

## Profile

**Name** : Satya Prasad Paruchuru, MS in ME, Ph.D., Fast Track and BOYSCST Fellow of DST-GoI

**Designation**: Professor; Alumnus – JNTU, AY 1988-1992

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Total Experience (in years)	Teaching	Research	Others (if any, specify):
31+	31+	31+	5 (Industry)

**Purpose:** The purpose of this detailed profile is to receive formal suggestions from the stake holders of the teaching/ academic/ research/ industry sectors and the employment institution, including the general public to result in the further improvement of global society and my contributory performance, during the projected service of 21 years ; concerned elaboration, for enhancement of the required sufficiency in awareness

**Objective:** To remain in the teaching and research fields of Technology and Engineering, with focus on the institutional, national, and professional interests, in alignment with the institutional vision and mission, in order to continue to produce the professionals of quality that is commensurate with the enrolled programme of study, for the advancement of the profession

### Summary:

Open competition for Fast Track and BOYSCAST of DST, GoI: scientists of national research organizations including all the **DRDO** and **National Laboratories** as well as the faculty members from the institutions of national importance including **IITs/ IISc.** in the areas of science, **technology, engineering,** mathematics, and **medicine** (further details in 5.7, 5.8, 5.9, and 5.10) ; **Every precaution has been taken as the faculty member and the principal investigator to conform to the guidelines of the authorities eg.** prevention of leaking to the resources of conflict of interest, to get the favors in return ; *awareness of the time, efforts, and 'the expense of life' involved in producing a commensurate technical result in spite of the prevailed unawareness* ; can the unethical efforts of the resources of the probable conflict of interest be ignored especially when the immaculately evident schedule, allocated activities like commensurate instruction, and indicatively assigned activities like the short term courses, exclusive UG/ PG project dissemination, sponsored research projects of post-graduate level, post-doctoral level, and the senior post-doctoral level, etc., have contributed to the endeavor of obtaining the institutional exclusivity, through excellency at the national level, at the time? Who got benefitted due to ignoring the efforts of the resources of the conflict of interest? Further details in the relevant points of the summary

Responsibilities and experience as a professor, mechanical engineering, nationally and globally from 2006 ; presently the employment institution offers no Ph.D. programme/ degree ; however, the institution facilitates the guidance of GoI nominated candidates, time to time,

with a provision to register (enroll) at JNTU-H, as such a provision does not exist at the institution ; **Result: Improved in the quality of the programmes of study and the faculty research**

Responsibilities and post-qualification experience at MNCs and nationally, commensurately professionally, and internationally reputed organizations over the past few decades, in order to meet the purpose of engineering education ; design of the enrolled-aware curriculum for UG to enable the enrolled/ taught, achieve trustworthiness, commensurate with the programme of study ; the curriculum enhancements from 2011 to 2015 for R11, R12, and R13 resulted as a means to handle unawareness, alleviate fears, and tackle with courage ; first to implement instructing ‘engineering drawing and graphics courses, and the relevant courses’ of the institution using CAD, continuously from 2011 in the undivided state of AP and Telangana, in spite of severe conservatory pressures due to non-existence of the practice in the nation ; organized preparatory course on CAD to the faculty members who taught engineering graphics, engineering drawing, machine drawing, production drawing, etc., by the manual drafting methods ; **faced unimaginable reaction from each and every resource of the probable conflict of interest, internally and externally?** Also, some of the prevailing designates suspected that the contribution might restrict the pressures? **Purpose of implementation:** (1) **Basic career essential** and **pre-requisite** for understanding CAD software as appropriate to core engineering specializations of UG and (2) Spending time with CAD software in the first year imbibes the **practice** of various software concepts that are relevant to other engineering specializations of UG ; later, it became the common practice in the nation ; within the tenure of much less than an year (section 2.2) **Result: Upgrading the quality of the programmes of study**

Earned UG qualification in **mechanical engineering** through a regular 4 year programme at the University (main campus) College of Engineering, JNTU (now JNTU-H) during AY 1988-1992 ; earned comprehensive and dual qualifications during this time ; such a programme acted as a means to gain the necessary comprehension, knowledge, skills, and abilities to impart training ; the programme demonstrated the need for competency in education and the subsequent employment, provided the essence to interpret qualification as a means to further the ambition and not as granted, inferred to provide the supervision in order to further the goals and inculcate trustworthiness, emphasized the contribution of such an academic programme to overcome the apprehensions and face the actuality, and sufficiently hinted to continue the consistent and able work

Postgraduate (post-UG) education from University of Texas; details in section 1

Achievement of the cognizant-society and objectives, to balance and benefit the life

Guidance for the projects of high impact and comprehension – avoids the ‘conflict of interest’

Initiation of the practice to organize the full time short term courses/ faculty development programmes (FDPs) of a minimum of 40 hours each, that does not seek any kind of financial support from the funding agencies or the employer, in UGC/ MHRD/ AICTE approved

colleges of the nation; organization of fifteen short term training programs of 24-96 hour duration during 2003-2012, eleven other technical training programs, and several other professional training programs as the coordinator and instructor, from 2002, those conform to the aforesaid norm ; effective utilization in implementing the significant curricular-improvements ; details in sections 2.2, 3.2, and 4.1 ; **the concerned resources, sensed the mentioned activity as one of the means to develop an insecure feeling?** Apart from the practices, inculcating a habit of honest professionalism could have promoted ambience? *Can anybody honestly say over a time frame, that we don't need such ambience?* **Result: Improved the quality of the programmes of study and the faculty research**

Feasibility studies and further developments - educational programs, sectorial revival, etc.

Learning resources - comprehensive, confident, and effective education with sufficiency

Development and implementation of a concept, 'bridge course' in 2001 as a means to significantly improve the 'learning methodologies'

Curricular improvements with significant progress – to benefit the enrolled UG/ surroundings

Demonstration and practice sessions on breathing and relaxation exercises, and subsequent discussions on the technical topics that are part of the curricular courses, prior to the college sessions ; help to interpret the 'nationally, commensurately professionally, and internationally' good textbooks and to remind through effective methods about the need to purchase the textbook of every course, well before the commencement of the respective semester as well as retention of the same ; academic help to those who travel long distances : allocation of office hours, prior to the commencement of sessions ; training with effective diet practices to facilitate the 'advanced learning' and healthy life ; on playing a crucial role to enable and support an ethical, stable, healthy, and happy society ; the concerned resources of the conflict of interest, **waited for an opportunity**, so confidently, for the reason that it is impossible to survive in the wake of the prolonged prevalence of the situations? **Result: Commensurate institutional academic projects that brought the national reputation**

Learning methods in accordance with the 'chosen field and interest' – to ensure the integrity

Ethical practices and thinking to ensure a sustainable economy – creation versus gain

Development of courses/ laboratory resources to alleviate the learning difficulties, from 1993

No waste of time to publish or guide the contents that are not supposed to be published by the faculty (details in 5.7 and 5.8) – Initiation of several publications in wos/ jcr/ sci journals, conferences held by the internationally proven professional societies, and several other technical presentations at the professional proceedings, in order to establish the consistency in teaching, from 1993 ; first international journal publication in 'technology and engineering', as the primary and corresponding author, at a self-finance institution in the undivided state of AP and Telangana, in a JCR journal (not a conference proceedings journal or volume or issue or similar) – at the time when not a self-finance autonomous institution existed at the mentioned geography and technology and engineering; this is the first journal paper published

in fracture mechanics, as the primary and corresponding author, at a self-finance institution in the nation; first in the nation to publish 12 international (includes the most reputed journal from ASTM, namely JTE-2017, online-07.2016) journal papers as the primary and corresponding author in specialist-audience journals, from a self-finance institution (5.7 and 5.8) ; grateful justice to the educational infrastructure followed by the development of reasonable employment and infrastructural roadmap! **A weird logic developed** : If someone else does the exclusive academic achievements, the institution gains the credit through such a person? Provoking the resources of the conflict of interest, facilitating the other resources of the conflict of interest within the influence, and facilitating the imitation of the concerned practices by appointing the mentioned resources on the responsibilities to get the professional favors, will slow down the progress? **Can the relevant designate/ ex-designate confidently say for a time frame** that the unethical practices have not been followed in the context of the discussion? **Result: Improved the quality of the programmes of study and the faculty research by providing feasible and respectful access to the world class learning resources – R11, R12, R13**

Initiation of several state of the art research facilities to further the multi-faceted education and ethics, for over two decades; Products, processes, and methods

Initiation and execution of several sponsored research projects (SRPs; section 5.9) from the National Funding Agencies (NFA), number of industry and academic projects (section 5.10) over the technical realm, to help the human resources to absorb academics without burden, thus to revive ethics in education ; research and applications; first SRP in ‘technology and engineering’, as the principal investigator/ fellow, at a self-finance institution in the undivided state of AP and Telangana from the NFA, DST (GoI) at the time when not a ‘self-finance autonomous institution’ existed at the mentioned geography and the area of technology and engineering ; the said SRP is the first in fracture mechanics, from a self-finance institution, in the nation ; first **BOYSCAST fellowship (DST, GoI), at a self-finance institution in the nation** ; never used the designation to preoccupy the principal investigator with busy and inconsistent schedule, by provoking the concerned resources of conflict of interest? **Result: Improved the quality of the programmes of study and faculty research by providing the template and efforts to prevent plagiarism and incompatible practices**

Earned revenue through a sponsored research project, consultancy, exclusive industry sponsored short term courses (no fee for the student participants) organized and taught by me, and savings made on the customs duty for the purchase and import of the concerned professional quality research equipment (as part of the aforesaid sponsored research project) from the leading professional manufacturers (due to the unavailability ; excludes the appreciation in the cost of the equipment) that is in total more than the total salary drawn during my entire service at the unique employment institution during August 2000 to February 2006 ; revenue through the aforesaid sponsored research project is 2.5% of the total annual revenue of the institution ; earned revenue through another prestigious international sponsored research project that is in total more than the total salary dawn during my entire service at the next unique employment institution in the teaching field during March 2006 to

December 2008 ; earned revenue through a sponsored research project that is different from the aforesaid sponsored research projects, two more external grants that are different from the aforesaid sponsored research projects, nominal fee charged to the participants of short term courses organized (in accordance with institutional guidelines) and taught by me up to 2012, savings made on the customs duty for the purchase and import of state of the art and professional quality research equipment (as part of the aforesaid sponsored research project) from the leading international manufacturers (due to the unavailability ; excludes the appreciation in the cost of the equipment), additional expenses incurred on the recently aforesaid sponsored research project for the import of professional quality research equipment from the leading professional manufacturers (due to the unavailability ; excludes the appreciation in the cost of the equipment) met from the regular salary drawn, and expenses incurred for filing of the patents met from the regular salary drawn, that is in total equal to the total salary drawn during my first six years of service at the next and recent unique employment institution in the teaching field during January 2009 to December 2014 ; did reach the standards pertaining to external grants in comparison to my previous employment in terms of quality, quantity, and communication, in spite of the excessive involvement (trustworthy role; section 2.2) in academics and the other responsibilities from AY 2008-2009 (section 7) ; **ignorance is not an excuse when a designate is entrusted with a responsibility and deliberately spent the ‘institution resources in the name of such a responsibility’?** Withholding the information by the designates, with dormant reasons is not an excuse? Misusing the work norms relevant to communication is against the professional ethics, especially while being entrusted with the concerned responsibility? Facilitating the resources of the ‘Conflict of Interest’, to read the institutional intellectual information of the present context is considered, a serious abuse of professional ethics ; further, attempts to possibly convince a biased person thinking that it is the destined activity and *providing an opportunity to propagate in support of the mentioned activities may be noted* ; Can the relevant designate/ ex-designate confidently say over a time frame that unethical practices have not been followed? Assumed the responsibility of voluntarily meeting the expenses of importing additional and required equipment on the aforesaid sponsored research project, and filing of patents during 2011-2018, from the regular salary drawn and the principal amount is equal new recruits to INR 9 lakhs; details in **5.9. Result: Improved the quality of the programmes of study and the faculty research by providing feasible and respectful access to the world class learning resources – R11, R12, R13**

**Initiation of the practice of summer project training** in the undivided state of Andhra Pradesh and Telangana, for the undergraduates for a minimum of 30 full time working days, as a lecturer at the employment institution in 2003 ; continuation of the same by extending the realm to the department level for the existing industry oriented mini-project as the Head of ME/ AME from 12.2011 to 08.2011 ; witnessed an **unimaginable reaction from each and every corner** in 2011 while being involved in the various prevailing initiatives, **e.g.** (1) R11 for the first autonomous batch, (2) finishing school, (3) preparedness for R11, (4) Research oriented short term courses to prepare for R11, (5) direct course development and instruction through the faculty preparatory programme to introduce CAD to teach ‘engineering drawing

and graphics courses, and the relevant courses' effective from 2011 to those faculty members who taught the relevant courses without CAD, (6) preparation and submission of National Board of Accreditation (NBA) application, (7) preparing for the recognition of the department as academic excellence, (8) submitting several external funding applications, including a fetched sponsored research project with state of the art equipment and fetched grant for the upgradation of laboratory with the proposed equipment development plan, etc. **Result:** the initiative catalyzed the 'enrolled- training' and the speedy completion of Ph.D. of faculty members during 2003 to the present date

Development and implementation of all time and high quality syllabus and curriculum of the nation for the undergraduate mechanical and automobile engineering programmes of 2011-2015 as HoD – ME and AME during 12.2010 to 08.2011 and Chairman of the department board of studies during 01.04.2011 to 31.05.2012 ; proved at the right time and have been proving the essence as an academician in technology and engineering ; continuation of the quality, quantity, and communication ; extension to various other programmes (section 2.2) ; witnessed the initiation of the intention in the resources of the conflict of interest for taking the **revenge by all the possible means?** **Result:** **Tribute to the gracious award of autonomy to the institution**

Demonstration of the importance of improving the absorption of certain basics/ prerequisites of the chosen field that fosters the '**continuous learning**' by the reliable resources, as long as alive and to imbibe the verification abilities by means of the multifaceted intelligence

Insistence on continuing to achieve excellence and exclusivity in skills and abilities, apart from the depth of knowledge to ensure effectiveness in the job

**Socrates: Superior Minds discuss ideas ; Average Minds discuss events ; Weak Minds discuss names**

**Inference:** An idea may be explained by means of an event; mention of an example (case study/ enterprise/ entity? Need for cautiousness about the possible wrong interpretation of an example) may provide the further understanding of the corresponding event/ idea ; every mind plays suitable roles including the mentioned, while addressing the distributed requirements of the audience ; clarity on the purpose; role of the presenter might be different from that of the enrolled ; every individual may have a distinct objective ; perceivable comprehensiveness may be essential to develop in to an all-round personality that supposedly preserves the immortal values of ancient culture and tradition ; most of the ancient philosophers/ scientists suffered due to lack of food and ensured accessibility of the sustainable resources, for the globe ; precaution is necessary to improve the skills and abilities and also preserve the confidence of the broad set of audience? *to make use of the institutional mechanisms to grasp the professional essence?*

Not even a minute's time spent on OD/ leave of absence in the name of an observer, resource person, or any other role external to the employment institution at any point of time and in any form (section 7 for the complete list of employers at different time-frames) ; belief in the practices of **nationally, commensurately professionally, and internationally** reputed

universities that target the deserving institutional and national growth through exclusivity ; **actuality versus interpretation**

Not even a paise (penny) or its equivalent, other than the regular salary in any form and at any time, in total or by parts ; not even a paise (penny) or its equivalent, more than the deserved, as salary or any other form and at any time in total or by parts ; nothing unauthorized at any time either by the institution (employer) or the government ; world acknowledged qualifications and credentials, never poised at deceiving anybody or any other entity by the reason of ignorance or any other; immaculate training in spite of the common adverse situation ; regular and classroom education of sufficient quantity, quality, and communication for the righteous purpose of education ; educating the possible extents; explaining the exclusive purpose of each individual and the requirement of rational balance for the useful existence ; enthusiastically and interestingly surviving for the purpose of education, in a less aware ‘field and domain’ consisting of very few qualified people, where insufficient comparisons and impatience supersede in all the matters ; habits that develop over a period of time and illegible promises appear to be reason for intense thoughts or actions which may start destroying the world in the short term or long term; **actuality versus the preparedness**

The enrolled UG and ‘work force’ need to be wary about the unknown and unpredicted consequences of ‘Attending the Classes from Home’ and ‘Work from Home’, obviously due to the lack of understanding of the new situation that never existed in the recent history ; to remember that the members of family need sufficient time to understand the stance and the inherent consequences ; a meticulous and patient explanation by sparing sufficient time is necessary to avoid such misunderstanding ; especially **Dedicated/ Trustworthy/ Talented/ Mighty/ Able enrolled UG and ‘Work Force’** need to pay special attention to this situation for the reason that it is hard to find the necessary spare time in the schedule, due to **preoccupation by knowledge-thoughts** ; restraint from the contempt-answers is primary; think twice if your answer may hurt the other members of the family ; **integrity is important**

Improvement of skills and abilities in an ethical manner to gain the relevant **exclusivity**

Thanks are due to the stake holders of the teaching, academic, industrial, and research fields, and the present employer/ past employers (section 7) for providing a leading, satisfactory, professional, and valued life that ensures optimal performance and communication at all the time frames

## 1 Educational/ Technical Qualifications:

S No	Level (UG / PG )	Year of passing	Specialization/ Institution
H S	S.S.C. (I – X standard)	04.86	Nirmala High School, Board of Secondary Education – Hyderabad, India <i>Certificate of National Merit</i>
	+2 education	03.88	The Hindu College, Board of Intermediate Education – Hyderabad, India
U	B.Tech. (full time,	06.92	Engineering and Medical Common Entrance Test

N D E R  G R A D U A T I O N  ug	<b>regular</b> ); from JNTUCE ( the main-campus college, Kukatpally); the college used to offer full time and part time programmes	(date of the award of the degree certificate)	(EAMCET) Rank, in the undivided state of AP and Telangana, <b>first attempt</b> : 417 ( <i>place of study: a municipal town</i> ) ; Admission Acceptance rate: 2.5%; Mechanical Engineering, Jawaharlal Nehru Technological University <u>College of Engineering (JNTUCE)</u> , JNTU, Hyderabad; (Project Guide: Dr. K. Eswar Prasad, JNTUCE, Er. R. Naidu, BDL, <i>Outstanding Grade</i> )
	ADSM- <b>Advanced Diploma in Systems Management (dual qualification)</b>	04.92	2 semesters-26 <i>teaching weeks each</i> Systems Management, National Institute of Information Technology (NIIT)-Regional Centre (RC), Hyderabad, <i>Gained the working knowledge of programming and systems</i>
	Audit for the next sem. ( <b>discontinued</b> to join UT abroad) <b>NCC</b>	08.92	3 <sup>rd</sup> semester – Honours Diploma in Systems Management (HDSM); <u>Systems Management, NIIT-RC, Hyderabad</u>
		08.91	Hyderabad
M A S T E R' S	Audit of computer science – UG courses	12.92	GRE: Quantitative: 780/800; Verbal: 460/800; Analytical: 570/800; Year of Test: 1991 ; University of Texas <i>Gained the knowledge of Relevance to Mechanical Engineering</i>
	MS in ME	05.95	Mechanical Engineering, The University of Texas at San Antonio, Thesis Supervisor: Dr. Agrawal – UTHSCSA, now UT-Health; Dr. Athanasiou – University of Texas <i>Publications</i> in specialist proceedings, indexed research books, journals, etc. from 1995 that exceed the phase of educational qualification; details in 5.3, 5.7, 5.8, 5.9, and 5.10 <i>Experience</i> at <b>nationally, commensurately professionally, and internationally</b> reputed MNCs, research and academic organizations; Fast Track and BOYSCAST Fellow, DST, GoI – competed with the scientists of national research organizations including all the <b>DRDO</b> and <b>National Laboratories</b> as well as the faculty members from the institutions of national importance including <b>IITs/ IISc.</b> in the areas of science, <b>technology, engineering</b> , mathematics, and <b>medicine</b> (further details in 5.7, 5.8, <b>5.9</b> , and 5.10)

D O C T O R A L	Ph.D.	08.2005 to 10.2008	Applied Mechanics/ Mechanical Engineering, Motilal Nehru National Institute of Technology (MN NIT – India); Jointly trained at University of Texas (UT) for one year; Thesis Supervisor: Dr. Jain – MN NIT; Dr. Wang – UT
	Post-Doctoral	10.2010	Training, as part of the BOYSCAST Fellowship research (Guide: Dr. Dong – UT; Dr. Wang – UT, Dr. Jain – MN NIT) Teaching, educational research, and industrial initiatives Initiation in ASTM/ ASME publications Multiple Sponsored Research Projects from the Nationally and Internationally Funded Agencies

## 2 Teaching and Learning:

### 2.1 Teaching Interests:

Academic; Taught: UG- 26, PG - 9

Taught (typical list):

- Engineering Mechanics – Statics (Text Book: EM by Timoshenko and Young)
- Engineering Mechanics – Dynamics (Text Book: EM by Timoshenko and Young)
- Kinematics of Machinery (Text Book: Theory of Machines by Bevan and Theory of Machines and Mechanisms by Shigley)
- Dynamics of Machinery (Text Book: Theory of Machines by Bevan and Theory of Machines and Mechanisms by Shigley)
- Mechanics of Solids - I (Text Book: Mechanics of Materials by Gere and Timoshenko)
- Mechanics of Solids – II (Text Book: Mechanics of Materials by Gere and Timoshenko)
- Finite Element Method (Text Book: Introduction to Finite Elements in Engineering by Chandrupatla and Belegundu)
- Structural Analysis (Text Book: Structural Analysis by Hibbeler)
- Fracture Mechanics (Text Book: Fracture Mechanics: Introduction and Applications by Anderson)
- Mechanism Design Laboratory (Lincages software, mechanism design for the biomedical applications, design of machines, etc.)
- Materials Engineering Laboratory (Fracture Mechanics, Mechanics of Solids, Tribology, biodegradable Implants )
- CNC Laboratory (Development of module for the machining time anticipation of jobs when such a feature did not exist in commercial software, in 1992)

- Vehicle Dynamics Laboratory (MAPLE software, Stability of a four wheel truck)
- Craniofacial Mechanics Laboratory (change of file format of CT scan images when there existed no software to allow to input an image to any of the FEM/ FEA tools)
- Computer Aided Equipment and Plant Layouts Laboratory (using AutoCAD)
- CAD Laboratory (3D Modeling; FEM/ FEA; modeling of residual limb; analysis of bolted connections; dataflow diagrams, handling databases, etc.)

**To Teach (Typical list; in addition to the aforesaid):**

Theory of Elasticity and Plasticity, Theory of Plates and Shells, Theory of Elastic Stability, Advanced Mechanism Design, Machine Design, Advanced Machine Design, Advanced Mechanics of Solids, Vibrations, Biomechanics, Biology

**2.2 Novel Teaching & Learning Techniques adopted:**

**Curricular reforms** of R11 (AY 2011-2015) – ME and AE being a source for the following:

- Comprehensive learning resources
- Lab protocols/ management
- Bridge course
- Process oriented guided inquiry and learning
- Learning by Doing
- What/ Why/ How am I teaching and What/ Why/ How am I learning
- Exercises and experiments
- To convey the essence of several sponsored research projects to the enrolled UG
- To convey the essence of several industry projects to the enrolled UG
- State of the art facilities and intellectual resources
- Several thought provoking curricular courses
- Fifteen short term training programs, eleven other technical training programs, and numerous other personnel development programs
- A net revenue (after expenses) of INR 127,000.00 on short term training programs (STTPs) during 2002-12 through a ‘nominal fee’ charged to the participants in order to revive the ethics
- Assistance in addition to the regular teaching

**References include:**

- Detailed syllabus (curriculum) books for B.Tech.- **R11** of ME and AE (prepared with the authorization ; Chairman, Board of Studies – ME and AE up to May 2012; **presently available on the institution-website**)
- Minutes of the institutional meetings conducted during 2009-2011, chaired by the management and CA (Chief Administrator) of **Vignana Jyothi**
- Organization and teaching of STTPs and other programmes during 2002-2012

- Paruchuru, S.P., Syllabus, Curriculum, and Evaluation Concerns that Affect Quality in Technical Education, National Conference on Quality in Technical Education, VRSEC, Vijayawada, 18 November 2002, pp. 56-57 (made available-upon request)
- Proposal submitted to NIIT, New Delhi in 2001 (made available-upon request)

#### **Involvement in Curriculum Updating/ Design:**

- Inputs to the engineering programs
- Effective revival of the curricula of UG programs starting from the first batch of the autonomous institution (VNRVJIET)
- Obtaining CAD software from the authorities much before the commencement of Academic Year (AY) 2011-2012 with the existing resources, providing thorough training of the members of faculty, and implementing instruction of 'engineering drawing and graphics courses, and the relevant courses' of the institution using CAD, from 2011 in spite of severe conservatory pressures from the institution and the other regulatory authorities
- Relevance of CAD to the circuit branches of study
- Source for the evolution of significant teaching improvements in the workshop methodology from the commencement of AY 2017-2018
- Demonstration of the teaching methodology of laboratory classes that involves the instruction required from the members of faculty, and the help of technicians/instructors with the operation of the laboratory machines and noting the machine-readings, thus ensuring value addition to the enrolled UG by involving the **exclusive** efforts and significant contribution of both the roles of human resources mentioned above, by avoiding the overlap of responsibilities
- Resource and assistance in addition to the regular teaching; details in section 7.

### **3 Co-curricular and Extra-Curricular Activities:**

Reading the contents of the 'Summary' (especially the first few pages) will answer the possible questions

#### **3.1 Interests and Hobbies:** *The following details explain the need for sufficient academic awareness apart from the professional life; most of the contents apply to the emerging economies; the detailed section may supplement the professional essence listed in the other sections*

Suggestion of benefits of the following national/ professional matters pertaining to societal, governmental, economical, educational, and leadership issues and the further assistance, as per the request

**Clear objective and the necessary approach** as a means of achieving (as the world is perplex, insufficiency may mislead; gratitude from the inner heart; tolerance)

**Hardships involved in the healthy-transformation of a conventional economy;** need to withstand the day to day challenges; aggressiveness versus conservativeness; strategic

policies and methods for the sufficiency and ecological balance, culture, awareness and happiness, and enhancement of the outcome

**Need to retain the competencies and a healthy economy**, thus promoting a healthy attitude towards the necessary means ; mutual respect for the inheritance, history, and culture of each place/ economy ; emphasizing the need for retention and conservativeness; critical and sufficient erudition from the past; promotion of stability to ensure sufficiency and ecological balance; need to enable the healthy transition (every place that was defamed at a particular time, flourished with abundant values at many times)

**Enabling enduring growth, reasonable standards of living**, and improving various practices in order to tackle the adverse effects of phenomena (various prosperous places that implement affirmative action maintain very high work and education practices, and dignity of labor; refinement of human resources, apart from the persistence on patriotism, tolerance, nationality, and humanity, being one of the reasons?)

**Sustainable assistance to the needy in order to meet the basic requirement** (exercise, nutrients, awareness about constraints, etc. may revive the health and a healthy attitude; in most of the prosperous places, the work and education practices are exemplary, even though there exists government-aid to provide food to the needy?)

**Means to effectively reduce the burden and enhance the result**, for sustainability of the systems (in some of the places, even though competent practices are being followed for the output, very high conscious and individual-level practices of clean, hygiene, and sanctity of the public are in use, in spite of the optimal use of human resources ; effective disposal of the used motor or engine oil, by the individuals and service-stations ; some of the prosperous service-stations/ auto part enterprises receive such used engine oil from the individuals for proper-disposal ; still the citizens exhibit higher levels of patriotism, tolerance, unity, nationality, and humanity?)

**Grant of permission** to set up tiny and probable pollution arising places, **at the designated places where there is complete surveillance about the operations and disposals** is a step forward to protect the water resources like tanks (cheruvu), rivers and underground water ; holding a market value to the used materials for recycling purposes is one of the ways of reducing the associated pollution

**Responsibilities, involvement, awareness, and sacrifices of a healthy role and the effect on the lives** ; to identify the problem in the surroundings as early as possible to do the needful ; to perceive the necessities as early as possible and to cope up with the harsh actuality, if persists ; sensing the indirect conduct and vulnerability as soon as possible ; *considering limitations of the people and systems in the case of comments and suggestions* ; trying the possible ; in case of identifying any prior deviation (and non-identification in the past due to systemic barriers?), getting rid of it in the present and future ; system improvement versus personal gain ; good versus bad

**To ensure an ethical, stable, healthy, and happy world in spite of obstacles, and suitably transfer to the next generation** by the legitimate methods (citizens with ‘discipline and dedication’ and individuals with values make the institutions, businesses, and economies run efficiently)

**Role of education** to revive the sustainable economy and integrity, in order to withstand the global changes (one of the ways of refining the human resources)

**Efficiency in organizations** (false beliefs about wrong activities could lead to severe implications ; against the conscience/ consciousness ; integrity versus intolerance/ inhumanity ; learning versus inertness/ interference ; silence as a means of enduring)

**To restrain from involuntary or inappropriate public expression** and the effect on values ; cautiousness about the obvious interpretation of the unmeant ; refinement in the other viewpoints, causing no/ minimum disturbance to the ecological balance and progress (normal employees of an industrial business voluntarily came up with a feasible method to transform the disposal of the same industry into healthy atmospheric elements; capable high school education with values being one of the reasons?)

**Prosperous economies have the track record of vesting the resources to revive the productivity**, eg.: farming. Devising mechanisms to improve the agricultural output to complement the development of different trends as the result of global change could ensure the dignity of labor. Eg.: An economy supported the farmers by encouraging the dairy-farm (rising the cattle) not only to improve the supply of milk and deriving products but also to ensure the organic manures to agriculture-field, thereby contributing to the considerable improvement of public-health and sustainable employment. Such simple and able measures brought in improvements in the economy through reviving several directly and indirectly connected sectors

Swachh (clean) rail (train) is a good initiative that is part of Swachh Bharat that happened in the recent past. Posters may campaign the practice of bringing a waste-bag to put their probable waste of eatables, safe products as permitted, etc., accumulated during the travel and dispose after getting down the train in order to meet the economic constraints. Such measures might help to stop the prevalence of diseases in the nation of high population, at competent costs. Modification to the toilets put forward as a part of this initiative can be further improved. The relevant modification to other public facilities by considering the humanitarian practices, improves the ambience and work conditions. Swachh Bharat may be extended to every public premise by customizing the names like swachh-rail. Ways and Acknowledging the initial accomplishment in a proper manner being one of the moral responsibilities versus inhuman traits

The definition of spending and its effects on the life and economy, need further understanding

The rational approach of the authority to improve the income as well as the practices that interfere with the life, might need consideration ; The practice of building ramp in the road

margin has one of the concerns that requires consideration i.e., encroachment ; addressing the sensitive problem could avoid the effectiveness of the roads and therefore ensures the ambience

Sustainable development initiatives as well as the reasonable security, contribute to stability

**Improvement of a reliable, safe, and secure public transportation system** is one of the measures for implementing a pollution free and effective society in the countries of high population density? Such a public transportation system might run buses of different sizes to suit the local needs and roads? For example mini-buses might run the shuttle service effectively on roads of smaller width and help to effectively transport the public to the wider ‘roads and junctions’? Such an initiative reduces the pressure for human resources in certain domains. Installing money collection box at the driver’s cabin and modification to the entry-exit-doors/ emergency-doors of the buses may help the bus drivers to collect the fare without obstructing their duties? It may be understood that the subsidies or equivalent initiatives will drive such schemes so that the employees of the public transportation system have to finally bear the associated financial burden?

Introduction of at least two hours of practice per week during the academic sessions up to 10<sup>th</sup> in the high school, on no-credit basis to attribute practice with manufacturing, automated manufacturing, electrical wiring/ repairs, disassembly and assembly of mechanical and hydraulic components, etc. might greatly improve the effectiveness of education and human resources. Such a mechanism might enhance the ability to follow the ‘nationally, commensurately professionally, and internationally’ good *text books* in the field of study

At present there exist two different streams to study the engineering UG programmes (B.E/ B.Tech/ B.S) in the nation. One of those streams is to study 12 years (10+2) of high school education (apart from Kinder Garten – KG, i.e. apart from the education prior to I standard) and then enter into the I year of the UG programme. The other stream is to study 10 years of high school education (apart from KG), then to study a 3 year poly-technique diploma programme, and then enter into the II year of the UG programme mentioned above. Therefore, the enrolled UG from both the streams study common syllabus starting from the II year of the programme. Such a system might nullify the exclusive strengths of the enrolled UG of the second stream, mentioned above. The students belonging to the second stream mentioned above might possess skills **that might help the manufacturing sector if they study a UG programme that constitutes laboratory and theory courses in 2:1 proportion**. The enrolled UG belonging to the first stream may possess better skills that help the design, analysis, and development sectors. **Caution**

**Consequences of wrong feedback systems and use of such feedback**, on the education and other systems (refinement of the systems, consisting of people in good number)

Mechanisms to encourage reading ‘nationally, commensurately professionally, and internationally’ good textbook for each course (subject) of the engineering programs, and feasible methods to implement: awareness on the practice to routinely write the disconnected content during the lecture ; perceiving the distinction between the intricate situations and functioning accordingly ; practice of office hours ; avoidance of wrong use of the flexibility in the preparation of the syllabi/ curriculum and sensible methods to implement ; a rational approach to prevent the technical lapses ; the applicable suggestions as per the cognition in order to ensure peace and integrity

The expectations of the enrolled UG and parents might reflect the actuality, considering the awareness on the effective modern learning techniques especially when the specific educational field and employment sector are new. To note that no educational institution can assure 100% faculty of particular quality and it is good to draw advantage, when it comes within the reach. In such a case, it is important to perceive that certain guidelines are poised to bring the situation into the regulatory ambience and insisting on such things even in the case where each and every second of time is important to ensure the commensurate exclusivity, *only proves the susceptibility to mislead* ; eg. a fair opportunity to follow ‘nationally, commensurately professionally, and internationally’ good text book and gain the professional exclusivity ; **until such a practice becomes common, is it good if the faculty members above the designation of Assistant Professor, teach only the programme specific prerequisite courses of UG and suitably commensurate non-elective UG courses, in terms of quality, quantity, and communication up to the ‘Vision and Mission’?** The skill capability gained through teaching the regular course work is supposed to target the national, commensurately professional, **and** international quality that is **commensurate with the programme of study**. Doing the needful, develops the skill to ‘follow and teach’ the contents of ‘**nationally, commensurately professionally, and internationally**’ good text book **and** the courage to ‘fairly encourage and guide’ the enrolled UG to follow such a textbook. The institutions do not follow a general guideline of only rendering to the practices that may be understood by the ‘enrolled UG or their parents’. *Does the nature create an infant only up to the knowledge that can be perceived by the infant?* If a faculty member has joined the institution with insufficient skills and professional capability for whatsoever reason, the institution administrative authorities need to have a firm plan and implementation to ensure that such a person do not mislead or influence the innocent enrolled UG. On the contrary, using them as one of the means to create the kind of activities explained in the summary, needs attention. Avoiding the wrong use of flexibility in the preparation of syllabus/ curriculum by putting the concerned people in dark to facilitate the same, might be one of the ways of improving the situation, especially if an institution wants to train the enrolled UG at national and commensurately professional quality in accordance with the vision and mission. Technical knowledge that has been emphasized at the beginning of the introduction of the programme of study and especially the knowledge that is more appropriate for a different level of the programme of study will primarily create the overlap of the responsibilities. One of the better options is to gain the knowledge that is

commensurate with a pioneering institution which gained an autonomous status, long time ago. Due to age or learnt behavior, if the mentioned option is not viable, the simple acceptance of the professional truth so that the unethically oriented motive would not be repeated intentionally/ unintentionally could improve the situation. Even after tolerating such behavior, for an abnormal duration, with no change in the attitude, and reiteration of the attitude, time to time, does the nature sustain? If a technical faculty member follows the '*nationally, commensurately professionally, and internationally*' good text book and *follows the tactical ways of not encouraging* the enrolled UG to follow such text book *for the trivial and self-protective reason*, such a practice only remains in the syllabus book. **If the syllabus narration is made and implemented in a manner where the students build up the pre-requisites from the first semester, is there any possibility of the students not being able to follow?** If sincere efforts are being put to develop the practices of following the '*nationally, commensurately professionally, and internationally*' good textbook, the efforts of various resources might poise at hindering such an initiative. **Just like the use of CAD became a continuously common instruction practice for 'engineering drawing and graphics courses, and the relevant courses' in the nation, starting from 2011, why cannot the continuous practice of effectively recommending 'nationally, commensurately professionally, and internationally' good textbook become so common?** Unless such a system is implemented, the PG programmes cannot stand up to the deserving standards of the nation ; until such a practice becomes common, is it good if the faculty members *above the designation* of Assistant Professor, teach only the programme specific prerequisite courses of UG and suitably commensurate non-elective UG courses, in terms of quality, quantity, and communication up to the '*Vision and Mission*'? Few institutions have *already started* and the others might fall behind ; need verification? may choose to degrade ; following '*nationally, commensurately professionally, and internationally*' good text book **is not sufficient ; essential to effectively recommend and encourage the enrolled UG within the limits of influence ; let's face the negative campaigning.** Perceiving the exclusive strength is essential to gain the confidence and give up the direct/indirect unethical propagation that targets the sustainable improvement. If the practices followed until now did not give a chance to identify such exclusivity, such practices may be reviewed with purity of thought and capable reasoning? How reasonable it is to ignore each and every practice that can be implemented in the institution for evasive purposes, irrespective of the service put up? Implementing suitable initiative by ethical means in the context of the teaching profession might be possible by *concatenating* and uploading the certificates of high school **up to 10<sup>th</sup>**, +2 education, ITI/ poly technique details **if not 10<sup>th</sup>** / +2 education, UG education *regular/ part-time/ three-year/ four-year* programme, **study-institution**, acceptance rate, along with the **affiliating** university, similar details of post graduate education, Ph.D. programme, etc. along with the profile that clearly outlines the above details, C.V./ resume of the respective faculty member, and the **clear proofs** of the accumulated in-service credentials of faculty in *an accessible form* with the proper surveillance, and clear instructions could minimize the

consequences. UG degree from a reputed university (*especially with the lack of information* on the ‘institution of study’, affiliated to the university and the *acceptance rate*), might not give effective conclusions. In the same way, a higher percentage of marks in a UG programme (even though affiliated to a good university), might not speak of any effective conclusion. By looking at the mentioned proofs of the mentioned credentials, even a guided-layman can figure out the resourcefulness of an engineering academician, with the basic knowledge of the similar profiles. At this juncture it is good to note that the evaluation authority (like the Board of Secondary Education, the Board of Intermediate Education, University, etc.) of the same educational programme/qualification (*nature of the programme* might be important, as stated above), does not award the percentage of marks, as per the unique standard, over the given time-frame/s, **even though the evaluation system is absolute** (*not relative grading*). If the answer to a question were the same *in essence and as expected* in comparison with a former time frame and a later time-frame, the percentage of award of marks appears entirely different, in general eg. an evaluation system awarded 70% to the former time-frame and 95% to the later time-frame. **Massive evaluation** is one of the reasons. *It is worthwhile to obtain clarity from the right authorities (not name sake) and add the information by a clearly visible link on the same website.* Imparting knowledge is important and the capabilities are more important for an engineering academician and therefore cannot afford to distract by the ‘tactical and massive practices’. The mentioned documents in conjunction with the other career related documents as specific to the employee, with full details as stated above might be conclusive. Both NBA and NAAC accreditation are important in conjunction with the above information

**Reading the contents of the ‘Summary’, especially the first few pages, will answer the possible questions**

Suggested the following, in the wake of the practices that sufficiently hindered the process : Work that commensurately represents the designation ; need to withstand the apparently-smooth words that target the waste of time ; Caution: managing the time tables to look better in the view of other professionals and functioning accordingly ; scheduling with the resources of the conflict of interest ; being a designate, facilitating or floating the objectionable version so that it directly/ indirectly reaches and further aggravates the situation ; not letting to know the facts by provoking ; objectionable attitude to the extent that severely hindered the progress ; no teaching is as good as following the evasive approach, in the name of free choice, by the policy backup of the initiatives like the lesson plan ; pretention of being engaged, by opting to teach the courses of ‘low enrolment’ or electives that have low attendance, protective fear approach being a designate/ ex-designate (appears morbid; detailed and chronological bio-data explains) **so that there exists sufficient time to significantly hurt** the people who do not have the professional orientation to further waste the time to give the retort (might not be perceived during the service ; degrading the norms by resorting to unethical favors and *expecting favors* ; assumption that nobody monitors in the name of ‘positivity/ negativity’), preoccupation of the institution time (including the institution-work-days and lunch/break time) by the

inherent objectives of unethical or excessive earning, the unethical propagation, and the other means to tactically mislead and prevent the contributors eg., *a minute's time spent to discuss the methods of unethical or excessive earning during the institution time can lead to the total inferior work performance* due to preoccupation and therefore would resort to objectionable tendency for survival ; as the result, every proactive and helpful initiative looks like a barrier and appears to be the cause of somebody ; eg. work hours ; unnecessary apprehensions may continue to self-hurt the health ; furthermore, such a distraction fosters knowingly/ unknowingly, the inherent tendency ; to gain motivation for such unethical move by the acts of unethical discussion and the other unethical means like hearsay ; attempts to use the designation to mislead ; contribution to total ineffectiveness by promoting plagiarism in the possible extents of the influence and it takes sufficient time to perceive due to the aforesaid behavior ; black mail tendency in the shelter of unethical means (abnormal if it lasts forever) ; positivity/ negativity versus sufficient precaution ; tactical nature for the assumptive reason of 'viable alternatives' ; functioning to the extent that hurts the progress due to misleading and disturbing the exclusive educational methodology of the institution ; might not be sensed by the like-minded people ; protective fear approach of the designate due to incompatibility (appears to look extremely well, evident from the qualifications and commensurate consistency) and the prevailing personal (and clearly nonprofessional) pressures, might be attributed to the tendency to disturb the institution exclusivity and the resources of potential conflict of interest might use the situation to severely hurt, due to the 'lack of continuous monitoring' ; pretention has become an ongoing practice ; **to observe 'allocation/ non-allocation'** ; preparing a cheating format to conceal the facts and putting the proactive faculty member busy or occupied with trivial reasons, *eg. Course Objectives (CO), Programme Objectives (PO) attainment : projecting only the result with not a mention of the effectiveness details of the process followed ; quality of the text book, syllabus, curriculum, examination system, and the result will have to be treated as different parameters to evaluate the co-po attainment ;* facilitating to provoke the resources that lack maturity of thought, in the human resource intensive organizations ; manipulative influencing versus the improvement of skills

**Prevailing concern:** The members of faculty of several institutions get paid proportionately with the members of faculty of the Indian Institute of Technology (IITs/IISc) and why are the average achievements of members of faculty of the former, not even 10% of the average achievements of the members of faculty of the later, in terms of quality, quality, communication, and dedication? The education field looks very simple as well as complex such that for every thought provoking question, there is an easy answer that appears to look right. For example, the popular answer to the previous question is that the students of the IITs are better as compared to the other institutions. However, if that is the only reason, then the members of faculty should have at least 70% of the achievements of the members of faculty of IITs and it is not the case. The next point that strikes the mind is that the educational achievements of the most of the members of faculty of IITs, prior to the employment are better **and every one can find**

**answer to the question at the same point.** If the educational background of a member of faculty is not up to the mark, one of the mechanisms to proactively sufficiently improve, is to follow ‘**nationally, commensurately professionally, and internationally**’ good text book for each and every teaching-subject, **announce the same in the class fairly at the beginning of the respective semester and be supportive to the enrolled UG in overcoming the inherent difficulty**, get advice to try the ‘faculty initiatives’ suggested by the regulatory authority even if it consumes good amount of time initially, and work sufficiently beyond the normal work-hours at least for 10 years from the beginning of the service or at least until overcoming the deficiency. Such practices may be feasibly implemented by any individual and enable to think beyond the incompatible behavior. **Such competent practices along with the attitude might transform the nation into a sustainably resourceful nation**

Identification of **4 – 6 programme specific prerequisite courses in every UG programme** of ‘technology and engineering’ specialization is essential, to gain the prerequisite knowledge that in turn helps to understand the further courses that are part of the later semesters and subsequently helps to fare well in the early days of the career. The concerned resources do not usually get a chance to perceive on time. In other words, if a junior or senior of an UG program or early professionals perceive for the first time, it is neither easy nor worth it to make up for the lack of knowledge because, the spent time can never be made available. It is not sufficient to merely pass such courses and every enrolled UG may aim at attaining maximum knowledge by sincere efforts. One of the reasons that the enrolled UG do not have a chance to perceive this on time is that the technical education system has not yet imposed the sufficient prerequisite system that takes care of such a problem. The international universities in the developed countries follow individual course specific prerequisites and therefore such a problem does not arise. However, the medical colleges of the nation follow a prerequisite system that is feasible in the technical education as well. The medical colleges give a clear instruction to the enrolled UG, at the time of admission, that passing few essential courses like anatomy (similar to the **programme specific prerequisite courses in technology and engineering**) is a prerequisite to get promoted to the next semester. Therefore the medical students observe the importance of such courses at the time of admission and spend good amount of time to excel in their careers of choice. **It is good to note from the effective implementation point of view that the concerned resources do not have the possibility to get mislead, because the essentiality of prerequisite courses appears in writing.** It is good to note that few aware-teachers instruct the enrolled UG of trustworthy conduct so that they gain a fair chance to excel in the programme of study as well as the career. It is also good to note that only the senior members of faculty teach such courses in the medical colleges. Also, to note that such senior faculty members in good medical colleges are not undermined and defamed to the possible extent, through the wrongful projection of organizational charts. *Until such a system is customized to the technical education, is it good if the institutions follow their strategies for the effective implementation?* **Just like the use of CAD became a continuously common instruction**

**practice for ‘engineering drawing and graphics courses, and the relevant courses’ in the nation, starting from 2011, why cannot the practice of effectively intimating the importance of the programme specific prerequisite courses be inculcated, apart from effectively recommending ‘nationally, professionally, and internationally’ good textbook for the curricular courses? Until such a practice becomes widely common, is it good if the faculty members *above the designation* of Assistant Professor, teach only the programme specific prerequisite courses of UG and suitably commensurate non-elective UG courses, in terms of quality, quantity, and communication, up to the ‘*Vision and Mission*’?** The problem relevant to the mentioned situation is so severe that the employment organizations are forced to test for the pre-requisites to the programme specific prerequisite courses. Testing the job aspirants merely by the mentioned procedure further confuses the enrolled UG in identifying the programme specific prerequisite courses. **For example, such prerequisite courses in the mechanical engineering specialization** are Engineering Mechanics – Statics and Dynamics, Mechanics of Solids (or Strength of Materials/ Mechanics of Materials), Metallurgy, Fluid Mechanics, Thermodynamics, Kinematics of Machinery, and Production Technology (or Production Engineering/ Manufacturing Technology/ Manufacturing Engineering). An example of Civil Engineering: Engineering Mechanics, Mechanics of Solids (Strength of Materials/ Mechanics of Materials), Fluid Mechanics, Structural Analysis, Building Drawing, Construction Materials, etc. An example of software and connecting branches of study: Introduction to Programming (like C), Data Structures, Advanced Data Structures (data Structures – II), Discrete Mathematics, Computer Organization, Computer Architecture, and Operating Systems, etc. To elaborate, good knowledge in Computer Organization and Computer Architecture might help the Computer Science and Engineering graduates to custom develop a computer that is sufficient to interface a specific machine, instead of superfluously connecting a commercially available computer like a personal computer. Such practices help in mass production by cutting the costs and withstanding international competition. In the same way, the fluency in such courses puts the graduate at the helm of the engineering field. The lists given here are essential courses in which good efforts and knowledge are necessary to gain the programme specific knowledge through other curricular courses in the named specializations. In other words, this list cannot be interpreted that the other courses are insignificant ; sufficient inputs as per the cognition

Designates facilitate the employment institution to meet the expenses of conference papers, etc. It may be perceived that such a practice results in truncating the skills and capabilities of the faculty members. Considering an example from an ideal place/ institution in an incompatible matter, and ignoring the essential practices, is in what way justified? Facilitating such easy habits in the faculty members result in the loss of the capability. The members of faculty may apply and fetch sponsored research projects (SRP) and other grants from national funding agencies to meet the research costs and the aforesaid expenses so that the process improves the capabilities and imparts the courage to follow the essentials. No matter how refined the modern human being is, the origin of the human species was

carnivorous. **How many designates can confidently say that they did not perceive it in their early career?** Giving up such good practice is nothing but giving up the values after graduating from a school that imparted the contemporary values. Being a designate, such a practice is in what way justified? Is it reasonable to elaborate on the malpractice going on in the shelter of patents? Rendering to the practice of using the opinion of the resources of conflict of interest and also letting them read the details by entrusting on such responsibilities, is obstructing the institution from gaining the exclusivity, for the reason that such details are supposed to be protected until the award of the patent as well as the competently and commensurately successful commercialization, no matter what illusion has been informally floating around. In continuation to the details presented in the ‘summary’, such a practice is affecting the institutional exclusivity. **The institution has the responsibility** to protect the content of the patent from being copied, until the award of the patent, and the competently and commensurately successful commercialization of the patent, on behalf of the institution. **Also, the institution has the responsibility** to ensure that the resources of the conflict of interest or the probable resources of conflict of interest do not read such details. **The stance that** ‘after communicating to the patent office, it was deemed to make the information public, so how does it matter’ can be once again checked for the consistency ; **To minimize the elaboration**, just because an institution submitted an application to AICTE, can the resources of the potential conflict of interest be facilitated to see the information? **Does it not sacrifice the originality?** Ignoring such an obvious point by the approach mentioned in the ‘summary’ and resorting to unethical procedures that are tactically framed, is probably letting to survive. Any thoughts on how adversely it has been **influencing the sincere efforts?** Following the age old and unethical practices to take the revenge, if such facts are put forward for the benefit of the institutional exclusivity? What measures were followed by the institution in the recent past, to prevent the practices that sacrifice the exclusivity?

Every professor of engineering colleges may be associated with an exclusive and unique laboratory (academic and/or research) and providing the space will prompt such a faculty member to continue to initiate and add equipment by fetching sponsored research projects (SRP) from the national funding agencies (NFA), industry, etc. Even if a member of faculty with a different designation fetches SRP, the laboratory space allocated for the execution of the project may effectively continue with the supervision of the same person. **This is an essential mechanism to follow if an institution wants to let the enrolled UG to grow into trustworthy professionals so that they become the representative alumni to reflect in the national and international image of the institution.** On the contrary, the movements to grab the SRP connected facilities, unethically provoke the human resources with the possible conflict of interest, to prompt them to propagate through unethical methods to avoid the barriers, not revealing the distinction between the specialist faculty research and its relevance to the enrolled UG in spite of being in the relevant designation, with the abstinence from accepting the facts and *propagating the opinion that the pressures will increase*, only tells the biased approach of encroachment to prevent the progress **that might not result in anything useful.** If the designates have been appointed on the responsibility to oversee the campus, it is their responsibility to have clarity on the recently mentioned and underlined fact. Not

following such a responsibility can be attributed to the fear of accepting the professional truth. **The prerequisite to execute the responsibility requires commensurately polite and unbiased ways of soliciting the information**, if a person is entrusted with a responsibility. Also it is the pre-requisite to not provoke the conflict of interest, especially when working towards the institutional exclusivity. **It is also the pre-requisite to give up the tendency to project the PPT in a biased manner.** It is also the pre-requisite to intimate the essentials instead of forcing to abstain from the communication. **It is also the responsibility of the institution level designates to facilitate such ambience if entrusted with such a responsibility.** [may refer to the explanation given in the context of the summary]

Explanation of the existing concerns on the teaching initiative called WIT/WIL (what am I teaching/ what am I learning; why am I teaching/ why am I learning) and HIT/HIL (how am I teaching/ how am I learning) ; there is no point in including the downloads of information from the internet and text books in the write up of WIT/WIL report ; a mention of the detailed reference of the internet source/ text book material taught in the class with reference to the curricular contents is enough to include in the write up ; if an academicians follows the nationally, commensurately professionally, and internationally good as well as the prescribed text book, and helps the enrolled UG to sufficiently follow the same, such an endeavor may be intimated

One of the ways of enforcing useful reforms in engineering colleges is to provide the necessary awareness. The next step is to help to gain access to the necessary resources. The policies of the regulatory authorities may healthily bring the institutions out of confusion and might result in good institutional practices. The regulatory authorities may put sincere efforts to hire competent, genuine, devoted, successful, and aware professionals as the members of the committees. The regulatory authorities may follow the existing mechanisms and/or devise new mechanisms to produce, access, and hire such human resources for the committees. The policies of the regulatory authorities and committees may give less manipulative flexibility to the members of the committees

There is a requirement to implement the practical mechanisms to improve the competencies of the engineering and other professional programmes of the nation, at par with the national, commensurately professional, and international norms. The discussion of this point includes working alternatives to effectively implement such mechanisms. Can the **exclusivity** gained through effectively encouraging the enrolled UG to follow **‘nationally, commensurately professionally, and internationally’ good text book** provide the reliable solution? *Is it possible that such a practice might develop in to a widely accepted practice similar to the continuous practice of instructing the ‘engineering drawing and graphics courses and the relevant courses’ through CAD software, from 2011?* **Until such a practice becomes common, is it good if the faculty members above the designation of Assistant Professor, teach only the programme specific prerequisite courses of UG and suitably commensurate non-elective UG courses, in terms of quality, quantity, and communication up to the ‘Vision and Mission’?** Thus, is it reasonable to allow the responsibility of gaining nationally, commensurately professionally, and internationally

evident exclusivity on behalf of the institution? This alternative is much better than the less-known ‘cultural revolution’ (shutting the educational institutions and asking the prevailing students to work in the farms/ industry/ government/ military) put forward by China during 1965-1975, which acted as a catalyst in transforming to a resourceful nation. Modification of the minimum duration of academic programmes and the minimum requirement of academic credits, for the award of academic degrees might help to accommodate the changes including placement of emphasis on attendance. For example, universities of few developed nations successfully run the academic programmes in a semester system, by limiting the minimum requirement of academic credits for the award of UG programmes, to one hundred and forty and this number is about 30% less than the comparative credit requirements of the domestic universities. **Unless there is sufficient policy backup from the authorities, it is very difficult to bring the resourceful change** ; until such a practice becomes common, is it good if the faculty members *above the designation* of Assistant Professor, teach only the **programme specific prerequisite courses of UG and suitably commensurate non-elective UG courses, in terms of quality, quantity, and communication up to the ‘Vision and Mission’?** *honorable society gives a fair opportunity to rehabilitate those who had objectionable habits in the past, with the intention that the individual has been transformed ; However, if the transformation only happened from a habit to another habit?*

The word organizations need national representatives with broader vision

Some of the contemporary consequences contributed to the incredible increase in the cost of agriculture, cost of living, cost of education, cost of medical services, cost of construction/ accommodation, and excessive parity in the standards of living. One of the most affected sectors is agriculture. The affect may be attributed to the serious deficiency in demand versus supply of the human resources in the fields like agriculture and precision capital goods. The early professionals might be subjected to ‘mislead of short-cuts’ and thereby happen to be attracted to the deviatory trends that expend the resourceful time. It is good to perceive that the most successful professionals excel in their field by the determined, reliable, and trustworthy efforts that never resort to misleading short-cuts. There is no single instance to mention that a professional proved to be successful in the life time, by such short-cuts. Implementing the ethical practices is one of the ways of not subjecting oneself to such misleads. It is good to perceive that the starting pay is not the sole criterion. The career that gives ample opportunity to grow in to an all-round personality never starts with a lucrative salary. The people depending on the disorganized sectors need consistent ways to enhance the income in order to meet the expenses to support the family. For example, in the past, farmers used to find the ways of consistently improving the income as per the needs of the family; eg. rising the cattle, developing compost for the agriculture field, etc. In the present era, such a consistent development might be made feasible, by the recognition of agriculture as a suitable tiny industry. Such an initiative might give the confidence, motivation, and enthusiasm to the people that are present in such a sector to consistently improve by following the reliable means of work to meet the sufficiency. It is good to perceive that the agriculture sector has different work schedule and practice that depends on the monsoon/ type of the

crop/ length of the crop, and therefore requires the customization of the industrial policy. The cost, schedule, and performance play equally prominent role. One of the ways to meet the needs of the farmers is to empower them with the required enthusiasm and feasible-economy to meet the sufficiency in the wake of the recent developments. Such developments might bring the required balance in the cost of agricultural investment and the cost of agricultural products, in order to compete with the markets and ensure stability in the rural economy. Such initiatives might improve the productivity of the farmers and enable them with the activities like rising the cattle and therefore rationalize the investment, prevent the disturbing degradation of the soil, prevent the degradation of the underground water resources, prevent the degradation of public health, etc. (bye-products of the cattle ; cow-urine has got the characteristics to rejuvenate the soil and considerably improves healthy farming and therefore the public health; meeting the sufficiency of agricultural production with such measures alone is yet a question). Preparing the industry to withstand the international competition to meet the cost efficiency, the size of the market, and the suitability of human resources is part of the solution. Therefore, sufficient and feasible efforts are required to retain the competency in the agriculture sector, in the wake of the trend, even though the excellence over the larger time-frame has been well established. Suitable measures are essential to protect the interests of the good amount of population, with sufficient precaution. It is good to monitor the developments to balance the cost of transportation and all-round living expenses stated in this point, because the citizens used to healthily depend upon the public transportation like the healthy practice that prevails in the developed country, Singapore. Furthermore, the measures to balance the imports and exports might derive the intended result. It is good to encourage the businesses that focus on competently exporting in result and meeting the sufficiency requirements of the domestic needs. It is much better if the industry can be honed to meet the sufficiency. **The improvement in the supply of suitable human resources might further help ; until such a practice reaches the sufficiency, is it good if the faculty members above the designation of Assistant Professor, teach only the programme specific prerequisite courses of UG and suitably commensurate non-elective UG courses, in terms of quality, quantity, and communication up to the ‘Vision and Mission’?** Some of the practices that prevail in few places do not apply to the nation, and it is essential to know such parity, and act efficiently according to the global situation and development. The troublesome situation exists primarily because of the need to accommodate the compensatory initiatives in a traditional and conservative economy. Measures that improve the rural economy through spending implements might result in rational standard of living, rational distribution of the population, ecological balance, and sufficiency. *Integrity and sustainability* are important for a strong nation. Can the all-round mightiness be sacrificed, by succumbing to unsafe food habits? If the simple question is ‘how to address the problem?’ it is good to note that the world needs commensurate rationale to take sufficient inputs from the past thousands of years due to the practices at times. Citing few mighty people of the history is not sufficient and ‘planning implementation’ for sustainable development is important. A healthy and evolutionary change that takes into account, all the sustainable development of the ancient past, the present challenges, and serves to be person-independent to the possible

extent might improve the domestic situation. It is imperative to understand that the human resources contribute to the national economy irrespective of the earning potential, apart from the direct and indirect taxes paid by the individual, sustainable revenue and activity due to the spending potential of the individual, taxes paid by the employer, revenue-profits-local spending-development potential of the employer, the domestic contribution to the competitive cost of living-infrastructure-communication facilities of the nation, and contribution to the national productivity and novelty, such human resources strengthen the sovereignty of the nation and assure moral support to the military, work force, administrators, and leaders. The initiative of 'MAKE IN INDIA' is one of the attempts for the improvement and emphasizes the need to improve the 'know-how'. The trend indicates the need to withstand hectic competition. To observe that when the players of a nation try to purchase a high technology company of certain aborigine, the top administrators and leaders of such an aborigine-nation would interfere and stop the sale. However such a practice did not occur in the case of the sale of 'FLIPKART'. Such a move might have considerably improved the encouraging potential of the domestic industry. It is imperative to understand that the developed nations are with the effective perception that the healthy-retention (not by measures in the name of bail-out ; improving the competency through professional excellence is essential) of a domestic company contributes heavily to the national economy whereas the money obtained by the sale of such a company turns-out highly-volatile. Generation of employment and revenue is not the sole criterion whereas the employment in the environmentally good industry, industry with the excellent resultant export potential, industry that competently meets the sufficiency requirements of the nation that do not pose conflict of interest with the established industry is important. Development of the indigenous world class colleges that have the ability to refine the next generation of trustworthy administrators, leaders, entrepreneurs, and technopreneurs, and to imbibe them the ability to stick to the essentials and withstand the pressures might be one of the remedial steps to improve the domestic situation. *One of the possibilities is to sufficiently improve the institutions to the deserved extent.* Mechanism to withstand from being targeted is essential

In the **ancient** society, by the free will, the citizens classified the population into castes depending on the family trades and businesses that they skillfully ran at ease, and felt mutual respect for the dignity of labor. The **modern education system** erased such barriers in molding the human resources. It is necessary to revive the **ancient wisdom** beyond the caste-system for professional matters, adapt the tolerance, ensure the strength of the nation, and perceive that it is the important requirement

It is not possible for every government to bring strict laws in all the required aspects due to the informal/ logical restraint of maximum reforms within the tenure, considering the conventional mindset of the citizens, the natural public restraint to a social change, and the obligations that might come in the way even in the case of convincing and rationally good law or act at the time. The people seeking citizenship in a country need to have faith and loyalty towards the concerned government. Such people and clean citizens will never have adversity. However it is always possible to get mislead and therefore caution is essential. It is a constant

phenomenon to meticulously scrutinize and tolerate the improvements at the time, by the government as well as NGOs for the sustenance of the society and the **young nation that was reborn amidst of several opposing forces only few decades ago**. It is necessary to understand that an administration can do something good, only if the power can be retained.

Policy decisions that safeguard the interests of the industry with proper precaution are essential. Few surveillance mechanisms of limiting the unfair activities may be carefully reviewed by the authority, in order to protect the soundness of the industry. Such surveillance might help in the optimal use of the domestic resources including investments, prevents the passion of excluding the business/ professional/ industrial interests, and eradicates manipulation. Business innovation within the limits of the economy may be a constant and practicable phenomenon (eg. hundreds of years of existence). Strengthening the domestic education system with trustworthy/ financial/ behavioral discipline, ethical/ traditional/ contemporary values, the attitude of wasting the resourceful time being in the relevant position, a mechanism to withstand from being targeted, and demonstrating the benefits of using cost effective products is one of the mechanisms. Improving the cost effectiveness and competitiveness with profitability, sustainable innovation, and sufficient contribution to GDP by the sufficient direct/ indirect employment of human resources is important. Contributing to the improvements in the competency of the domestic businesses might help to convince the people with the relevant products.

At any point of time during the high school education, no student may be compelled to study more than one curricular subject (course) on languages irrespective of the medium of instruction in order to establish an effective and regionally/ nationally/ internationally competent curriculum. However, there may be a choice of opting for one spoken domestic-language course as a non-curricular (like co-curricular or extra-curricular) course. The English translation of technical words/ terms of high school sciences and mathematics subjects (courses) may be introduced in the text books, irrespective of the medium of Instruction.

It is imperative to effectively and peacefully deal with the neighboring nations and the reliable competency of the leaders and administrators come in to utmost importance. Health, fitness, less dependence on the medicines, and character are some of the possible features that influence the efficiency. One year of military training for at least the aspiring graduate men is essential to develop a competent defensive restraint for the nation and also to develop the physique and health. The training and the associated activities may sufficiently enhance the patriotism and passion for the nation. eg. there is a similar compulsion in South Korea and the country has been doing well in terms of building the knowledge and developed society

An important thing to note, the nation is importing low technology and better precision products at a *lower cost* than that of the domestic products, from the neighboring nation that is comparatively better in terms of economy and military. If comparatively a developed nation can produce at a lower price, why are we not succeeding? Such a phenomenon is hampering the national GDP and weakening the currency (trying alternatives just for the purpose of

currency might result in the expense of time, effort, and money? Short-cuts versus rational productivity? The comforts of the modern life cannot mislead?). This is the direct consequence of not developing the Industrial Training Institutions (ITIs) and other institutions that provide effective training in the manufacturing sectors at par with the modern norms and the growing population. The demand, domestic pay potential, and incentives for such disciplines may be effectively intimidated.

### 3.2 CCA/ ECA Organized: *Without financial burden on the employment institution*

Reading the contents of the ‘Summary’ (especially the first few pages) will answer the possible questions

**Result:** (1) Started the **continuous** practice of instructing ‘engineering drawing and graphics courses, and the relevant courses’ for all branches of study from 2011 – date, **using CAD**; to the knowledge, it is the first time in the nation, and later, it became the common practice in the nation (2) Ways to improve employability through curricular improvements (3) Faculty, started following nationally and professionally good textbooks (4) Faculty and enrolled UG started to get the complement-help from several NPTEL courses that were added from 2014

Purpose of Engineering Drawing and Graphics using CAD : (1) **Basic career essential and pre-requisite** for understanding CAD software, as appropriate to core engineering specializations of UG and (2) Spending time with CAD software in the first year imbibes the *practical knowledge* of various software concepts that are relevant for other engineering specializations of UG

Reminder: The effective method of encouragement to sufficiently follow ‘**nationally and professionally**’ good text book still needs further implementation

- Quality Placement Essentials for Engineers; AY 2020-continues; coordinator and instructor, MED
- Solid Mechanics and Practical Problems in Mechanics of Solids; AY 2014-2015; coordinator and instructor; MED
- Analysis of Engineering Problems; AY 2014-continues; coordinator and instructor; MED
- Utilities in Creo; December 18 2013; coordinator and instructor; venue: AED
- Construction used in Various Parts of the World and Relevance to the Topics of Engineering Analysis; AY 2013-Continues; coordinator and instructor, MED
- CAD Review; 12 hrs; August 07-23 2013; coordinator and instructor, MED
- Assistance to the sale of prescribed textbooks on the campus, as per the versions, namely, R11 and R12 of the autonomous curriculum, Mechanical and Automobile Engineering (MAE); August 01-09 2013
- MOU, brochure (drafts) and a feasibility report on the Post Graduate (PG) program planned; AY 2008-2010
- PG program brochures, for AY 2009-2010, 2010-2011 and 2011-2012

- Introduction to 3D Finite Element Modeling using MDT; 08 hrs; April 22-25 2004; coordinator and instructor; MPED
- CAD/ CAM/ CAE; 04 hrs; February 25 2004; coordinator; Mechanical and Production Engineering Department (MPED)
- On presenting papers at the national conventions held by reputed societies
- CAD; 08 hrs; October 29 2002; coordinator and one of the instructors (02 hours as the instructor), MPED
- Curriculum, co-curriculum, and extra-curriculum, as a means of achieving the educational objectives
- Choosing the best textbook in order to achieve the course objectives and as a means of gaining comprehensive education
- Reading of **nationally and professionally** good textbooks, in order to meet technical expectations of the enrolled UG and the education program
- Effective improvements in the curricula, ensuring assimilating of skills, and improving abilities
- Significance of preparation to receive a lecture for effective learning, and enhancement of skills and abilities
- Allocation of office hours to enhance the skills and abilities of the needy and enrolled
- Influence of breathing, relaxation, and physical exercises on ethical learning, retaining, and practice
- Effective performance methods for the benefit of the people, organizations, economy, nation, and the world
- Learning methods in order to ensure course and program objectives and to transform into a successful person
- Effective means for withstanding the distractive elements and remaining as an effective contributor in the profession
- Submission of NBA application of the department in AY 2010-2011, and the necessary preparation
- Gnat Chart for versatile applications, and effectively scheduling the tasks and resources for an endeavor
- Group technology and the effects versus involuntary/ ambiguous/ unknown/ discrete destruction
- Means of creating an interest and the necessary action required to achieve it, in the national and global scenario
- Interests, integrity, stance, and unity in no uniformity; benefits of refinement over interests and the applicable near term goals; tolerance versus personal gain

- Campus atmosphere and everlasting practices for the stability; need to face the day today challenges
- Choice as per the strengths, interests, conservativeness, aggressiveness, and need in the wake of global changes; ability to withstand
- Comprehensive reports on industrial visits of academia in order to ensure and comprehend the purpose of engineering
- Feasible methods and preparation for leading to academic excellence, and reviving the lives
- Class work and reviews, and participation in the effective events, industrial visits and development; requirements for allocation
- Several sponsored research projects and a number of industry projects, over a large realm and methodology
- Several state of the art facilities and intellectual resources, up to the maximum extent that the human resources and the institution can assimilate, without financial burden, intended to revive education and ethical practices
- Global ‘phenomena and transformation’ and its relevance to the need for education and development
- Importance of the students, improving the abilities of absorbing certain basics/ fundamentals pertaining to the chosen field of academic specialization that fosters the continuous learning as long as alive and imbibe the abilities to quickly verify and utilize the available multipurpose intelligence
- Achieving excellence in skills and abilities in the medium of instruction apart from gaining the depth of knowledge and continuously improving the technical and general abilities for ensuring effectiveness in the job
- Skills, abilities, and other necessities needed in order to enable and support an ethical, stable, healthy, and happy world

### **3.3 CCA/ ECA Attended:** Events

### **3.4 Counseling and Mentoring Activity:** Mentioned

**3.5 Committees Involved in:** Member, Board of Studies, Regulations R12 and R13, UG and PG (2012-2013), Chairman, Board of Studies, Regulation R11, UG and PG (2011-2012), Head of the Department (HoD), MAE; 12.2010 – 08.2011, Member, disciplinary committee (2010), Member, academic projects committee (2010), Member, project review committee (2009-2011; 2018-), Member, academic council (2009), Member, research committee (2009-2011; 2018-), Member, curriculum preparation committee (2009), Editor, for two editions of knowledge asset (05/2009-03/2011)

#### 4. Conference / Workshop / Seminar / Guest Lectures:

Reading the contents of the ‘Summary’ (especially the first few pages) will answer the possible questions

##### 4.1 Conducted: *Without financial burden on the employment institution*

**Result:** Started the **continuous** practice of instructing ‘engineering drawing, engineering graphics, and the relevant courses’ for all branches of study from 2011 – date, **using CAD**; to the knowledge, it is the first time in the nation and later, it became the common practice in the nation

Purpose: (1) *Basic career essential* and **pre-requisite** for understanding CAD software – as appropriate to core engineering specializations of UG and (2) Spending time with CAD software in the first year imbibes the *practical knowledge* of various software concepts that are relevant for other engineering specializations of UG

- Machine Drawing using AutoCAD; 24 hrs; September 04-October 31 2014; coordinator and instructor; MED
- Machine Drawing using AutoCAD; 24 hrs; August 03-18 2012; coordinator and instructor; MAE
- CAD/ CAE; 96 hrs; June 20-July 02 2011; coordinator and one of the instructors (66 hrs as the instructor); MED
- Process Plan for Machining Jobs; 24 hrs; June 27-July 02 2011; MAE
- Computational Fluid Dynamics; 24 hrs; June 09-11 2011; MAE
- Finite Element Analysis using ANSYS; 24 hrs; June 02-04 2011; coordinator and one of the instructors (24 hours as an instructor); MAE
- Refresher Course in Mechanical Engineering; 54 hrs; May 02-June 01 2011; coordinator and one of the instructors (11 hrs as the instructor); MED
- Use of AutoCAD for Teaching Engineering Courses (04 modules); 58 hrs; April 11-August 25 2011; coordinator and one of the instructors (58 hrs as an instructor); MAE
- Refresher Course in Mechanical Engineering; 39 hrs; January 20-March 31 2011; coordinator and one of the instructors (12 hrs as the instructor); MED
- Machine Drawing using AutoCAD; 30 hrs; January 10-March 21 2011; coordinator and instructor; MAE
- CAD/ CAE 48 hrs; November 30-December 05 2010; coordinator and instructor; MAE
- Computer Aided Drafting using AutoCAD; 24 hrs; September 20-October 15 2010; coordinator and instructor; MAE
- CAD/ CAE, 40 hrs; November 23-27 2009; coordinator and instructor; MED
- Computer Aided 3D Modeling and Finite Element Analysis using MDT 6.0; 48 hrs; May 30-June 04 2005; coordinator and instructor; MPED
- Computer Aided Drafting using AutoCAD; 40 hrs; October 27-November 01 2003;

coordinator and instructor; MPED

**4.2 Attended:** *Without financial burden on the employment institution*

- ECMFD; MN NIT-A, July 7-19 2008
- QSI:DA, TISCO (Now, TATA STEEL)/SNTI - Jamshdpur, September 01-04 1998
- Technical talks

**5. Academic Contribution and Research & Consultancy:**

Reading the contents of the 'Summary' (especially the first few pages) will answer the possible questions

**5.1 Invited Lectures:** 1 (at a conference)

**5.2 Articles/ Chapters Published in Books:**

**5.3 Books Published as Single Author or as Editor:** 5 technical reports (additionally, 6 books in progress at various stages of development); manuscripts-available

Eg. of a completed book: Development of a new technique to determine the critical strain energy release rate of bone and other biological materials, 1994

**5.4 Projects Guided:**

UG final projects (including Part Time Program): 22; UG pre-project training: 23; PG theses: 4; without financial involvement from the employment institution

Typical:

- Study of Bioreactors
- Constructional Aspects of Machinery
- Feasibility of Generating Power using Tidal Energy
- Material Handling Aspects of Mini Earth Moving Equipment (MEME)
- Machine Handling Aspects of MEME
- Design of Machine Members for MEME
- Study of Special Purpose Manufacturing
- Micro Power Generation from the Sources of Energy for Domestic and Agricultural Purposes
- Design of a Tabletop Coreless Induction Furnace
- Design of a Hydraulic Press
- Automatic Generation of Part Programs for NC machines
- Automatic Feeding of Chain Parts in to Forks and Automatic Sensing of Pin Length
- Automatic Clamping Mechanism for a Thread Cutting Machine
- Design of Fixture and Gauge for Parts Involving Complexity
- Mechanical Design of UTMs

- Design of Control Systems for a UTM
- Design of a Manufacturing Simulator
- Design and Analysis of a Leaf Spring
- CAD/ CAE
- Fracture Mechanics Methods for Bone
- Normalized crack length requirements for compact sandwich specimen
- Characterization of Interface of Bone and Biomaterials
- Characterization of Bio-Materials using Fracture Mechanics approach
- Characterization of Bone using a Fracture Mechanics Approach
- FEA of a Connecting Rod
- Design of a Physical Simulator for Manufacturing
- Effects of Errors in Sensors, Instruments and Specimen Fabrication Machines on Fracture Mechanics Characterization of Materials
- Development of Fiber Glass System
- FEA of a Powered Roof Support
- Failure Analysis of Engine Cylinders

### 5.5 Research Interests:

Mechanical Engineering; MultiDisciplinary Research

### 5.6 Ph.D. Students:

a) Enrolled: b) Submitted: c) Awarded:

*No Ph.D. program offered at the institution*

### 5.7 Papers Presented in International/ National Journals:

In the wake of the efforts to use the public resources to develop the false image:-

manipulation versus the improvement of trustworthy skills with no unethical traits ; effective utilization of time to hone the professional quality of the enrolled UG ; **expending time** to publish the contents that the human resources of the institution are **not supposed to publish** ; expending **in the name of publishing** and following unethical means ; a simple question of ‘who are the **targeted audience** for a publication?’ ; referring to resources by illegal-access versus publishing the same content ‘in effect’ ; publishing the redundant contents that **already exist** in different forms ; publishing the contents that in effect degrade the technical thinking capabilities ; expending resources to use the connections to improve the count for false image ; trying/appointing on a designation that can easily be misused to improve the count ; commensurate work ; awareness on creating commensurate efforts and time ; ‘Summary’ for further details

Author/s	Title	Name of the Journal	Volume	Page	Year
S.P.Paruchuru, V.U.Kumar, A. Jain and X.Dong	Comparative Estimates of Uncertainty in Measurements of Fracture Toughness	Journal of Testing and Evaluation: A Journal of ASTM International	45 (4)	1139	2017
S.P.Paruchuru, A.Jain and X.Dong	Loading Rate Requirements of a Compact Sandwich Test for Fracture Toughness Testing of Bone and Biomaterials	Trends in BioMaterials & Artificial Organs :: An International Journal	30 (2)	95	2016
S.P.Paruchuru and C.M.Agrawal	Miniature Specimens for Cortical-Bone Tests	Trends in BioMaterials & Artificial Organs :: An International Journal	26 (4)	202	2012
S.P.Paruchuru, X.Wang, and X.Dong	Finite Element Simulation of Nanoindentation Tests for Cortical Bone Using a Damage Plastic Model	Strength, Fracture and Complexity	6(3)	83	2010
S.P.Paruchuru and A.Jain	Normalized Specimen Thickness Requirements of a Compact Sandwich Test for Measuring Fracture Toughness of Bone	Journal of Applied BioMaterials & Functional Materials/ Journal of Applied BioMaterials & BioMechanics	7(1)	43	2009
S.P.Paruchuru and X.Wang	Finite Element Simulation of a Nano-Scratch Test of Bone	Journal of Mechanics in Medicine and Biology	9(3)	427	2009

S.P.Paruchuru, X.wang and C.M.Agrawal	Use of Compact Sandwich Specimen to Determine the Critical Strain Energy Release Rate of Bone	Bio-Medical Materials and Engineering	17(4)	249	2007
S.P.Paruchuru, A.Jain and X.Wang	Size Requirements of Compact Sandwich Specimen for Testing of Bone	Journal of Mechanics in Medicine and Biology	7(4)	419	2007
S.P.Paruchuru and A.Jain	Finite Element Modeling and Experimental Validation of Computational Procedures for a Fracture Mechanics Based Bone Test Method	Trends in BioMaterials & Artificial Organs :: An International Journal	21(1)	1	2007
S.P.Paruchuru	Recent Development in Specimens for Fracture Toughness Testing of Bone	Trends in BioMaterials & Artificial Organs :: An International Journal	18(1)	60	2004
S.P.Paruchuru, X.Wang and C.M.Agrawal	Validity of the Direct Relation Between the Fracture Mechanics Parameters, K and G, in the case of Bone	Journal of Mechanics in Medicine and Biology	4(3)	321	2004
S.P.Paruchuru, X.Wang and C.M.Agrawal	Finite Element Simulation of Elastic Compliance Technique for Formulating a Test Method to Determine the Fracture Toughness of Bone	Journal of Mechanics in Medicine and Biology	2 (3 and 4)	473	2002
S.P.Paruchuru	An Arrangement to Increase the Level of Liquids	Patent Office Journal	23	21500	2018
“	Instrumented Methods for Smart Operations	“	2	1267	2017
“	Instrumented Methods for Smart Operations	“	51	75821	2016
“	A Configuration for Nonlinear Trajectories.	Patent communicated			

“	Sensory-Methods and Equipment for Manufacturing	“			
“	Power Saving Methods and Arrangements	“			
S.P.Paruchutru et al.	An Arrangement to Enhance the Tissue Engineering and Other Lively Processes to Enhance life	“			
S.P.Paruchutru	Instrumented Methods For Material Tests	“			
S.P.Paruchuru	202341003337	“			
S.P.Paruchutru	201941029478	Patent Office	13	11	2019
S.P.Paruchutru	201641041533	“	13	11	2016
S.P.Paruchutru	3519/CHE/2015	“	40	22	2015
S.P.Paruchutru	2788/CHE/2015	“	35	16	2015
S.P.Paruchutru	5525/CHE/2013	“			2013
S.P.Paruchuru et al.	Estimation and Feasibility of Generating Power Using Tidal Energy	Pending			
S.P.Paruchuru	Forethoughts into Engineering Biological Tissue and Considerations of After-Transplantation	“			
“	Views on Improving the Global Health Through Health Sciences	“			
“	Standardization Aspects of Indentation and Scratch Methods for Biomaterials	“			
“	Design Aspects of Centrifugal Molds	“			

“	Bulk Manufacturing Process- Considerations Effecting Products	“
“	Design Aspects of a Metallurgical Simulator	“
“	Bulk Manufacturing Concerns of Machine-Components	“
“	Machining and Bio- Machining Considerations	“
“	Considerations for Bulk- Manufacturing Simulators	“
“	Analysis of Precise-Drives for Bio-Instrumentation	“
“	Unconventional Machining Methods for Bioengineering	“
“	Manufacturing and Maintenance Aspects of Processes used for Prostheses	“
“	Consumer-Credit-Rating- System for the Developing Countries	“
“	Finite Element Analysis of Installation Failures in Engine Cylinder Liners	“
“	Power Generation from the Sources of Energy at Far-Sites	“
“	Development of a New Technique to Determine the Energy Release Rate of Bone and other Biological Materials	“
“	Techniques for Characterization of Biological-Materials	“

“	MultiScale Mechanical Methods for Characterization of Materials	“
“	MutltiScale Biomechanics	“
“	Mechanical and Systems research	“
“	Standardization aspects of novel methods	“
“	Development of a New Technique to Measure the Fracture Toughness of Biological Materials	“
“	Effective Reforms in Technical Education	“
“	Materials Influencing the Sensation	“
“	Materials for Deep Water Construction	“
“	Simulator for Deformation of Metals	“
“	Interspecies Study	“
“	Review of Compact Sandwich Specimen	“
“	Custom Specimens for In-Vitro Fracture Toughness Testing of Hard-Tissue	“
“	Material Measures of In-Vivo Testing	“
“	Concerns of Measures for Product-Tests	“
“	Foresights in to Aging Research	“

“	Measures for Achieving Ecological Balance	“
“	Foresights into Minimum Disturbing Approach	“
“	Curriculum, Syllabus and Evaluation Modifications that Effect Quality in Technical Education	“
“	Development of a New Technique to Determine the Strain Energy Release rate of Biological Materials	“

**Significant publications and the result:**

S.P.Paruchuru, Consumer-Credit-Rating-System for Developing Countries, 2004 (and discussions with the corporate, CRISIL between 2001-2003 transformed into a national credit policy decision and Unique Identification (UID) programs during 2005-2009)

S.P.Paruchuru et.al., Finite Element Analysis of Failures in Engine Cylinder Liners, 2005 (transformed into BOYSCAST fellowship research, after fellowship research and doctoral research)

**5.8 Papers Presented in International/ National Conferences:**

Author/s	Title of the Paper	Names of the Conference/ Seminars	National/ International	Period
S.P.Paruchuru	Purpose of Academics	NCRAMET, VNRVJIET	National	January 09-10 2011
“	Engineering Research	VV, VNRVJIET	‘	March 02 2010
“	Mechanical Techniques for Characterization of Bone	NCSSC – SDM, VNRVJIET	‘	January 19-20 2009
S.P.Paruchuru, X. Wang, X.N. Dong and A. Jain	Mechanical Techniques for Measuring Properties of Cortical Bone	NCMM 2007, 17 <sup>th</sup> AM: SBAOI, and 1 <sup>st</sup> AM:STERMI of SBAOI, IIT-Chennai	‘	December 13-14 2007
S.P.Paruchuru	Multiscale Characterization of Bone	OS, MNNIT-Allahabad	‘	July 16 2007

“	Standardization Aspects of CSS for Fracture Toughness Testing of Bone	SAS, MNNIT-Allahabad	‘	January 03 2006
“	Syllabus, Curriculum, and Evaluation Concerns that Affect Quality in Technical Education	NCQTE, VRSEC-Vijayawada	‘	October 18 2002
S.P Paruchuru	Fore-Thoughts on Engineering the Biological-Tissue, continuous Evaluation and After-Transplantation (withdrawn)	IMECE-O of ASME	Intern ational	Novemb er 13-19 2020
S.P Paruchuru, S.K Koneti, D. Jammula and J.Nuthalapati	Estimation and Feasibility of Generating Power Using Tidal Energy (IMECE2020-22218)	‘	‘	‘
S.P Paruchuru, P.R Maturi and J. Nuthalapati.	Finite Element Analysis of Installation Failures in Engine Cylinder-Liners IMECE2020-22253)	‘	‘	‘
S.P Paruchuru	Cementitious Materials for Deep-Water Construction (withdrawn)	‘	‘	‘
S.P Paruchuru	Power Generation from the Sources of Energy at Far-Sites (withdrawn)	‘	‘	‘
S.P.Pauchuru and A. Kolluri	Minimum Destructive and Noninvasive Test Methods for Natural Materials (IMECE2019-10416)	IMECE-U of ASME	‘	Novemb er 8-14 2019
S.P.Pauchuru and A. Kolluri	Standardization Aspects of Fracture Testing of Bone and Bio-Materials (IMECE2019-10417)	‘	‘	‘
A.Kolluri, B.Srinivasa Prasad and S.P.Paruchuru	Evaluation of Thermal Effects in Turning Process: Numerical and Experimental Approach (IMECE2019-10423)	‘	‘	‘
S.P.Pauchuru and A. Kolluri	Standardization Aspects of Methods for Testing of Engineered Biological-Tissue (IMECE2019-12878)	‘	‘	‘
S.P.Paruchuru et al.	Estimation and Feasibility of Generating Power Using Tidal Energy (AJKFLUIDS2019-4665)	AJKFC-SF of ASME, JSME and KSME	‘	July 28 to Aug. 02 2019
S.P.Paruchuru	Power Generation from the Sources of Energy at Far-Sites (withdrawn)	“	‘	‘

S.P.Paruchuru	Cementitious Materials for Deep-Water Construction (withdrawn)	“	‘	‘
G.K.Pujari et al.	Hydrodynamic Behavior of External Air-Lift-Loops (AJKFLUIDS2019-4707)	“	‘	‘
S.P.Paruchuru	Finite Element Analysis of Installation Failures in Engine Cylinder-Liners (MSEC2019-2708)	MSEC-E of MED-ASME and NAMRI-SME	‘	June 10-14 2019
“	Evaluation Methods for Bone-BioMaterial Interfaces (MSEC2019-2709)	“	‘	‘
“	The Covertness of Biological Power (MSEC2019-2710)	“	‘	‘
“	Methods of Bio-Machining and Electro-Machining (MSEC2019-2711)	“	‘	‘
“	Machining and Bio-Machining Considerations (IMECE2018-88989)	IMECE-P of ASME	‘	November 09-15 2018
“	Considerations for Bulk-Manufacturing Simulators (IMECE2018-88996)	“	‘	‘
“	Analysis of Precise-Drives for Bio-Instrumentation (IMECE2018-88999)	“	‘	‘
“	Unconventional Machining Methods for Bioengineering (IMECE2018-89017)	“	‘	‘
“	Manufacturing and Continuous Evaluation of Tissue (IMECE2018-89078)	“	‘	‘
“	Manufacturing and Maintenance Aspects of Processes Used for Prostheses (IMECE2018-89019)	“	‘	‘
“	Standardization Aspects of Specimens for Fracture Toughness Testing of Bone and Biomaterials (IMECE2016-65356)	IMECE-A of ASME	‘	November 11-17 2016
“	Design Aspects of a Casting and Manufacturing Simulator (IMECE2016-65416)	“	‘	‘
“	Standardization Aspects of Indentation and Scratch Tests for Bone at the Multiple-Scales (IMECE2016-65358)	“	‘	‘
“	A study on the Feasibility of Generating Power Using Tidal Energy	“	‘	‘

	(IMECE2016-65494)			
“	Design Aspects of the Tissue (IMECE2016-65418)	“	‘	‘
“	Comparative Estimates of Uncertainty in Measures of Fracture Toughness	fmammd/ffmmmd of ASTM, USA	‘	November 14 2012
X.Dong, S.P.Paruchuru and X. Wang	Finite Element Simulation of Nanoindentation Tests for Cortical Bone using a Damaged Plastic Model	ASB: 31 <sup>st</sup> AM; USA	‘	August 22-25 2007
S.P.Paruchuru and X. Wang	3D Finite Element Simulation of a Novel Scratch Test for Assessing Bone Quality	BMES: 38 <sup>th</sup> AFM; USA	‘	October 11-14 06
X.Wang, S.P.Paruchuru, J. Mabrey and C.M.Agrawal	An Interspecies Study of Bone Fracture toughness	ORS: 42 <sup>nd</sup> AM of USA	‘	February 19-22 1996

**5.9 Sponsored Research Projects:** *National Funding Agencies; typical; obtained and executed; during 1993-2018 (may be read in conjunction with section 1)*

*Without financial burden on the employment institution; reading the contents of the ‘Summary’, especially the first few pages, will answer the possible questions*

Title	Agency	Period	Grant amount	Ongg/ Compl
<b>Reading the contents of the ‘Summary’, especially the first few pages, will answer the possible questions</b>				
Standardization Aspects of Compact Sandwich Specimen for Fracture Toughness Testing of Bone, Principal Investigator, SR/FT/L-83/03 Total number awardees throughout the nation: 200 (Two hundred only) Open competition: (i) the scientist designates in science, <b>technology, engineering</b> , mathematics and <b>medical</b> domain of the research establishments, though out the nation including DRDO and National Laboratories and (ii) the regular faculty members of government funded institutions of national importance including IITs and IISc. My consistent contribution to the employment institution is clear and proven in spite of the awareness	SERC (now SERB) DST, GoI  <b>Result:</b> sections 5.7, 5.8, 6, and 7	2003-2006	7,42,000.00	Completed

<p>Better Opportunities for Young Scientists in the Chosen Fields of Science and Technology (BOYSCAST), Principal Investigator, SR/BY/E-038/05</p> <p>Total number of awardees throughout the nation: 43 (Forty three only)</p> <p>Open competition: (i) the scientist designates in science, <b>technology, engineering</b>, mathematics and <b>medical</b> domain of the research establishments, though out the nation including DRDO and National Laboratories and (ii) the regular faculty members of government funded institutions of national importance including IITs and IISc. My consistent contribution to the employment institution is clear and proven in spite of the awareness</p>	<p>SERC (now SERB) DST, GoI Jointly funded by NIH Mentor: Dr. Wang</p> <p><b>Result:</b> sections 5.7, 5.8, 6, and 7</p>	<p>Selecte d:2005  2006- 2007</p>	<p>INR 13,46,490. 00</p>	<p>‘</p>
<p>BOYSCAST Fellowship Research, Principal Investigator</p> <p>SR/BY/E-038/05 (ACGR)</p> <p>Total number of awardees from all the relevant disciplines in the nation: 43 (Forty three only)</p> <p>Open competition: (i) the scientist designates in science, <b>technology, engineering</b>, mathematics and <b>medical</b> domain of the research establishments, though out the nation including DRDO and National Laboratories and (ii) the regular faculty members of government funded institutions of national importance including IITs and IISc. My consistent contribution to the employment institution is clear and proven in spite of the awareness</p>	<p>Technical sanction with no financial commitment: SERC (now SERB) DST, GoI</p> <p><b>Result:</b> sections 5.7, 5.8, 6, and 7</p>	<p>2007- 2008; 2009- 2016</p>	<p>INR13,46, 490.00</p>	<p>‘</p>
<p>Multiscale Mechanical Methods for Characterization of Bone and Biomaterials, Principal Investigator 8023/ RID/ RPS-74/Pvt (II policy)/2011-2012</p> <p>The grant is not applicable to the government funded nationally</p>	<p>AICTE, GoI</p> <p><b>Result:</b> sections 5.7, 5.8, 6, and 7</p>	<p>2012- 2016</p>	<p>INR 17,52,088. 46</p>	<p>‘</p>

important institutions like IITs, IISc, etc. or the research establishments like DRDO and National Laboratories. It is only applicable to the state funded academic institutions of the nation including Universities. However, the nature of funding that is clear from the sanction order (four pages) is in accordance with the quality of the national competitiveness explained for the aforesaid sponsored research projects/ fellowships. My consistent contribution to the employment institution is clear and proven in spite of the awareness				
Other external funding from the National Funding Authorities can be found in the next table				
Craniofacial Mechanics: FEA of Human Craniofacial Skeleton to Analyze the Influences of Buttress; Supervisor: Dr. Singh	UTHSCSA or UT-Health/ UT, NIH/ NSF	1994-1995	USD 3,000.00	‘
Fracture Mechanics of Bone Supervisors: Dr. Agrawal and Dr. Wang	CEBBI, UTHSCSA or UT-Health, NIH/ NSF	1993-1994	USD 11,000.00	‘
Interspecies Study of Bone Fracture Toughness; Supervisors: Dr. Agrawal and Dr. Wang	CEBBI, UTHSCSA or UT-Health, NIH/ NSF	1994-1995	USD 10,000.00	‘
Vehicle Dynamics: Stability of Heavy Articulated Vehicles; Supervisor: Dr. Nestor Sanchez  Foundation for the graduate research	UT	1993	USD 2,000.00	‘

**Other external funding (from the National Funding Agencies):-**

*reading the contents of the ‘Summary’, especially the first few pages, will answer the possible questions*

Upgradation of Thermal Engineering Laboratory; Chief Coordinator  8024/RIFD/MOD-370 (Pvt.)/policy-III/2011-2012	AICTE, GoI	2012-2013	INR 4,85,12 5.00	Completed (Executed by the prevailing HOD)
Travel Grant  F. No. 6-420/2018(TG)	UGC, GoI	09-15 November	INR 1,49,07	Completed

		2018	2.00	
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**5.10 Consultancy Projects:** *Typical list; 1995 – 2002; Commensurately professional revenue to the employment institution*

<b>Title</b>	<b>Agency</b>	<b>Per iod</b>	<b>Grant amount</b>	<b>Ongoing/ Completed</b>
Multipurpose Materials Processor	MCC	1y	NA; part of the job	Completed
Roof Support	FP	“	“	“
Versatile Rolling	MCC	“	“	“
Use of Simulators in Manufacturing	KI	“	“	“
Member Data System	SME	“	“	“
Resource Data System	AFB-R	“	“	“
Multipurpose Recycling Enabler	EII	“	“	“
Plant Layouts for Ambience	FP	“	“	“
Preventive Maintenance System	EII	“	“	“
Activity Based Costing	AI	“	“	“
Development of Manufacturing Systems	AI	“	“	“
Handling of Metallic Products	FP	“	“	“
Handling of Heavy Equipment	TS	“	“	“
Indexing of Engineering Drawings	EII	“	“	“
Indexing of BIS codes	TS	“	“	“
Development of Sluice Gates	TS	“	“	“
Development of Reinforced Concrete Mixer	MCC	“	“	“
Analysis of Engine Components	KI	“	“	“
Development of Container Systems	EII	“	“	“
Development of Containers	EII	“	“	“
Development of Bio Systems	UT	“	“	“

Development of Advanced Materials	FGS	“	“	“
Submitted CCRS Proposal	CRISIL	Not applicable; Prepared/ Submitted during my stay at VRSEC		
Submitted Bridge Course Proposal	NIIT			
Submitted Powered Roof Support Proposal	APHMEL			
Prepared Proposal for Submitting to RTC (Did not submit due to lack of time)				

## 6 Awards / Honors Received: *may refer to the summary for the possible answers*

- **BOYSCAST fellowship** – University of Texas, awarded by: Department of Science and Technology, GoI (details in 5.9)
- **Fast Track** – Awarded by: Department of Science and Technology, GoI (details in 5.9)
- Open Competition for **Fast Track** and **BOYSCAST** of **DST, GoI**: scientists of national research organizations including all the **DRDO** and **National Laboratories** as well as the faculty members from the institutions of national importance including **IITs/ IISc.** in the areas of science, **technology, engineering**, mathematics, and medicine (further details in 5.7, 5.8, **5.9**, and 5.10) My consistent contribution to the employment institution is clear and proven in spite of the awareness
- **Certificate of National Merit – 1987 (GoI)** (An option of the stipend could have liberally, financially, and sufficiently funded throughout the education, irrespective of the requirement for hostel admission)
- Not even a minute's time spent to attend as an observer, resource person, external faculty or any other role external to the employment institution at any point of time or in any form (Section 7 for further clarity on the **complete list** of employers at different time-frames throughout the career)
- Initiated several sponsored research projects of NFA (DST, AICTE & UGC – GoI, details in section 5.9)
- Assistance to the enrolled UG in taking up trustworthy research fellowships and scholarships from National Funding Agencies; suggestions to improve the resume accordingly
- Guidance for the first Ph.D. in Natural Fiber Composite Materials at VRSEC, to the senior most faculty member and Professor of Mechanical and Production Engineering Department of the same Institution, 2000 – 2003; the work became a focal point for Ph.D.s
- Pursued and completed the undergraduate and postgraduate education in regular programmes of regular time at highly competent institutions with consistent learning
- Dual qualifications during the undergraduate education, in parallel, during AY 1988-1992
- High quality Post-doctoral research that helped the undergraduate programmes from 2009

- **Visiting of several international universities** around the globe, from 1992 – till date
- Award of nationally and professionally commensurate academic and industrial research, from 1992 – till date
- Editor- knowledge asset (of VNRVJIET) during AY 2009 - 2011
- Editor - R11 UG and PG regulation (curriculum)
- Preparation of autonomous curriculum for the first batch at VNRVJIET
- Able enrolled/ alma mater/ pedagogy from 1976 – till date
- Relevant and commensurate high quality positions at MNCs and research positions in academics from FY 1993
- **Principal Investigator – NFA (2003 till date)**
- Indian Society for Technical Education (ISTE)-Life Member
- Society for Biomaterials and Artificial Organs (SBAOI)-Life Member
- ASTM-Member & Reviewer of the Standards
- ASME-Member & Reviewer of the Standards
- SME (Member during 2015-2016)
- BMES (Member during 2006-2007)
- Ambassador of Bentham Science Publishers
- Chairman-Board of Studies for ME and AME-R11 (UG and PG Regulation 2011)
- Member-Board of Studies-R12, R13
- Effective mentoring to the participating members of faculty, with the target of resulting in performance, at par with the international norms
- HoD – Mechanical and Automobile Engineering for the first autonomous batch at VNRVJIET and a national conference
- First international journal publication in ‘technology and engineering’, as the primary and corresponding author, at a self-finance institution in the undivided state of AP and Telangana, in a JCR journal (not a conference proceedings journal or volume or issue or similar) – at the time when not a self-finance autonomous institution existed at the mentioned location and technology and engineering ; this is the first journal paper published in fracture mechanics, as the primary and corresponding author, at a self-finance institution in the nation ; first in the nation to publish 12 international (includes the most reputed journal from ASTM) journal papers as the primary and corresponding author in specialist-audience journals, from a self-finance institution (5.7 and 5.8)
- First Sponsored Research Project in ‘technology and engineering’, as the principal investigator/ fellow, at a self-finance institution in the undivided state of AP and Telangana from the NFA, DST (GoI) – at the time when not a ‘self-finance autonomous institution’ existed at the mentioned geography and technology and engineering ; the said SRP is the first in fracture mechanics, from a self-finance institution, in the nation; first

**BOYSCAST fellowship (DST, GoI), at a self-finance institution in the nation;** Open competition with (i) the scientist designates in science, **technology, engineering,** mathematics and **medical** domain of the research establishments, though out the nation including DRDO and National Laboratories and (ii) the regular faculty members of government funded institutions of national importance including IITs and IISc. My contribution to the employment organization is clear and well proven

- Initiation of the practice to organize the full time short term courses/ faculty development programmes (FDPs) of a minimum of 40 hours each, that does not seek any kind of financial support from the funding agencies or the employer, in UGC/ MHRD/ AICTE approved colleges of the nation – organization of fifteen short term training programs of 24-96 hour duration during 2003-2012, eleven other technical training programs, and several other professional training programs as the coordinator and instructor, from 2002, those conform to the aforesaid norm – effective utilization of the same in implementing the significant curricular-improvements – details in sections 2.2, 3.2, and 4.1
- Development and implementation of all time and high quality syllabus and curriculum of the nation for the undergraduate mechanical and automobile engineering programmes of 2011-2015 as HoD – ME and AME during 12.2010 to 08.2011 and Chairman of the department board of studies during 01.04.2011 to 31.05.2012 ; proved at the right time and have been proving the essence as an academician in technology and engineering primarily to facilitate imparting the deserving-essence through UG training; continuation of the quality, quantity, and communication ; extension to various other programmes (section 2.2)
- Promoted and has been promoting the enrolled UG as high quality authors

Significant: Respect to the initiators of employment rather than smartly ignoring after attaining the pseudo-qualification for want of favors ; Sufficient acknowledgement versus evasive attitude

## 7. Appointments:

*Typical high impact positions held:*

March 1991 - August 1992 (Part Time): Project Trainee, NIIT – Regional Centre, Hyderabad, India

January 1992 - May 1992 (Full time): Project Trainee, JNTU - Kukatpally/ Bharat Dynamics Limited (BDL) – India

October 1992 – December 1992: Assistance for Dynamics, Mechanical Engineering, UT

January 1993 - September 1995: Research appointments at UT, CNC laboratory, Vehicle Dynamics laboratory, Orthopaedic Biomaterials laboratory, Craniofacial Mechanics laboratory – UT/ UTHSCSA

October 1995 – May 1998: Contract assignments, Project Engineer at AI, EIL, CCI, SME, AFB-R, etc.

June 1998 - July 2000: Asst. Manager, Design & Development group, TATA GROWTH SHOP, TATA STEEL – India (Reference: Practice in 1998:- The starting position of

Officer Cadre is ‘Officer’; The next to last positions are ‘Senior Officer’, ‘Assistant Manager’, ‘Associate Manager’, and ‘Manager’ in the increasing order)

August 01 2000 – February 28 2006: Lecturer, Senior Lecturer, and Assistant Professor at Velagapudi Ramakrishna Siddhartha Engineering College (VRSEC) – India

June 20 2003 to February 28 2006: Principal Investigator, Sponsored Research Project (DST, GoI), VRSEC – India

March 01 2006: Principal Investigator, Sponsored Research Project, Department of Science and Technology, GoI

March 01 2006: BOYSCAST Fellow, Department of Science and Technology, GoI

March 02 2006 - December 31 2008: Professor, Pragati Engineering College (PEC) – India and BOYSCAST Fellow of DST, India (details in section 5.9)

April 25 2006 to April 28 2007: BOYSCAST Fellow of DST and Visiting Research Professor (on Lien from PEC; further details in 5.9)

01 January 2009: BOYSCAST Fellow of Department of Science and Technology, GoI

January 02 2009 – till the present date: Professor, Vallurupalli Nageswara Rao Vignana Jyothi Institute of Engineering and Technology (VNRVJIET)

January 02 2009 to March 31 2016: BOYSCAST Fellow of DST, VNRVJIET (details in section 5.9)

July 2009 – February 2016: Principal Investigator, Sponsored Research Project (NFA), VNRVJIET; Financial Sanction: 2 years from 07.2012 (31.03.2015); Technical Sanction: 3 years ; Date of the Initial submission: 31.07.2009; Date of the Next Submission: 02.2012 (further details in section 5.9)

March 2009 - May 2009: Member, Academic Council, VNRVJIET

March 2009 - March 31 2011: Member, Curriculum Preparation Committee, VNRVJIET

May 2009 – March 2011: Editor, Knowledge Asset, VNRVJIET

July 2009 - September 2011: Member, Research Committee, VNRVJIET

November 27 2010 – September 05 2011: Head of the Department, Mechanical and Automobile Engineering, VNRVJIET

December 2010 - August 2011: Member, Disciplinary Committee, VNRVJIET

April 2011 – May 2012: Chairman, Board of Studies for R11, Mechanical and Automobile Engineering Departments, VNRVJIET

June 2012 to May 2013: Member, Board of Studies for R12 and R13 of Mechanical Engineering, VNRVJIET

## **8 Motto:**

Work is Worship and Efficiency is Divine

Vision, Work, and Efficiency Secure Life

God and Nature Gave Everything to Know the Unknown