

Faculty Profile

Dr. B. G. Sudarshan earned his MBBS from Sri Siddhartha Medical College, Tumkuru, and a Ph.D. in Biomedical Engineering from Avinashilingam University, Coimbatore. With over 20 years of experience across teaching, research, and clinical practice, he has made notable contributions at the intersection of medicine and engineering. He has served as the Medical Officer at RV College of Engineering (RVCE), Bengaluru, for more than 18 years, while actively engaging in academic and research activities. Currently, he is an Associate Professor in the Department of Electronics and Instrumentation Engineering at RVCE. Dr. Sudarshan has authored 30 international journal papers, presented at 7 international and 3 national conferences, and holds 2 granted and 2 published patents. He has successfully led research projects funded by agencies such as DSIR, DST, UGC, and BPR&D. He has mentored three Ph.D. scholars and is currently supervising another in the field of biomedical engineering.



Personal Information

- **Name:** Dr. B. G. Sudarshan
- **Designation:** Associate Professor
- **Department:** Department of Electronics and Instrumentation Engineering
- **Email:** sudharshanbg@rvce.edu.in
- **Phone:** NIL

Google Scholar: <https://scholar.google.com/citations?user=wxmZ1pYAAAAJ&hl=en>

ORCID: <https://orcid.org/0000-0001-7811-6079>

Domain of Expertise: Biomedical Engineering and Clinical Practise

Research Focus

- **Primary Area:** Biomedical Engineering
- **Allied Areas:**
 - AI assisted Clinical Practice

Academic Qualifications

- **Ph.D.:** Biomedical Engineering, Avinashlingam University, 2010
- **MBBS:** Sri Siddhartha Medical College, Bangalore University, 2001

Professional Experience

Experience			
S.No	Institute/College/Industry	Job Title	Duration (From- To)

1.	R V College of Engineering, Bengaluru	Associate Professor, Department of E & I	Since 1 Sept' 2013
2.	R V College of Engineering, Bengaluru	Assistant Professor Department of E & I	Jan 2011 - 30 August 2013
3.	R V College of Engineering, Bengaluru	Medical Officer	Sept 2005 - Dec 2010
4.	Ministry of Labour, Government of India	Medical Officer	Nov 2003 - 30 August 2005
5.	Department of Neurology, Manipal Hospitals, Bengaluru	Resident Doctor	Feb - Nov 2003
6.	Bangalore Hospital	ICU Resident Doctor	June - Dec 2002

Publications & Patents

Journal Publications

1. D Mahesh Kumar, Prasanna Kumar S.C, B.G Sudarshan and Yadhuraj S.R, 'A Study on Impact of Alcohol Among Young Indian Population Using HRV Analysis, *International Journal of Computer Science, Engineering, and Information Technology (IJCEIT)*, Vol. 4, No.4, August 2014 Page No.55-65.
2. D Mahesh Kumar, S C Prasanna kumar, B G Sudarshan, Jayadevappa D, 'Heart Rate Variability Analysis: A Review' *International Journal of Advance Research in Science & Engineering (ISSN2319-8354)*, Volume 03, Issue 01, January 2014 Page no 49-64.
3. D Mahesh kumar, Prasanna kumar S.C, B.G Sudarshan, Yadhuraj S.R , 'Analysis of HRV to study the effects of tobacco on ANS among young Indians, *IAEME*, Volume 5, Issue 10, October (2014), pp. 65-73
4. Hemanth Kumar.V, B.G Sudarshan, S C Prasanna kumar, 'A Review of Different Analyzing Methods to Extract HRV Data' (*IJCTT*) - volume4 Issue4 -April 2013, pp.951-954.
5. Sanjeev kumar, S.C. Prasanna kumar , B.G. Sudharshan, ' Estimation of arterial stiffness by using PPG signal: A review' , volume 4 issue 5-May 2013, pp 1362-1365.
6. Raveendra Hegde, B G Sudarshan, S C Prasanna Kumar, Hariprasad S A, B S Satyanarayana, 'Technical Advances in Fall Detection System – A Review', *IJCSMC*, Vol. 2, Issue. 7, July 2013, pp. 152 – 160.
7. TP Mithun, Sudarshan BG and Abhilashagouda Karigoudar ' Enhancement of X – Ray by image: A Review' (*IJCSEITR*), vol. 4, issue 3, Jun 2014, 1-6, pp. 1-6
8. D Mahesh kumar, Prasanna kumar s, B.G Sudarshan and Yadhuraj S. 'HRV analysis for the study of neurological and cardiac effects of alcohol on youth of India (*IJCSEITR*)', Vol. 4, Issue 5, Oct 2014, pp. 117-124
9. B.G.Sudharshan, S.C Prasanna Kumar, Shashiraj yadav , A Review of various technologies and transmission modes for design and development of a transmission enabled glucometer, (*IJRET*)" volume: 03 issue: 06 | jun-2014, pp. 448-450
10. RaveendraHegde, B.G.Sudarshan, SC.PrasannaKumar, .B S Satyanarayana, 'Design and development of fall detector using fall Acceleration', *International Journal of Research in Engineering and Technology*, Volume 2 Issue 8-August 2013 pp 57-61.
11. Vidyashree, B S Sathyanarayana, B.G Sudarshan, S C Prasanna kumar, 'A review paper on Portable ECG System', *The Board of International Journal on Innovative Research and Development*, Volume

- 2 Issue 3 May 2013, pp. 1262-1277
12. Hemanth Kumar.V, B.G Sudarshan, S C Prasanna kumar, 'A Review of Different Analyzing Methods to Extract HRV Data' *International Journal of Computer Trends and Technology* ,Volume 4 Issue 4 –April 2013, pp. 951-954.
 13. S.C.Prasanna Kumar, B.G.Sudarshan, Priyanka, ' A review on different algorithms adapted for image enhancement with Retinex based filtering methods' *International Journal of Innovative research & development*, Vol 1, Issue 6, Sep 2012
 14. S.C.Prasanna Kumar, B.G.Sudarshan, Priyanka, 'Development of algorithms for high resolution Retinex for image enhancement' , *International Journal of Innovative research & development*, Vol 1, Issue 11, Sep 2012
 15. S.C.Prasanna Kumar, B.G.Sudarshan, Anupama, 'A review of different image diagnosing methods', *International Journal of Innovative research & development*, Vol 1, Issue 5, Sep 2012.
 16. S.C.Prasanna Kumar, B.G.Sudarshan, Anupama, ' Wavelets Based Image dinoising implementation' , *International Journal of Innovative research & development*, Vol 1, Issue 11, Sep 2012.
 17. B.G Sudarshan, Venkatesh S, Manojavitvam – LabVIEW based Thought Controlled Wheelchair for Disabled People, (IJERT) ISSN 0974-3154 Volume 6, Number 1 (2013), pp. 153-160
 18. N. K. Vidyashree ,B. S. Sathyanarayana, S.C. Prasanna Kumar, B. G. Sudarshan, A Review On Design Of Portable ECG System, [Volume 2, Issue 5, May 2013](#), pp 1262-1277
 19. Mahesh Kumar, S C Prasanna Kumar, B G Sudarshan, D Jayadevappa, Heart rate variability is a noisy time series having self-similar and self-affine characteristics, *IJEEE*, Vol. No.1, Issue No. 2, July-Dec 2009, pp. 23-37
 20. Sudarshan B.G, Sugandhigopal, Interference with cardiac pacemaker due to cellular phones I(IETS) ISSN: 0974-3596 | April '09 – Sept '09 Volume 1, Issue 2, pp289-291
 21. Pushpa Agrawal Karan Mehtta Pooja Vashissht Sudarshan Preethi Bhat B V Goutham Vishnu "Green synthesis of silver nanoparticles and their application in dental filling material" *IJSRSET* Vol. 3, Issue 6, June 2014, pp 13038-13052
 22. Sudarshan B.G, karthik Mohan Rao Design and development of real time respiratory rate monitor using non-invasive biosensor, *IJRET*, volume 4 issue 6 June -2015, pp. 437-442
 23. Sudarshan B.G, Krthik Mohan Rao, A review on different technical specifications of respiratory rate monitors *ijret* volume 4, issue 4 Apr-2015, pp. 424-429
 24. Ashutosh A P and B.G. Sudarshan, 'A Review of Materials and Components for Developing a Smart Fall Detecting System', *International Journal of Multidisciplinary and Current research*, Vol.3 (March/April 2015) pp 275-280, 2015.
 25. Ashutosh A P and B.G Sudarshan, Materials, Components and Simulation for Developing a Smart Fall Detecting System' *TEQIP-II INITIATIVE National Conference on "Research Challenges in Power, Control, Communication and Instrumentation leading to Sustainable Technologies [NCPCCI-15]*, R V College of Engineering 24- 25 April 1
 26. Yadhuraj S. R, Dr. Sudarshan B.G and Dr. S.C Prassana Kumar, "A Review on Different Methods to Analyse HRV and its Correlation to Various Diseases Affecting Autonomic Nervous System", *Global Journal of Engineering Science and Research*, 2(8): August 2015.
 27. Yadhuraj S.R, Dr.Sudarshan B.G, Dr. Prasanna Kumar S.C, "GUI Creation for Removal of Motion Artifact in PPG Signals", 2016 International Conference on Advanced Computing and Communication Systems, IEEE-Conference.
 28. Yadhuraj S.R,Sudarshan B.G, Prasanna Kumar S.C, Mahesh Kumar D, "Analysis of Linear and Non-linear parameters of HRV for opting optimum parameters in wearable device", *Second International Conference on Large Area & Flexible Microelectronics, Materials Today-Elsevier*.
 29. Yadhuraj S R, Satheesh Babu Gandla, Sudarshan B.G, Prasanna Kumar S.C, "Preparation and Study of PDMS Material", *International Conference on Smart Engineering Materials, Materials Today-Elsevier*.
 30. Yadhuraj S.R, Sudarshan B.G, Prasanna Kumar S.C, Mahesh Kumar D, "Study of PDMS Material for ECG Electrodes", *Second International Conference on Large Area & Flexible Microelectronics-2016, Materials Today-Elsevier*
 31. Yadhuraj S.R, Sudarshan B.G, Prasanna Kumar S.C, "Extraction and Study of Heart Rate Variability

- (HRV) Parameters in Various Diseased Conditions”, Vol-04, Issue-10, Jan 2019, International Journal for Research in Engineering Application & Management (IJREAM)
32. Yadhuraj S.R, Sudarshan B.G, Prasanna Kumar S.C, “GUI Using MATLAB for PTT and HRV Analysis for Detecting Early Changes in Physiological Variables”, Volume 4 Issue 2, Feb 2019, International Journal of Advanced Scientific Research and Management.
 33. Sharada suresh dambal, Dr Sudarshan B.G, Dr Mahesh kumar “A Labview approach for detection of congestive heart failure” Design engineering, year 2021, issue 7,page no 3380-3390.
 34. Sharada Suresh dambal, Dr Mahesh kumar, Dr Sudarshan B.G “Premature ventricular contraction classification based on spiral search – manta ray foraging and Bi-LSTM” International journal of intelligent engineering and systems” year 2022, volume 15,no 6, page no 1-10.**Q-2 Journal**
 35. Sharada suresh dambal, Dr Sudarshan B.G, Dr Mahesh kumar “Lab VIEW Based GUI Approach for the Detection of Premature Ventricular Contraction (PVC)” year 2022, Computer integrated and manufacturing systems (CIMS)volume 28, no 11, page no 634-644. **Q-3 Journal**
 36. Sharada suresh dambal, Dr Mahesh kumar, Dr sudarshan B.G “Statistical Analysis On Heart Rate Variability (HRV) Features To Detect Congestive Heart Failure”Journal of pharmaceutical and negative results, year 2022, volume 13,issue 7,page no 6764-6772.-**Q-3 Journals**
 37. Sharada suresh dambal, Dr Mahesh kumar, Dr sudarshan B.G “A Hybrid Feature Dimension Reduction and SVM for a Classification of Heart Rate Variability” International journal of intelligent engineering and systems” year 2023-**Q-3 Journal**.

Conference Papers

International Conferences

1. Sudarshan B G, A Review on Electromagnetic Interference on Cardiac pacemakers, presented and published at international conference on Emerging Technologies and Applications in Engineering, Technology and Sciences, held on 13-14 January 2008
2. Sudarshan B G, Heart rate variability; A review paper presented in an International Conference in 2011, International Conference on Signal Processing, Communication, Computing and Networking Technologies held on 21-22, July 2011.
3. Nitya N. Kulkarni, B. G. Sudarshan, Nagaraja G. S., S. C. Prasanna Kumar and S. Venkatesh, “Comparative Study of Deep Learning Models to Classify Arrhythmia”,8th International Conference on Computational Systems and Information technology for Sustainable Solutions (CSITSS) 2024.

National Conferences

1. Sudarshan B G, Electromagnetic Interference due to Mobile Phones on Artificial Cardiac Pacemaker Patients, XXXII National Systems Conference, 03-11-2008, at Roorkee
2. Sudarshan B G, HRV under stress using two different methods of non-linear analysis in a national conference held at Dr. AIT WIRELESS CONTROL AND Communication technology on apr28-29.
3. Sudarshan B G, understanding autonomic and dynamics under stress using non-linear analysis of data page no page no152-155 National conference on emerging trends in bio-medical signal processing 26feb -2011

Patents **[Filed / Published / Granted]**

Sl no	Invention Title	Granting Authority	Patent NO	Application no	Date of Filing	Date of Grant
1	SYSTEM & DEVICE FOR Detecting Human Fall	Indian patent office	432493	201641026462	03/08/2016	22/05/2023
Applicant: RV College of Engineering						
Inventor: SUDARSHAN B.G, ASUTOSH A.P.						

Sl no	Invention Title	Granting Authority	Patent NO	Application no	Date of Filing	Date of Grant
1	METHOD AND APPARATUS FOR CONTINUOUS MEASUREMENT OF BLOOD PRESSURE	Indian patent office	480210	201741002255	27/07/2018	11/12/2023
Applicant: RV College of Engineering						

eri ng
In ve nt or s: SU DA RS HA N B. G, G O VE RD HA N R.

PATENTS PUBLISHED

SI no	Invention Title	Granting Authority	Patent NO	Application no	Date of Filing	Date of Published
1	A passive hand Operated lower extremity exoskeleton for Climbing stairs	Indian Patent office		202241028671A	18-05-2022	24-11-2023

Ap pli ca nt : RV Co lle ge of En gi ne eri ng
In ve

nt
or
s:
SU
DA
RS
HA
N
B.
G,
Dr.
H.
N.
Na
ra
si
m
ha
M
ur
th
y,
Sri
dh
ar.
R,
Ga
ng
ad
ha
r
An
ga
di.

R & Grants & Consultancy Projects

Ongoing & Completed Research Projects

- **Pulselife: Multiparameter Diagnostic Device** – Funding Agency: DST Nidhi Prayas AIC JIT, Duration: 2025-ongoing, Role: Mentor, Amount: Rs. **7,00,000/-**
- **Device for ANS Dysfunctioning using HRV analysis** – Funding Agency: DST Nidhi Prayas SJCE-STEP, Duration: 2024-2025, Role: PI, Amount: Rs. **7,00,000/-**
- **Elevate Startup** – Funding Agency: Govt. of Karnataka, Duration: 2020 – on going, Role: Co-PI, Amount: Rs. **30,00,000/-**

- **Stress and Associated Diseases among Bangalore City Police Personnel** – Funding Agency: BPR&D, Duration: 2013 – 2017, Role: PI, **Amount: Rs. 4,95,000/-**
- **Ergonomic Intervention on Labour Productivity & Health Parameters of Women in Garment Industries and Remedial Measures** – Funding Agency: UGC, Duration: 2017 – 2019, Role: Co-PI, **Amount: Rs. 11,25,000/-**
- **Development of Osteoporosis Estimation Device** – Funding Agency: DSIR, Duration: 2021 – 2023, Role: PI, **Amount: Rs. 18,04,000/-**

Professional Memberships

- Karnataka Medical Council

Awards & Recognitions

- Unisys Innovation Program award (UIP-16), Unisys, 2025, Mentor the of winning project, “Quantum Neural Network for Brain Tumor MRI Classification”, **Amount: 3,50,000/-**

Student Supervision

- **Ph.D. Candidates:** 04 (03 – PhD Degree Awarded)
- **M.Tech/M.Sc. Students:** 15
- **Undergraduate Research Mentees:** 30

Professional Roles

- **Editorial Board:** RV Journal of Science Technology Engineering Arts and Management (RVJSTEAM).
- **Chair/Committee Member:** Panelist in the Panel Discussion Event in International Society of Gene and Cell Therapy And AIML-BIO 2024.
 - Reviewer for papers and Best PhD Award at CSITSS 2024.
- **Industry Advisor:** Infodoct-LLP

Teaching

Core Courses:

- MBT301A2, Human Diseases and Diagnostic Technology, 1st Semester PG
- MCV325DD, Industrial Safety and Health, 2nd Semester PG
- 21AS74HE, Aviation Medicine, 7th Semester UG

Professional Roles:

Responsibilities:

- **Academic:** Co-ordinator for Center for Healthcare Technologies Research.
- **Administrative:** Co-ordinator and Incharge of Center for Healthcare Technologies Research. Research Advisory Committee member of RVCE.

Ethical Clearance Committee member of RVCE.

External Connect

- Ethical Clearance Committee member of Kalabhairaveshwar Ayurvedic Medical College, Bangaluru.
- Screening committee member of Private University sanctioned by Karnataka State Higher Education Council.