deliver them to a larger segment of students within and outside the universities. The massive open online courses (MOOC), made available to a larger segment of the population at no cost, can have a major national impact. VIT sees a role for itself in contributing to national higher education.

### To Use Project Based Learning to Enrich Educational Process

Project based learning (PBL) has become a proven method to get students engaged, feel challenged, and it offers them with rewarding learning experiences. PBL is changing the

traditional learning process for better. VIT has recognized PBL as an important means to provide the students with opportunities to apply their skills to real world problems. Based on its experiences with PBL, VIT plans to make it as an integral part of the teaching and learning process.

#### Challenges

#### Compete Globally

VIT's aspiration is to become a globally ranked university. In this quest, we face the following challenges:

- Continuing to improve the teaching and learning process and be recognized as one of the best institutions
- Producing outstanding graduates, who will become leaders in their field
- Becoming a recognized leader in research output
- Gaining the respect and recognition of peers in academia and industry
- Becoming home for international students and scholars

#### Provide Global Experience to Students

VIT recognizes the need to produce graduates with strong technical background and professional knowledge, who are ready to become leaders in industry. VIT also recognizes the need to prepare the graduates to be global players. It is a major challenge involving large scale student exchange, support for faculty to be associated with international institutions and meeting the resource requirements for providing global experience to students.

#### Keep the Faculty in the Forefront of their Profession

Technical and professional competencies are important for the faculty to be in the forefront of their profession. Faculty development, engagement with industry and international partners, and sustained scholarly exchange are essential aspects of being in the forefront. VIT's challenge is to ensure that the faculty members are the best in their profession.

#### Provide Resources for Sustained Growth

For a growing institution with global aspirations, the challenge is to provide resources for its sustained growth. Qualified faculty members, recognized academic programs, outstanding student services, and research and teaching output that are considered among the best can only be achieved only with sufficient resources. VIT's challenge is to provide such resources as it grows from its current position. It is a challenge that the university is well prepared to face.

