


Faculty Profile

Name of Faculty	Dr. B.S. ANIL KUMAR	
Department	Mechanical Engineering	
Qualification	M.Tech., Ph.D.	
Designation	Professor	
Area of specialization	Thermal Engineering	
Date of Joining BNMIT	11.03.2002	
Nature of Association (Regular/Contractual/Adjunct)	Regular	
Mobile Number	9844463770	
e-mail	bsanilkumar@bnmit.in , anilsowmyak@gmail.com	
No. of years of Experience	Teaching: 17.5 years	

Academic Qualifications

- **Ph.D.** (2017) from Visvesvaraya Technological University (VTU), P.E.S. College of Engineering Mandya, Belgaum Karnataka.
- **M. Tech.** (2001), Department of Mechanical Engineering, Sri Jayachamarajendra college of Engineering, Mysore Visvesvaraya Technological University, India (FCD).
- **B. E.** (1996), Department of Mechanical Engineering, P.E.S. College of Engineering Mandya, Mysore University, India (I Class).

Working Experience Details

- Professor, Dept. of Mechanical Engineering, BNMIT, Bangalore, India, (July 2016–Till date)
- Associate Professor, Dept. of Mechanical Engineering, BNMIT, Bangalore, India, (2012 –2016)
- Assistant Professor, Dept. of Mechanical Engineering, BNMIT, Bangalore, India, (2009 –2012)
- Senior Lecturer, Dept. of Mechanical Engineering, BNMIT, Bangalore, India, (2008 –2009)
- Lecturer, Dept. of Mechanical Engineering, BNMIT, Bangalore, India, (2002 – 2008)

Subject taught :

Computer Aided Engineering Drawing, Elements of Mechanical Engineering, Computer Aided Machine Drawing, Fluid Mechanics, Manufacturing process, Theory of Machines, Hydraulics and pneumatics, Foundry Technology

Research Experience Details:

Ph.D:

Guide: Dr. Ramalingaih, Professor Department of Mechanical Engineering, PESCE Mandya

Co-Guide: Dr. S. Manjunath Professor & Head Department of Mathematics, BNMIT Bangalore

Title: “Computational investigation of flow separation in an incompressible aerodynamic regime”

Numerical simulation of flow past airfoils in the stalled region is a challenging problem due to various complex phenomena like strong vortex dynamics, boundary layer separation due to adverse pressure gradient etc. For accurate numerical prediction of separated flow, correct modeling of boundary layer is essential to capture the flow details.

In the present work 2D Computational Fluid Dynamics (CFD) analysis for flow around NACA 23024 subsonic airfoil at Reynolds number of 3 million and 6 million will be carried out for a range of angle of attack (0 to +20 degrees) covering both the linear slope and stalling region using ANSYS FLUENT CFD software package. CFD analysis results are compared with the wind tunnel test results available in literatures.

The performance of Spalart-allamaras one equation turbulence model, Standard K-epsilon turbulence model with near wall corrections, Mentors K-omega Shear Stress Transport Turbulence model and K-omega SST model with flow transition is analyzed.

The established accurate CFD methodology is helpful for Industrial aerodynamic CFD simulation applications like flow past automotive vehicles, wind turbine rotor blades etc, in order to get accurate and reliable CFD analysis results close to the actual values

Academic Positions and other Responsibilities (Institute Level):

1. **Coordinator**, FDP on Research Issues and Challenges in Mechanical Engineering, BNMIT (2017-18)
2. **Coordinator**, TATVA, BNMIT (2015-16)
3. **Coordinator**, Project/Technical Seminar, BNMIT (2016 to till date)
4. **Coordinator**, Alumni, BNMIT(2013 to till date)
5. **Auditor, ISO**, BNMIT(2015 to till date)
6. **Warden**, BNMIT Boys Hostel,(2002-2004)
7. **Member**, IQAC, BNMIT (2016-17).
8. **Convener**, Antiragging Committee, BNMIT (2016-17).
9. **Coordinator**, Collection center / Valuation Center of VTU Examination during 2006
10. **Deputy Chief Superintendent** (External) at City College of Engineering, Bangalore during (2016-17) for the conduction of B.E. examinations of VTU, Belgaum.

Experimental/ Computational/ Any other Skills:

- AUTOCAD 2004
- SOLID EDGE V18/19
- SOLID WORKS
- ANSYS FLUENT CFD Software

Awards/ Achievements/Memberships:

- **Letter of appreciation** from the management (**BNMIT**) for scoring more than **90%** in the self appraisal for the academic year 2015-16.

Professional Memberships:

- Life Member of Indian Society for Technical Education

Research Publications:

I. In National & International Journals

International Journals:

1. Computational investigation of flow separation over NACA 23024 airfoil at 6 million free stream Reynolds number using K-Epsilon turbulence model in Materials Today: Proceeding 5 (2018) 12632-12640
2. Computational Investigation of flow separation over NACA 23024 airfoil at 6 million free stream Reynolds number in International Journal of Science Technology and Society. Vol. 3, No. 6, 2015, pp. 315-321. ISSN: 2330-7412 (Print); ISSN: 2330-7420 (Online), January 2016
3. Presented and published a paper "Investigation of pressure contour and velocity vector of NACA 0015 in comparison with optimized NACA0015 using gurney flap at ICMBME on 26th July 2015. ISBN: 978-93-85465-63-5.
4. Computational Investigation of flow separation over NACA 23024 airfoil at 3 million free stream Reynolds number in International Journal of Engineering Research and Technology (IJERT) volume 4, issue10,Oct 2015. Impact factor 1.76
5. Computational Investigation of Flow Separation in Incompressible Aerodynamic Regime , International Journal of Innovative Research in Science, Engineering and Technology, (IJIRSET), Volume 4,Issue 2, February 2015. Impact factor 6.209.

Papers presented in International/National Conferences

International

1. Participated and presented a paper in the technical session on 11th March 2017 entitled “ **Computational investigation of flow separation over NACA 23024 airfoil at 6 million free stream Reynolds number using K-Epsilon turbulence model** ” in the international conference on materials, manufacturing and modeling held during March 9th– 11th, **2017 at VIT University, Vellore**
2. Participated and presented a paper entitled “**Computational Investigation of Flow Separation Over NACA 23024 Airfoil at 3 million Free Stream Reynolds Number Using Spalart Allmaras Turbulence Model**” in the 61st Congress of ISTAM organized by the Department of Mathematics, School of Advanced Sciences, **VIT University, Vellore** during 11th to 14th December, 2016.
3. Participated and presented a paper entitled “**Optimization and Analysis of NACA 4412 using Gurney flap**” in **IRCCSME on 28th June 2015 at Bangalore** which will be organized by **IRAJ Research Forum** and in association with Institute of Research and journals for presentation at the Conference.
4. Participated and presented a paper entitled “**Computational Investigation of Flow Separation in Incompressible Aerodynamics Regime**” in the 59th Congress of ISTAM-2014 held during December 17-20, 2014 at Alliance College of Engineering and Design Alliance University, Bengaluru

National

1. Participated and presented a paper entitled “ **Computational investigation of flow separation over NACA 23024 airfoil at 6 million free stream Reynolds number**” in VI National Conference on Emerging Trends in Fluid Mechanics – April 29 & 30, 2016, organized by Department of Mathematics at Christ University Bengaluru.
2. Participated and presented a paper entitled “**Upstream Pull Loop Implementation in Common Rail Pump Components And Housing Area**” in the 5th National Conference on Emerging Trends in Engineering Technologies ETET 2016, held on 11th and 12th of March 2016 at Jyothy Institute of Technology, Bengaluru
3. Participated and presented a paper entitled “**Analysis of NACA 0015 using CFD and validation using wind tunnel**” in “3rd National Conference on Topical Transcend in Mechanical Technology-2015” held on 9th May 2015, Conducted at SJB Institute of Technology Bengaluru
4. Participated and presented a paper entitled “ **Validation of wind tunnel test results for NACA 2415 airfoil using Finite volume method based CFD software**” in “ National Conference on

Topical Transcend in Mechanical Technology-2013” held at SJB Institute of Technology on 4th May 2013 organized by the Department of Mechanical Engineering

Invited Talks Delivered:

1. **As a Resource person** for three days Faculty Development Program on “Computer Aided Machine Drawing” organized by Department of Mechanical Engineering JSS Academy of Technical Education Bengaluru from 28th to 30th December 2015.
2. **As a Resource person** for three days Faculty Development Program on “Finite Element Analysis and Computational Fluid Dynamics” scheduled between 29th to 2nd February 2018 at Jain University Global Campus.
3. **As a Resource person** for the workshop on “New Model Curriculum for first year BE / BTech - CBCS detailed syllabus (2018-19) as per Outcome Based Education (OBE) format including Course Outcome and Bloom’s Taxonomy under TEQUIP 1.3 for the course Engineering Graphics Design and Workshop Practices Under Mechanical Engineering board held on 09.05.2018 at BNMIT Bangalore organized by Visvesvaraya Technological University Belagavi.

Participation in Training courses/Seminars/Workshops

1. Participated in Faculty Development Programme on “**Research Issues and Challenges in Mechanical Engineering**” organized by the Department of Mechanical Engineering, BNM Institute of Technology, Bengaluru from 16th July – 20th July 2018
2. Participated in Faculty Development Programme on “**Emerging Research Areas and Trends in Mechanical Engineering**” organized by the Department of Mechanical Engineering, BNM Institute of Technology, Bengaluru from 31st July – 5th August 2017
3. Participated in Faculty Development Programme on “**Recent Advancements in Mechanical Engineering**” organized by the Department of Mechanical Engineering, BNM Institute of Technology, Bengaluru from 16th – 21st January 2017
4. Participated in Faculty Development Programme on “**Research Avenues in Thermal, Design and Manufacturing Engineering**” organized by the Department of Mechanical Engineering, BNM Institute of Technology, Bengaluru from 11th – 16th July 2016
5. Successfully completed the course entitled “**Integrated course on Computational Fluid Dynamics and Aerospace Engineering**” an Industry oriented course of 90 houses duration at “**Niharika Institute of Computational Engineering**” (www.nicecfcd.com), Bangalore from December 2012 to June 2013.
6. Participated in one day workshop on “**COMPUTATIONAL FLUID DYNAMICS**” organized by department of Mechanical Engineering, ACSCE, Bangalore and jointly organized by VTU Belgaum on 28th September 2012.
7. Ten days workshop on “**COMPUTATIONAL FLUID DYNAMICS**” organized by the Department of Mechanical Engineering, Nitte Meenakshi Institute of Technology, Bangalore during July 12-22, 2010

Personal Details:

- **Date of Birth:** 16 - 03 –1974; **Sex:** Male.
- **Family Details:** Wife and one son
- **Passport Number:** **K7780568** (valid till 22nd October 2022)

16th February 2019

B.S. Anil Kumar