1. Dr. (Mrs.) V.A. Sonetha
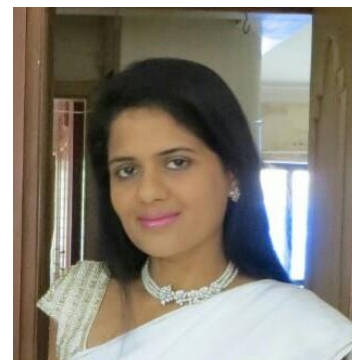
Name of Teaching Staff : Dr. (Mrs.) Vaibhavi Ashik Sonetha

Designation: Assistant Professor

Department: Biomedical Engineering

Date of Joining the Institution: 1st August, 2003

Qualifications with Class / Grade:
1. Ph.D. (Technology), 2017, IIT Bombay
2. M.Tech. (Biomedical Engineering), 2007, IIT Bombay, CPI: 9.81
3. B.E. (Biomedical Engineering), 2002, D. J. Sanghvi COE, First Class with Distinction.

Total Experience in Years :
Teaching: **17 Years**
Assistant Professor in D. J. Sanghvi College of Engineering from October 2008 till date.
Lecturer in D. J. Sanghvi College of Engineering from July 2003 till September 2008.

Papers Published:
International Journal:
1. Microelectromechanical Systems in Medicine. Journal of Medical and Biological Engineering, 37(4):580-601, 2017.
   DOI: 10.1007/s40846-017-0265-x.
2. Mathematical Modeling and Simulation of an Occlusion Device in a Blood Vessel. Cardiovascular Engineering and Technology, 7(4):420-431, 2016.
   DOI: 10.1007/s13239-016-0278-6.
3. Simulation of pulsatile blood flow through various cardiac defects and quantitative measurements of blood volume. Procedia Material Science, 10:706 - 713, 2015.
   DOI: 10.1016/j.mspro.2015.06.078
4. Flow simulation of cardiac defects to evaluate effectiveness of occlusion device. Journal of Medical Devices, 8:020940 1-3, 2014.
   DOI: 10.1115/1.4027066
5. Evolution of a Novel Intraductal Patent Ductus Arteriosus Occlusion Device. Journal of Medical Devices, 5:035001 1-6, 2011.
   DOI:10.1115/1.4003674

Papers Presented in Conferences:
1. Web based radiology viewer. IJCA Proceedings on International conference on Computer Technology, 1:6–9, 2015.
2. Fatigue analysis of knee joint. Procedia Computer Science, 45:250 – 255, 2015.
   DOI: 10.1016/j.procs.2015.03.131

3. Review on Simulation and Evaluation of Intravascular Prosthetic Device Using Finite Element Method and Computational Fluid Dynamics and Application to Simulate Aneurysm Formation. Proceedings of 15th International conference on Biomedical Engineering, Springer International Publishing Switzerland, 43:797-800, 2014.
DOI: 10.1007/978-3-319-02913-9_205

4. Non-invasive technique for measurement of electrical activity of stomach. Conference proceedings at International conference in Engineering Technology and Management, Rajiv Gandhi college of Engineering and Technology, 221-225, 2012.
ISBN: 978-93-81583-52-4

5. Patent Ductus Arteriosus closure device. International Journal on Biomedical Engineering and Nanotechnology 2(3): 28-33, 2009. ISSN - 0974 – 2743.

Patent:

Patent number: 31181, Application number: 58/MUM/2011
Title: 'An intraductal patent ductus arteriosus occlusion device and method for making the same'
Granted by: Indian Patent office
Term: 20 years from 7th January 2011

Books Published:
1. Network Theory. TechKnowledge Publication, October 2019.
2. Mechanical Measurement and Control. TechKnowledge Publication, October 2019.
3. Electronic Instrumentation and Control. Tech Max Publication, July 2017.
   Revised Edition: 2018
4. Electrical and Electronic Measurements. Tech Max Publication, July 2013.
   Revised Edition: 2014, 2015, 2016, 2017, 2018.
5. Electronic Instruments and Measurements (Electronics Engineering). Tech Max Publication, July 2013.
   Revised Edition: 2014, 2015, 2016, 2017, 2018.
6. Electronic Instruments and Measurements (Electronics and Telecommunication Engineering). Tech Max Publication, July 2013.
   Revised Edition: 2014, 2015, 2016.
7. Electronics Instrumentation Systems. Tech Max Publication, January 2011.
   Revised Edition: 2012, 2013, 2014.
8. Electronic Instrumentation. Tech Max Publication, August 2009.
   Revised Edition: 2011, 2012.
9. Electronic and Electrical Measuring Instruments and Machine. Tech Max Publication, January 2009. Revised Edition: 2010, 2011, 2012, 2013.

IBM Training:
1. Applied Statistics, 28th June to 2nd July, 2020
2. Machine Learning, 22nd – 25th July, 2020

SAS Training:
3. SAS(R) Programming 1: Essentials, 27th July – 29th July, 2020
4. SAS(R) Programming 2: Data Manipulation Techniques, 30th July - 31st July, 2020
5. SAS(R) Visual Analytics 1 for SAS(R)9: Basics, 3rd – 4th August, 2020
6. SAS(R) Visual Analytics 2 for SAS(R)9: Advanced, 5th – 6th August, 2020
7. SAS(R) Enterprise Guide(R): ANOVA, Regression, and Logistic Regression, 12th -15th August, 2020
8. Applied Analytics Using SAS(R) Enterprise Miner(TM), 17th – 19th August, 2020

Coursera Courses:
1. IBM Data Science: Professional Certificate, IBM, 10th July 2020
2. What is Data Science?, IBM, 5th July 2020
3. Tools for Data Science, IBM, 5th July 2020
4. Data Science Methodology, IBM, 5th July 2020
5. Python for Data Science and AI, IBM, 6th July 2020
6. Databases and SQL for Data Science, IBM, 6th July 2020
7. Data Analysis with Python, IBM, 7th July 2020
8. Data Visualization with Python, IBM, 7th July 2020
9. Machine Learning with Python, IBM, 4th July 2020
10. Applied Data Science Capstone, IBM, 10th July 2020

11. Python for Everybody: Specialization, University of Michigan, 21st June 2020
12. Programming for Everybody (Getting Started with Python), University of Michigan, 18th June 2020
13. Python Data Structures, University of Michigan, 18th June 2020
14. Using Python to Access Web Data, University of Michigan, 20th June 2020
15. Using Databases with Python, University of Michigan, 21st June 2020
16. Capstone: Retrieving, Processing, and Visualizing Data with Python, University of Michigan, 21st June 2020

17. The Data Scientist's Toolbox, John Hopkins University, 22nd June 2020
18. R Programming, John Hopkins University, 24th June 2020
19. Statistical Inference, John Hopkins University, 27th June 2020
20. AI for Everyone, 14th June 2020
21. A Crash Course in Data Science, John Hopkins University, 14th June 2020

22. SAS Programmer: Specialization, 31st July 2020

23. Getting Started with SAS Programming, 20th July 2020
24. Doing More with SAS Programming, 26th July 2020
25. Practical SAS Programming and Certification Review, 31st July 2020

26. SAS Visual Business Analytics: Specialization, 1st September 2020
27. Getting Started with SAS Visual Analytics, 1st August 2020
28. Data Analysis and Reporting in SAS Visual Analytics, 29th August 2020
29. Using Data for Geographic Mapping and Forecasting in SAS Visual analytics, 31st August, 2020
30. SAS Visual Analytics Performing Network, Path, and Text Analyses in SAS Visual Analytics, 1st September 2020
31. Creating Advanced Reports with SAS Visual Analytics, 1st September 2020

32. Assessment in Higher Education: Professional Development for Teachers, 14th July, 2020
33. Learning to Teach Online, 14th July 2020

STTP/Workshops/Conferences:
1. FDP on "**ETL in the age of Artificial Intellige**nce" by DJSCE on 26 Sep 2020".
2. FDP on "**Improving Teaching Learning Experience using Best Practices**" by DJSCE from 15th June 2020 to 19th June 2020.
3. FDP on "**Scilab**" by Spoken tutorial project, IIT Bombay from 26th May, 2020 to 30th May, 2020.
4. IIC Online Sessions by Institution's Innovation Council (IIC) of MHRD's Innovation Cell, New Delhi to promote **Innovation, IPR, Entrepreneurship, and Start-ups** among HEIs from 28th April to 22nd May 2020.
5. AICTE-ISTE approved Induction/Refresher programme on "**Adaptive Signal Processing:** The road map to machine learning", held at DJSCE from 7th Jan, 2020 to 11th Jan 2020.
6. FDP on "**InnovationNext software**" by Innovation Next, held at MPSTME on 24th and 25th June, 2019.
7. One-day workshop on **Python**, conducted by IIT Bombay on 22nd June, 2019.
8. Fifth Indian IIT Bombay's Faculty Alumni Network (FAN) Symposium 2019, held at Taj Exotica, Goa on 6th April, 2019.
9. Faculty Development Programme on "**Active Teaching Learning Strategies Using Innovative Technology**", held at D. J. Sanghvi C. O. E., Mumbai from 25th to 26th February, 2019.
10. AICTE-ISTE approved Induction/Refresher programme "**Inclusion of Nanotechnology in various commercial Arena**", held at K. J. Somaiya Institute of Engineering and Information Technology, Mumbai from 2nd July to 7th July, 2018.
11. INUP hands-on training workshop on **Nanofabrication technologies**, held at IIT Bombay from 24th October to 28th October, 2016.
12. Training course on **Simulation of medical devices** at Boston Scientific Engineering and Technology Pvt. Ltd., Gurgaon from 5th September to 8th September, 2016.

13. Saksham IT championship programme at DJSCE on 31st August, 2016.
14. 2nd international conference on **Nanomaterials and Nanotechnologies** CNT 2014 held at Vardhaman college of engineering, Hyderabad on 18th October, 2015.
15. Design of medical device conference held at University of Minnesota, Minneapolis, USA from 7th April to 10th April, 2014.
16. Attended 15th International conference on Biomedical Engineering at National University of Singapore, 4th – 7th December 2013.
17. Attended workshop on "**Credit and Grading System**" at Sardar Patel Institute of Technology on 26th July, 2012.
18. Attended "**18th International Medical Fair and Conference**" organized by Messe Düsseldorf GmbH at Mumbai, March 2012.
19. Attended ISTE approved STTP on "**Upcoming Trends in Biomedical Engineering**" organized by Watumull Institute of Electronics Engineering and Computer Technology from 4th – 15th July, 2011.
20. Attended International conference on "**Biomedical Engineering and Nanotechnology**" organized by D. Y. Patil College of Engineering and Technology, Kolhapur.
21. INDO – US Workshop on "**Cardiovascular Prosthetic Devices: In Vitro Studies to Clinical Implantation**" at Sree Chitra Tirunal Instutute for Medical Science and Technology, Thiruvananthapuram from 1st – 3rd February, 2007.
22. 34th ISTE Annual convention and national seminar at Netaji Subhash Institute of Technology, Hyderabad from 18th – 20th December, 2004.
23. Refresher course on "Digital Signal Processing" at Jawaharlal Nehru technological University, Hyderabad from 17th November – 7th December 2004.
24. Staff development Programme on "**Enhancing Skills of Engineering Faculty**" at Nirma University of Science and Technology, Ahmedabad from 28th June – 10th July, 2004.
25. ISTE approved Summer school on "**Biomedical Instrumentation and Health care**" at D. J. Sanghvi C.O.E. from 16th – 28th June, 2003.

Projects at Bachelors level: 15

Professional Memberships: ISTE Member

Awards:
1. Winner of 14th Avishkar Research Convention 2019-20 organized by University of Mumbai, UG category, University level.
   Project title: "Brennen Transdermal Patch"
2. Winner of **INUP Nanotech Hackathon** 2018
   Project title: "Brennen Transdermal Patch"
3. Winner of "**ASM India 2017-Doctorate award**" for distinguished PhD research in Engineering
4. Honored with "**Woman in Engineering**" award by ASM international India chapter for research work in Biomedical engineering in 2016.

5. Awarded **BEST POSTER** – "Simulation of pulsatile blood flow through various cardiac defects and quantitative measurements of shunted blood volume" at 2nd international conference on Nanomaterials and Technologies, Hyderabad in 2014
6. Awarded **BEST PAPER** – "Patent Ductus Arteriosus (PDA) closure device" at International conference on "Biomedical Engineering and Nanotechnology" organized by D. Y. Patil College of Engineering and Technology, Kolhapur in 2008
7. Honored with "**Nitish V. Thakor M.TECH AWARD**" for excellence in ongoing work in biomedical engineering by I.I.T. Bombay in 2007

Grants Fetched:

1. "**Fabrication of transdermal drug delivery patch for treatment of Migraine**"
   Grant Amount: INR 40000/-
   Granting Agency: Mumbai University
   Scheme: Minor Research Grant
   March 2020 – January 2021

2. "**Design, Fabrication and Evaluation of patient specific bio-resorbable occlusion device for treating atrial septal defect**"
   Grant Amount: INR 35,10,000/-
   Granting Agency: DST-SERB
   Scheme: Core Research Grant
   February 2020 – February 2023

3. "**Brennen Transdermal Patch: Testing**"
   Grant Amount: INR 40000/-
   Granting Agency: Mumbai University
   Scheme: Minor Research Grant
   March 2019 – August 2019

4. "**Brennen Transdermal Patch: Fabrication**"
   Granting Agency: INUP, IIT Bombay
   January 2019 – June 2019

5. "**MEMS based Drug Delivery System using Polymer Microneedles**"
   Grant Amount: INR 25000/-
   Granting Agency: Mumbai University
   Scheme: Minor Research Grant July 2016 – May 2017
   Achievements: TCS Best Project Award
                 Shushruta Innovation Award

6. "**MEMS based Drug Delivery System using Polymer Hollow Microneedles**"
   Granting Agency: INUP, IIT Bombay
   July 2016 – May 2017

7. "**Drug Delivery System using solid Microneedles**"
   Granting Agency: INUP, IIT Bombay
   July 2016 – May 2017

8. "**Non-invasive technique for measurement of Electrical Activity of Stomach**"
   Grant Amount: INR 40000/-
   Granting Agency: Sahajanand Laser Technology
   July 2011 – May 2012

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