

## ACADEMIC PROFILE OF Dr. A.BALAKRISHNA

### PERSONAL DETAILS

Name : ADAVI BALA  
**KRISHNA**  
Date of Birth : 25-05-1960  
Marital Status : Married  
Nationality : Indian  
Address for correspondence : Professor,  
Mechanical Engineering  
Department,  
S.R.K.R. Engineering College,  
Bhimavaram-534204  
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### EDUCATION

- ✓ **Ph.D.** in Mechanical Engineering field in CAD\CAM specialization from **Andhra University**
- ✓ **M.Tech** [Machine Design] from **JNT University, Hyderabad** in the Year 1990.
- ✓ **B.E** [Mechanical Engineering] from **Andhra University** in the year 1984.
- ✓ **PGDCS** [Computer Science] from **Central University, Hyderabad** in the year 2000.

### EXPERIENCE SUMMARY: TOTAL EXPERIENCE: 33 YEARS, 1 MONTHS

Designation	From	To	Length of Service	Name and Address of Institution	University ratified/ Adhoc.
Project Assistant	Nov' 86	Jan' 89	2 Years 1month	NIT, Warangal	Adhoc.
Lecturer	Sept' 90	Aug' 96	5 years 11months	S.R.K.R. Engg. College, Bhimavaram-534204	University ratified
Senior lecturer	Aug' 96	March 2001	4 years 8 months	S.R.K.R. Engg. College,, Bhimavaram-534204	University ratified
Senior lecturer (selection grade)	April 2001	Aug' 2006	5 years, 5months	S S.R.K.R. Engg. College, Bhimavaram-534204	University ratified
Associate professor	Sept' 2006	Aug' 2009	2 Years 11months	S.R.K.R. Engg. College, Bhimavaram-534204	University ratified
Professor	Aug' 2009	Till date	12 years	S.R.K.R. Engg. College, Bhimavaram-534204	University ratified

### HORNS, AWARDS & MEDALS

- ✓ I had received **Best Ph.D. thesis** award for the year 2008 & 2009 from the **Andhra University, Visakhapatnam**.
- ✓ My biographical information has appeared in **Who's Who in the World, MARQUIS WHO'S WHO**, (25<sup>th</sup> Silver Anniversary Edition 2007).
- ✓ My name is cited as listed of the '**Leading Engineers of the World 2008**' by International Biographical Centre Cambridge, England.

## RESEARCH EXPERIENCE

- ✓ Principal investigator to the Research Project on “Implementation of Web based Collaborative Product Development using STEP/XML” (PCR submitted), Total cost of project **Rs.13.06 lacs** Sponsored by DST, Government of India, New Delhi.
- ✓ Principal investigator to the Research Project on “Development of XML-ontology tool for STEP geometric DATA”, Total cost of project **Rs.12.00 lacs** Sponsored by AICTE, Government of India, New Delhi.
- ✓ Principal investigator to the Research Project(MODROBS) on “Modernization of Metrology laboratory”, Total cost of project **Rs.10.50 lacs** Sponsored by AICTE, Government of India, New Delhi.
- ✓ Principal investigator to the Research Project “Development of XML-ontology tool for STEP- NC DATA”, Total cost of project **Rs.5.35 lacs** Sponsored by UGC, Government of India, New Delhi.

## FIELD OF SPECIALIZATION

- ✓ **PhD title:** Implementation of Web Based Concurrent Engineering in product development
- ✓ Machine Design,
- ✓ Product Design
- ✓ CAD/CAM, Concurrent Engineering
- ✓ Collaborative Product Development

## RESEARCH GUIDANCE

- ✓ **One scholar** received
- ✓ **One Scholar** are submitted (received reports)
- ✓ Presently **3 Ph.D. Scholars** in Mechanical Engineering are pursuing research
- ✓ Awarded about **10 M.E** projects.
- ✓ Guided more than **35 B.E** projects

## SUBJECTS TAUGHT

### At UG Level

- ✓ Engineering Graphics
- ✓ Computer Aided Design (CAD)
- ✓ Machine Design
- ✓ Mechanics of Solids
- ✓ Machine Drawing
- ✓ Fluid Mechanics

### At PG Level

- ✓ Interactive Computer Aided Design
- ✓ Advanced Design
- ✓ Geometric Modelling

## EXPERIENCE IN POLICY MAKING

- Coordinator Faculty Development Program (FDP) on “Strategic Methods and Tools for Product Development” sponsored by AICTE, conducted on February 2021.
- Coordinator, Workshop on “Collaborative Product Development (CPD) and Nano Technology sponsored under **D.S.T. Project** – CPD, was conducted for faculty and industry people on 23<sup>rd</sup> & 24<sup>th</sup>, July 2010.
- ✓ Convener National Conference on Emerging Technologies in Mechanical Engineering for Sustainable Development, sponsored by AICTE, was conducted for engineering faculty on December, 2006.

- ✓ Coordinator, Short term training program on “Concurrent Engineering – A modern approach to product development” sponsored by **ISTE**, was conducted for engineering faculty on December 2004.
- Arrange an invited lecture on “Advanced manufacturing” by Dr. S. Sarat, professor, Aucland University, Newzeland.
- Arrange an invited lecture on "Introduction to Micro Electro Mechanical Systems (MEMS)" by Dr. P. N. Rao, Professor in University of Northern Iowa, Cedar Falls, USA.
- I am the member in question paper setting committee for the J.B. Institute of Engineering and Technology (Autonomous) Yenkapally (V), Moinabad (M), Rr Dist- 500075
- I am the member in question paper setting committee for the G. Narayanamma Institute of Technology & Science Autonomous under JNTUH(*for Women*) Shaikpet, Hyderabad- 500 008

**PUBLICATIONS: 13 INT. J. + 2 NATIONAL J. + 21 INT. C. + 4 NATIONAL C. = 40**

- ✓ **A.Bala Krishna**, R.S. Babu, Dr.D.N. Rao, Dr.D.R. Raju and Mr. S. Kolli “Integration of CAD/CAM/CAE in Product Development System Using STEP/XML” published in International Journal on Concurrent Engineering: Research and Application, Vol.14(2), 2006, page No.121 to 128. Impact factor: 043, H index:33
- ✓ **Dr. A. Bala Krishna**, Dr.D.Nageswara Rao, R.Rakesh "Characterization and modeling of process parameters on tensile strength of short and randomly oriented Borassus Flabellifer (Asian Palmyra) fiber reinforced composite" in Composites Part-B-Engineering, Elsevier, 55, , PP 479-485, 2013, ISSN/ISBN NO: 1359-8368, Impact factor: 1.89, H index:67
- ✓ **Dr. A. Bala Krishna**, Dr.D.Nageswara Rao, Dr.T.Madhu, Dr. V.Durga Prasad Rao, "Material Selection Processes and Exchange of material information in Concurrent Engineering Environment using Neural Network and Web Technology" in International Journal on Interactive Design and Manufacturing, Springer, 2013 PP 235-242, 2013, ISSN/ISBN NO: 1955-2513. Impact factor: 0.44, H index:11
- ✓ **Dr.A.Balakrishna**, Dr.D.Nageswara Rao, Dr “Fuzzy Approach to the Selection of Material Data in Concurrent Engineering Environment” Journal of Scientific Research Engineering Vol.3 (9), Page No. 921-927, 2011. Impact factor: 0.44
- ✓ Ande Stanly Kumar, Dr. K. Mallikarjuna Rao, **Dr.A. Balakrishna**, “Overview of robotics with voice recognition” published in International Journal computational mathematical Ideas. Vol.2 2010. IC value:3.14
- ✓ K. Suresh Babu, Dr.D.Nageswara Rao, **Dr. A.Balakrishna** “Development of a Manufacturing Database System for STEP-NC Data from Express Entities”, International Journal of Engineering Science and Technology, Vol. 2(11), 2010, 6819-6828.
- ✓ Chinta Someswara Rao, **Balakrishna Adavi** “A Frame Work for XML Ontology to STEP-PDM from Express Entities: A String Matching Approach”, Annals of Data science, Springer, Vol.3, Issue.3, pp.1-40, 2016, ISSN: 2198-5812.
- ✓ Sreerama Chakravarthy Damera, Prof. Ch. Srinivasa Rao<sup>2</sup> and Prof. **A. Balakrishna**, “2-D FINITE ELEMENT MODELING OF GMA WELDING PROCESS”, International Journal of Advanced Research , Volume 4, Issue 6, PP:1484-1494, 2016, DOI: 10.21474/IJAR01
- ✓ Sankara Babu Chinka, **Bala Krishna Adavi** , Srinivasa Rao Putti, Influence of Crack on Modal Parameters of Cantilever Beam Using Experimental Modal Analysis, Journal of Modeling and Simulation of Materials Volume 1, Issue 1, pp. 16-23, 2018, DOI: <https://doi.org/10.21467/jmsm.1.1.16-23>
- ✓ Siva Sankara Babu Chinka, **Bala Krishna Adavi**, Srinivasa Rao Putti, Damage Identification of Fixed- Fixed Beam Using Normalized Natural Frequency Zones, Jour of Adv Research in Dynamical & Control Systems, Vol. 10, 10-Special Issue, 2018
- ✓ Siva Sankara Babu Chinka, **Bala Krishna Adavi**, Srinivasa Rao Putti, Damage Localization of Cantilever Beam Based on Normalized Natural Frequency Zones and

Vibration Nodes, International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-8, Issue-5, March 2019

- ✓ Siva Sankara Babu Chinka, Srinivasa Rao Putti, **Bala Krishna Adavi**, Modal testing and evaluation of cracks on cantilever beam using mode shape curvatures and natural frequencies, STRUCTURES, Elsevier, Volume 32, 2021, Pages 1386-1397, Impact Factor: 2.983, Cite Score: 2.3, ISSN 2352-0124, <https://doi.org/10.1016/j.istruc.2021.03.049>, <https://www.sciencedirect.com/science/article/pii/S2352012421002290>,
- ✓ M. LAKSHMI, A. BALA KRISHNA, CH. SRINIVASA RAO, R. ADITYA, "DEPLOYMENT OF FEATURE SCRIPT IN COLLABORATION WITH CLOUD COMPUTING" International Journal of Mechanical and Production Engineering Research and Development (IJMPERD) ISSN(P): 2249-6890; ISSN(E): 2249-8001 Vol. 10, Special Issue, Aug 2020, 39-48

#### **NATIONAL JOURNALS**

- ✓ V.Durga Prasad Rao, **A.Balakrishna**, "Replacement Analysis of 12MW Turbine Generator set- A case study", published in Industrial Engineering Journal, Vol. XXXV(10), 2006 (with). Impact factor: 0.1, H index: 8
- ✓ **A.Balakrishna**, Dr.D.Nageswara Rao "Computer aided material selection processes in concurrent engineering using neural networks" published in The Institution of Engineers (India), Vol. 88, 2007. Impact factor: 0.1, H index: 8

#### **INTERNATIONAL CONFERENCES**

- ✓ **A.Balakrishna**, "Implementation of collaborative product development using STEP/XML", International Conference on Current trends of information technology, conducted on 2005, page No. 325-328.
- ✓ **A.Balakrishna**, "Implementation of Web Based Collaborative Product Development System using STEP/ XML / X3D Emphasis on Mechanical Design and FE Analysis" presented in International ANSYS Conference and Exhibition Pittsburgh, USA, 2006(Dr D.N.Rao, R. S. Babu).
- ✓ **A.Balakrishna**, Ande Stanly Kumar, Dr. D. Ranga Raju "Opt-mechanical design & structural analysis of microscope" published in International Conference on CAE 2007, proceedings, at IIT, Chennai, 2007.
- ✓ **Dr.Adavi Balakrishna**, Ch. Someswara Rao "Implementation of Interactive Database System for STEP-Geometric Data from Express Entities" presented in 3<sup>rd</sup> IEEE International Conference on Computer Science and Information Technology, 2010, Chengdu, China.
- ✓ **Dr.Adavi Balakrishna**, Ch. Someswara Rao "Implementation of Object Oriented Approach for Copyright Protection Using Hadamard Transforms" presented in International Conference on Computer and Communication Technology (ICCCT-2010) and published by the IEEE, at Motilal Nehru NIT, Allahabad, 2010 (with Ch. Someswara Rao)
- ✓ **Dr.Adavi Balakrishna**, Ch. Someswara Rao "Implementation of Interactive Data Knowledge Management and Semantic Web for Step-Data from Express Entities" presented in 3<sup>rd</sup> International Conference on Emerging Trends in Engineering and Technology, at BITS Pilani, Goa, 2010.
- ✓ Dr.A.Balakrishna, Dr. K. Mallikarjuna Rao, **Dr. A. Bala Krishna** "Implementation Speech Recognition For Controlling the Movement of Robots In Industries", at International Conference on Computing and Control Engineering (ICCCE 2012), Dr.M.G.R. Educational & Research Institute, Chennai, 12 & 13 April, 2012.
- ✓ **Dr.A.Balakrishna** Ch. Someswara Rao, Dr. M.S. Bhadri Raju "Modelling and Analysis of Teeth for an Orthodontic Treatment Planning Using Image Processing and FE" presented at **International Conference on Advancements in Polymeric Materials (APM2013)** with the theme of *Innovation in Materials and Product Development*, CIPET, Lucknow, on **March 1<sup>st</sup>, 2013**.
- ✓ Ande Stanly Kumar, Dr. K. Mallikarjuna Rao, **Dr. A. Bala Krishna** "Design and Simulation of Robot Manipulator with Speech Recognition for Agriculture, INDIAN TECHNOLOGY CONGRESS – 2013 , 24 July 2013.
- ✓ **A.Bala Krishna**, Ch. Someswara Rao, Dr. M.S. Bhadri Raju "Database model for step-

geometric data – an object oriented approach" Proceedings of 48th CSI Annual Convention, Springer, December, 2013.

- ✓ **A.Balakrishna**, Ch. Vamsi, Dr. V.Durga Prasad Rao, "Mathematical formulation of biomechanical parameters used in orthodontic treatment", International Conference on Mathematics, Engineering and Industrial Applications (ICoMEIA 2014), Malaysia, 28-30th, May 2014. DOI:<http://dx.doi.org/10.1063/1.4926636>
- ✓ V.Durga Prasad Rao, **A.Balakrishna**, " Optimal selection of parameters in multi tool drilling by improved harmony search algorithm ", 5<sup>th</sup> International & 26<sup>th</sup> All India Manufacturing Technology, Design and Research Conference (AIMTDR 2014) December 12<sup>th</sup> –14<sup>th</sup>, 2014, IIT Guwahati, Assam, India. ISBN: 978-8-19274-612-8
- ✓ A.S.P.Seshank, **A.Balakrishna**, Indra Reddy "Implementation of web based concurrent engineering in product development" International Conference on Computer Aided Engineering (CAE-2015) Department of Mechanical Engineering, GITAM University, School of Technology, Hyderabad, India, December 2015
- ✓ Ande Stanly Kumar, Dr. K. Mallikarjuna Rao, **Dr. A. Bala Krishna**, "Parametric studies on motion intensity factors in a Robotic Welding using Speech Recognition" Inter-national, IACC-2016, 27<sup>th</sup> Feb.2016
- ✓ Siva Sankara Babu Chinka, **Bala Krishna Adavi**, Srinivasa Rao Putti, Effect of crack location and crack depth on natural frequencies of fixed beam using experimental modal analysis, in International conference on Latest innovations in materials Engineering & Technology (ICLIET), held on 15<sup>th</sup> & 16<sup>th</sup> June 2018 at Lendi Institute of Engineering & Technology, Vizianagaram.
- ✓ **A.Bala Krishna**, M.Indra Reddy, A.S.P.Seshank, Ch.Raghuveer, M.Anil Kumar, Characterization of process parameters on mechanical properties of short and randomly oriented Agrostis (Bentgrass) fiber reinforced composite, Materials Today: Proceedings, <https://doi.org/10.1016/j.matpr.2018.06.568>
- ✓ Dr. **Adavi Bala Krishna**, A.S.P. Seshank, A.Chakradhara, D.Lalitesh, A. Balaji, Web based design of cam profile for implementation of Collaborative Product Development, International Conference on Applied Sciences and Technology, ICAST-2018, SRKREC
- ✓ K. Durgashyam, M. Indra Reddy, **A. Bala Krishna** et al., Experimental investigation on mechanical properties of PETG material processed by fused deposition modeling method, Materials Today: Proceedings, <https://doi.org/10.1016/j.matpr.2019.06.082>
- ✓ **A. Bala Krishna**, M. V. Someswararao, P. S. V. Subbarao et al., Fabrication and characterisation of electrospun barium titanate and polyvinyl pyridine composite nanofibers, Materials Today: Proceedings, <https://doi.org/10.1016/j.matpr.2019.06.653>
- ✓ M. Lakshmi Sramika, K.S. Jaideep, **Dr. A. Bala Krishna**, Dr. Ch. Srinivasa Rao, Dr. Chinta Someswara Rao, Database preparation for additive manufacturing using step standards, International Conference on Applied Sciences and Technology, ICAST-2019, SRKREC.

#### **NATIONAL CONFERENCE**

- ✓ **A.Balakrishna**, Dr.D.Nageswara Rao "Evaluation of stresses in a cracked plate by avoiding singularities at the crack tip" presented in National Conference on Emerging Technologies in Mechanical Engineering for Sustainable Development at SRKR Engg. College, 2006.
- ✓ **A.Balakrishna**, Dr.D.Nageswara Rao "Computer aided material selection processes in concurrent engineering using neural networks" presented in National Conference on Emerging Technologies in Mechanical Engineering for Sustainable Development at SRKR Engg. College, 2006.
- ✓ Ande Stanly Kumar, Dr. K. Mallikarjuna Rao, **Dr. A. Bala Krishna** "Model-Based Programming of Robotic Space Explorers", National Conference on Information Technology Enabled Services", at Adikavi Nannaya University, Rajahmundry Oct 22<sup>nd</sup> & 23<sup>rd</sup>, 2010
- ✓ Ande Stanly Kumar, Dr. K. Mallikarjuna Rao, **Dr. A. Bala Krishna** "Human Machine Interaction of Robot-by-voice", Presented in AIRES 2012, at Andhra University, Visakhapatnam on 29-30 June 2012.

## **CITATIONS INDICES**

- Citations: **116**
- h-index: **5**
- i10-index: **3**

## **GUEST FACULTY/INVITED LECTURES**

- ✓ Guest Faculty for Staff development conducted by mechanical engineering department, S.R.K.R. Engineering College, Bhimavaram.
- ✓ Resource persons to workshop on, "Intelligent Manufacturing" conduct by mechanical engineering department, Andhra University, Visakhapatnam, and delivered a lecture on Concurrent engineering.
- ✓ Delivered Lecture on Collaborative Product development in AICTE sponsored Staff development program conducted by GIET, Rajahmundry.
- ✓ Resource persons to workshop on, "Manufacturing Automation present and Future" conduct by mechanical engineering department, Anil Neerukonda Institute of Technology & Science, Visakhapatnam, and delivered a lecture on STEP-NC: E-Manufacturing Using STEP/XML.

## **MEMBERSHIP OF PROFESSIONAL SOCIETIES**

- ✓ Life member of I.S.T.E.
- ✓ Life member of F.I.E

## **TECHNICAL EXPERTISE**

CATIA, Pro-e,  
ANSYS & Hypermesh

## **CONFERENCES/SUMMER/WINTER SCHOOLS/WORKSHOPS ATTENDED**

- ✓ ISTE short term course on "pump and valve selection for optimum performance" at REC, Allahabad, 1994
- ✓ QIP short term course on "Vibration Control ", IIT, Bombay, 1994.
- ✓ International symposium - workshop on "Boiling and Condensation and Two phase flow heat transfer" 1994.
- ✓ ISTE summer school on "COMPUTER GRAPHICS "at IIT, Madras, 1996.
- ✓ Summer school on "Advances in Manufacturing Processes and Automation" at REC, Rurkela, 1997.
- ✓ QIP course on "Finite Element Methods in Solids, Fluids and Heat transfer" at IIT, Delhi, 1997.
- ✓ QIP short term course on "CAD", IIT, Delhi, 1997.
- ✓ QIP short term course on "Computational of internal flows", IIT, Madras, 2001.
- ✓ QIP course on "Finite Element Methods in Mechanical Systems" at IIT, Kharagpur, 2002.