

Shyamkant Wasudeorao Anwane

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Born: April 23, 1970—Amravati, India

President, IAPT Sub-RC-08 E (Vidarbha) (Dec 2023-Dec 2024)

Executive Council Member, IAPT RC-08 (Maharashtra) (Dec 2023-Dec 2024)

Associate Editor, IAPT Bulletin ISSN 2277-8950 (March 2024)

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Web of Science Researcher (publons) ID: AAT-5418-2021

Google Scholar: Citations **89**, *h*-index **5**, *i10*-index **4**

ABC ID: **239-592-072-354**

UDEMY Instructor: 5385 students enrolled across the globe for THREE Courses having rating: 4.70 with 271 reviews <https://www.udemy.com/user/shyamkant-w-anwane/>

Positions held (28 Yrs teaching & 4 Yrs Research)

- 2020-contd.** **Professor**, Department of Physics SSES's SCIENCE COLLEGE, Nagpur.
- 2011-2020** **Associate Professor**, Department of Physics SSES's SCIENCE COLLEGE, Nagpur.
- 2003-2011** **Lecturer**, Department of Physics SSES's SCIENCE COLLEGE, Nagpur.
- 2003** Selected for the post of Lecturer by **Maharashtra Public Service Commission** for Government Colleges in Maharashtra State but differed to join.
- 1999-2003** **Lecturer**, Department of Applied Physics, Anuradha Engineering College, Chikhli (Buldana).
- 1996-1999** **Lecturer**, Department of Applied Physics, G H Rasoni College of Engineering, Nagpur.
- 1992-1996** **Research Scholar**, PGTD Physics, RTM Nagpur University, Nagpur.

Education

- 2000** **Ph.D.** in *Physics* from RTM Nagpur University, Nagpur for thesis entitled *Development of Silver Sulphate Based Solid Electrolytes from Electrochemical Gas Sensor Point of View*.
- 1992** **M.Sc.** in *Physics*, Amravati University, Amravati.
- 1990** **B.Sc.** in *Physics, Electronics & Mathematics* from Shri Shivaji Science College, Chikhli-Buldana affiliated to Amravati University, Amravati.

Research

- 1** **Quality Parameters** 23 Research Papers - National/International repute with : *h index=5, i10 index=4, Overall number of citations=89*.
- 2** **Supervising** 03 Students for Doctoral Degree in Physics under RTM Nagpur University. **Awarded: 02**, Submitted:00, Working:01
- 2022** **Best Researcher Award** was conferred among all staff members in the parent institute for contributions during academic year 2020-21
- 1993-1996** **Senior Research Fellowship** was awarded **TWO** time by Council of Scientific and Industrial Research, New Delhi.

University level assignments and recognition

- 1 **RTMNU** Involved in University level examinations in the subject of Physics for UG and PG, administrative committees like (i) Local Enquiry Committee (ii) expert on selection committee of appointments of teachers, (iii) Board of Studies.

Foreign travel on academic ventures

- 2015 *International Conference on Advances in Functional Materials* at Stony Brook University, New York, **USA** (29th June-3rd July 2015).
- 2013 *Advanced Materials World Congress*, Cesme, Izmir, **TURKEY** (16-19 Sept, 2013).
- 1995 *10th International Conference on Solid State Ionics* at the Department of Physics, National University of Singapore, **SINGAPORE** (3-8 Dec, 1995).

MAPLE Ambassador

- 2018-2022 Nominated by Binary Semantics Bangalore associated with MapleSoft, Waterloo-Canada on the **Board of MAPLE Ambassador** for SAARC region to inspire and educate others about the benefits that Maple brings to STEM Education.
- 2023-2025 Nominated by Binary Semantics Bangalore associated with MapleSoft, Waterloo-Canada on the **Board of MAPLE Ambassador** for SAARC region to inspire and educate others about the benefits that Maple brings to STEM Education.

SPOC SWAYAM NPTEL Local Chapter

- 2024 Running SWAYAM NPTEL Single Point of Contact **SPOC** for Local Chapter at **Shri Shivaji Education Society Amravati's SCIENCE COLLEGE, Congress Nagar NAGPUR.**

Membership of Professional Bodies

- 2023 **President**, Sub-Regional Council of Maharashtra for Vidarbha Region (SRC-08 E) Indian Association Physics Teachers IAPT (Since Dec 2023)
- 2023 **Member**, EC Regional Council of Maharashtra (RC-08) Indian Association Physics Teachers IAPT (Since Dec 2023)
- 2022 Life Member, IAPT (L9058)
- 2016 Member, King Edward Memorial Society, India
- 2015 Life Member, International Association of Advanced Materials, Sweden
- 2015 Life Member, Organization for Industrial, Spiritual and Cultural Advancement-International, Japan
- 2015 Life Member, Society for promotion of Materials Science, Nagpur.
- 1995 Life Member, Indian Solid State Ionics Society, BHU Varanasi
- 1991 President, Physics Society, Vidarbha Mahavidyalaya, Amravati
- 1990 Secretary, Physics Society, Vidarbha Mahavidyalaya, Amravati

Knowledge up-gradation through e-learning resources

- 2022 Completed a 2.5 hrs **Udemy Course** *15 Awesome Ways To Promote Your Udemy Course - Unofficial* conducted by the instructor Dave Espino (21st January 2022).
- 2022 Completed a 3.5 hrs **Udemy Course** *Differential Equations in Depth* conducted by the instructor Dmitri Nesteruk (17th January 2022).
- 2021 Qualified with 87.05% score in a 8 weeks **COURSERA Course** *Introduction to Complex Analysis* conducted by **Wesleyan University, Connecticut, United States** (15-06-2021).
- 2020 Qualified 8 weeks **NPTEL** online certification course that is AICTE Approved FDP Course (UG Level) on *Fluid Mechanics* conducted by **IIT Guwahati under SWAYAM** (01-09-2020 to 30-11-2020).
- 2020 Qualified with 89% score in a 4 weeks **COURSERA Course** *From the Big Bang to Dark Energy* conducted by **University of Tokyo, JAPAN** (15-09-2020).
- 2020 Qualified with 89% score in a 10 weeks **COURSERA Course** *Astro 101: Black Holes* conducted by **University of Alberta-CANADA** (28-08-2020).
- 2019 Completed 8 weeks AICTE Approved FDP Course (PG Level) on **Introduction Statistical Mechanics** conducted by *IIT Kharagpur under SWAYAM* (18-10-2019 to 16-11-2019).

Funded Projects/Fellowship

- 2013-2018 **Coordinator**, *Career Oriented Course on Mathematical Modelling using MAPLE* funded by UGC, New Delhi under Career Oriented Course. (Grant Mobilized 10 Lacs)
- 2009-2011 **Principal Investigator**, MRP entitled *Interactive Physics by Simulations* funded by UGC, New Delhi. (Grant Mobilized 1.55 Lacs).
- 1995-1996 **Senior Research Fellow**, CSIR, New Delhi (Independent Project entitled *Engineering of $\beta - Ag_2SO_2$ for SO_2 electrochemical gas sensors -1996*).
- 1993-1995 **Senior Research Fellow**, CSIR, New Delhi (Research Project entitled *Test and Utilization of Developed Solid Electrolyte for SO_2/SO_3 gas sensors - 1994*).

Research involvement

Involved in research in areas that include; Solid State Ionics • solid-state electrochemical SO_2 gas sensors • Relativity • Simulation of concepts in Physics Teaching using **MAPLE**.

PH.D. SUPERVISOR: TWO STUDENTS AWARDED & ONE WORKING

1. Supervisor for Mrs Chaitali Pangul Keche -*Photoluminescence Properties of Rare Earth Ion Doped ZnO Nanofibers* (Registered on 14/05/2015, Thesis submitted on 3/8/2019, Viva-Voice on 17-12-2021, **AWARDED** doctorate vide Notification RTMNU/Ph.D.(Cell)/17/1927 03-01-2022).
2. Supervisor for Mrs Ruhi Naz- *Understanding of oxy-ion conductivity of $La_{2-x}A_xMo_{2-y}B_yO_{9-\delta}$ system: in view of electrolyte for IT-SOFCs* (Registered on 12-01-2017 and thesis **submitted** on 30-8-2021, **Viva Voce** on 17-4-2023, **AWARDED** doctorate vide Notification No.: RTMNU/Ph.D.(Cell)/01/660 dated 04-05-2023).
3. Supervisor for Mr Ruchir Kumar- *Synthesis and characterization of transition metal complexes as emissive layer for highly efficient OLED* (Registered on 8-5-2019).

INSTRUCTOR on Udemy - 5385 Students across the globe

Udemy link to click: <https://www.udemy.com/courses/search/?src=ukw&q=Shyamkant+Anwane>

Students Enrolled 5385, Course Rating 4.85, TOTAL Reviews: 271

2024 UdemY has recently in August 2024 approved and launched the course titled **Bootcamp to Complex Analysis** on August 11, 2024. This course is designed to equip you with essential knowledge in just 9 hours of video lectures subdivided in 5 Sections. This course A Bootcamp to Complex Analysis provides an introduction to the theory of complex functions of a complex variable. It opens by introducing the complex plane, followed by the algebra and geometry of complex numbers. Like in Real Analysis, we will make our way through algebraic processing, topology, complex dynamics, Julia sets, the relationship of exponential function and the imaginary unit i , analytic function etc. **1009 STUDENTS 5.00 RATING 1 REVIEWS in Sept 2024.**

2024 UdemY has recently in July 2024 approved and launched the course titled **Bootcamp to Relativistic Quantum Mechanics** on July 2, 2024. Whether you're a beginner or pursuing an undergraduate/postgraduate program, this course is designed to equip you with essential knowledge in just 4 hours of video lectures. Through this course, we will delve into the fundamental concepts that make up the cornerstone of modern physics, famously referred to by Richard Feynman as "the jewel of physics". **1099 STUDENTS 4.93 RATING 15 REVIEWS in Sept 2024.**

2022 UdemY has recently launched the course **Boot Camp to Nuclear Physics**, which went live on May 23, 2022. This course caters to both beginners and undergraduate students enrolled in Physical Sciences and Medical Sciences programs. Featuring a total of 48 lectures spread across 7 sections, the course offers approximately 10 hours of video lecture content. Each section is complemented by a quiz to reinforce learning and assess comprehension. Covering a wide range of topics traditionally included in undergraduate programs at universities, participants can expect a comprehensive exploration of nuclear physics. Designed to appeal to physics enthusiasts and individuals with a passion for the subject, this online program provides an excellent opportunity for amateurs and enthusiasts to deepen their understanding and satisfy their curiosity about nuclear physics. **1700 STUDENTS 4.8 RATING 133 REVIEWS in Sept 2024.**

2021 UdemY has recently approved and launched the course titled **Bootcamp to Special Theory of Relativity** on November 23, 2021. This course caters to both beginners and undergraduate students interested in delving into the subject. The course commences with an exploration of the historical background behind the formulation of the special theory of relativity, culminating in the derivation of Einstein's iconic equation, $E = mc^2$. It is designed to comprehensively cover the syllabi of various universities, ensuring alignment with the interests of students. Traditional topics integral to the subject are systematically addressed throughout the course. Spanning over 8.5 hours of video lecture content, the course is divided into four sections comprising a total of 27 lectures. Each lecture is followed by a quiz to reinforce learning and assess comprehension. Additionally, the final lecture introduces the Relativistic Lagrangian, facilitating a swift transition to the concepts of energy and relativistic momentum. **2522 STUDENTS 4.77 RATING 107 REVIEWS in Sept 2024.**

PhysicsPro Mobile App on Google Play Store

2018 The application serves as a platform for Physics education, catering to undergraduate and postgraduate students in the Science and Engineering faculties. It primarily offers video lectures along with supplementary notes provided in both PowerPoint (PPT) and Portable Doc-

ument Format (PDF). Our aim is to comprehensively cover the key topics outlined in the curricula set by Indian universities. Created by students themselves, this app is accessible for download on the Google Play Store:

<http://bit.ly/2PkcPGG>

Video Lectures available now: 34 hrs 50 min

(1) B E Sem–I Engineering Physics (BESI-2T) (9hrs 12 min), (2) TRANSIENT CURRENT (1hr 11 min), (3) AC CIRCUITS (1hr 24 min), (4) QUANTUM MECHANICS (4hrs 10 min), (5) GRAVITATION (2hrs 26 min), (6) SPECIAL RELATIVITY (2hrs 35 min), (7) STATISTICAL MECHANICS (5hrs 27 min), (8) SEMICONDUCTORS (4hrs 12 min), (9) CRYSTAL STRUCTURE (50 min) (10) ELECTROSTATICS & DIELECTRICS (3hrs 13 min), (11) FLUID MECHANICS (14 hrs), (12) TIME VARYING FIELDS (2 hrs), (13) COMPLEX NUMBERS (14 hrs), (15) BAND THEORY OF SOLIDS & SEMICONDUCTORS (4 hrs), (16) SIMPLE HARMONIC MOTION (4hrs)

YouTube Channel- to reach students at large

The You Tube channel <http://bit.ly/37UDXoq> or <https://www.youtube.com/@ShyamkantAnwane> offers about **160 Video Lectures** on a variety of topics in Undergraduate Physics. The major playlists are as following:

1. Nuclear Physics [UG Level, 48 Lectures 10 hrs]
2. Band Theory & Semiconductors [UG Level, 04 Lectures 4.5 hrs]
3. Simple Harmonic Motion [UG Level, 3.5 Lectures 6 hrs]
4. Complex Numbers [PG Level, 23 Lectures 16 hrs]
5. Differential Equations using Maple [Invited Talk in FDP-2020 Webinar, 1.5 hr]
6. Black Holes & Complementarity [Invited Talk in National Conference, 1 hr]
7. Special Relativity using Perplex Numbers [Research Level, 5 Lectures 1.5 hrs]
8. Quantum Mechanics [UG Level, 11 Lectures, 4 hrs]
9. Fluid Mechanics [UG Level Engg, 10 Lectures, 5.5 hrs]
10. Gravitation [UG Level, 6 Lectures, 2.5 hrs]
11. Quantum Mechanics [UG Level, 11 Lectures, 4 hrs]
12. Statistical Mechanics [UG Level, 5 Lectures, 5.5 hrs]
13. Time Varying Fields [UG Level, 13 Lectures, 4 hrs]
14. Electrostatics & Dielectrics [UG Level, 3 Lectures, 3 hrs]
15. MAPLE [Cert Course, 7 Lectures, 3.75 hrs]
16. Introduction to Black Holes [UG Level, 2 Lectures, 0.5 hr]
17. Crystallography [UG Level, 3 Lectures, 0.75 hr]

Innovative pedagogy-flipped classroom

In the academic session 2018-19 executed innovative plan to reach to maximum students through this CoC in the form of **Flipped e-Classroom**. We have uploaded SIX Video Lectures on Maple on YouTube which the students should listen to before reporting to the Maple Laboratory for hands-on experience. Study material (books and Maple worksheet) was made available to students through Google drive.

Design of New Curriculum

- 2023-28 *Co-opted on Board of Studies* as a member for **Applied Sciences and Humanities (0119)** under the **Faculty of Science and Technology** under category 40(2)(a) by RTM Nagpur University, Nagpur.
Note: Category 40(2)(a)- Head of the department who is recognized for imparting teaching to postgraduate students in an affiliated college or a recognized institution having post graduate teaching in that subject. RTMNU Notification No: Acad./BOS-Co-op/2399(A) dated 18 March 2023.
- 2020-23 *Nominated on Board of Studies of Physics* as a member for three years at Bajaj College of Science Wardha which is an autonomous college.
In a Career Oriented Course funded by UGC, designed Syllabus and Schemes of Examination for following two programme. RTM Nagpur University has approved these courses which are in functioning from 2012-13.
- 2012 *Certificate Course on Mathematical Modeling using Maple* for FY B Sc students since 2012-13 vide letter No BCUD/P/2012/771 dt 13/04/2011.
- 2016 *Diploma Course on Mathematical Modeling using Maple* for SY B Sc students since 2015-16 vide letter No RTMNU/BCUD/P/2016/266 dt 08/02/2016.

Refresher/Orientation Courses

- 2010 *Refresher Course in IT Applications* (Computer Science, Physics, Mathematics, Electronics, and Statistics) at UGC Academic Staff College, Nagpur University, Nagpur and qualified with 'A' grade (22-02-2010 to 14-03-2010).
- 2008 *Refresher Course in IT Applications* (Computer Science, Physics, Mathematics, Electronics, and Statistics) at UGC Academic Staff College, Nagpur University, Nagpur and qualified with 'A' grade (10-12-2008 to 30-12-2008).
- 2005 *50th Orientation Course* at UGC Academic Staff College, Nagpur University, Nagpur and qualified with 'A' grade (01-10-2005 to 28-10-2005).
- 2004 *Short Term Training Programme (STTP)* on Computational Techniques in Chemical Engineering at Maharashtra Academy of Engineering, Alandi, PUNE (13 to 18 Dec 2004)

Examinaion Work

- 2023 *Chief Supervisor* at Center No 100 Shri Shivaji Science College, Nagpur for Summer 2023 RTMNU Examination (22-05-2023 to 14-08-2023).
- 2002 *Co-Office* at Jijamata College of Arts, Commerce and Science for Summer 2002 Amravati University, Amravati.

Contribution to development of Shivaji Science College, Nagpur

1. In the capacity of Head of the Department, Leading development of Department that includes;(i) **Sophisticated Instrumentation Laboratory** (ii) **Channelized working condition of the UG and PG lab** (iii) **Research Center Recognition and maintain it.** (since Jan 2018)
2. Coordinator, **College with Potential for Excellence** (since 2004)
3. Involved in the UGC schemes for **College Development Grants, Girls Hostel, Innovative Programme, Nodal office-AISHE 2015-16-2020-21.**
4. **Coordinator**, UGC Sponsored **Career Oriented Course - Mathematical Modeling Using Maple** from 2013-14. (Grant 10 Lacs-ON-GOING)
5. **Principal Investigator**, Minor Research Project entitled Interactive Physics by Simulations is sanctioned by UGC - WRO, Pune. Ref UGC-WRO 47-1233/09 Grant mobilized Rs 1.55 Lacs. (COMPLETED)
6. Involved in **generating consultancy** through Materials Characterizations of the facility with the aid of **Bruker Alpha FTIR, Shimadzu UV VIS Spectrophotometer UV-1800, Shimadzu Spectrofluorophotometer RF 5301PC and Agilent IMPEDANCE ANALYZER 4294A** (since 2021-22)
7. **Students Induction Programme (SIP)** The Students Induction Programme (SIP) is an initiative designed to help new students transition smoothly into an educational institution. Since UGC developed a mandate in Higher Education and included SIP by training teachers our institute also followed it and since then conducted a week long programme every year. As a coordinator of SIP invited eminent speakers in the town and arranged teacher-students interactions formally through this programme. (since 2019-20 to 2023-24)
8. **Shivaji Space Explorer Club**, for alumni and existing students having interest in Sky Watching activity. Malhar Kendurkar – alumni of Shivaji Science College-Nagpur – An Observational Astrophysicist and is working as President of Prince George Astronomical Observatory at BRITISH COLOMBIA CANADA inaugurated Shivaji Space Explorer Club on 15th December 2021 by delivering a webinar on “Global Supernova Search Team - GSNST - A Sky Survey to Search for Astronomical Transients using an Array of Robotic Telescope”. Sky watching was organized on 8th September 2022.
9. Involved in **generating consultancy** through Materials Characterizations of the facility with the aid of **Bruker Alpha FTIR, Shimadzu UV VIS Spectrophotometer UV-1800, Shimadzu Spectrofluorophotometer RF 5301PC and Agilent IMPEDANCE ANALYZER 4294A** (since 2020-21)

Contribution in Organization of Seminar/Conference/Workshop:

1. **Shri Shivaji Science College, Nagpur** in association with the **Indian Association of Physics Teachers (IAPT)** Sub-Regional Council for Vidarbha SRC-08 E organized **02 days Workshop** on “**Computer Interfaced Physics Experiments using ExpEyes-17/SeeLab 3**” from 28th-29th August. In this workshop 37 participants were enrolled wherein prominent resource persons; (i) Mr. V. Satyanarayana, Inter-University Accelerator Centre, New Delhi (ii) Prof. Vandna Luthra, Gargi College, New Delhi guided the participants. In alignment with NEP 2020, RTMNU has revamped and introduced

a new syllabus for all courses, incorporating various proposed elements. For the B.Sc. Semester-I Physics major, the Vocational Skill Course VSC-1 (Electronics and Electrical Components) includes a modern tool developed by the PHOENIX project at the Inter-University Accelerator Centre, New Delhi. This tool, ExpEYES-17/SeeLab 3, integrates the real-time control and measurement capabilities of microcontrollers with the flexibility of Python programming for data analysis and visualization. Recognizing that this innovative tool may be new to educators, we are organizing a "Training-of-Teachers" workshop to bridge the gap and ensure effective implementation.

2. The **Indian Association of Physics Teachers (IAPT)** Sub-Regional Council for Vidarbha SRC-08 E and Association of All Computer Science Teachers (AACST) jointly organized **21 days Workshop** from 10th June to 5th July 2024 on ***Developing AI applications in the Physics domain with Python***. In this workshop 134 participants were enrolled for 21 lectures of 90 min followed by 18 assignments. In this ambitious project of imparting knowledge of developing AI applications using Python among 134 participants were ranging from ex-vice-chancellor, professors, teachers, research scholars and students from STD X to PG including IAPT President Prof P K Ahluwalia.
3. Organized One Day National Seminar in ***Online*** mode on **Life and Work of S N Bose** which is a joint venture of **IAPT Sub Regional Council of Maharashtra (VI-DARBHA) SEC-08 E** and **Department of Physics, SESA's SCIENCE COLLEGE, Nagpur** wherein resource persons were Prof Sreerup Raichaudhuri (TIFR-Mumbai), Prof Rajinder Moudgil (Kurukshetra University) and Prof P K Ahluwalia (Himachal Pradesh University). About 100 students and teachers participated in this Seminar. 27 January 2024.
4. One of the Organizing Secretaries **International Conference on Recent Trends in Multidisciplinary Research** Jointly Organized by *Kalantri Mahavidyalaya, Chandrapur* and *Shri Shivaji Science College Nagpur* during 14-15 January 2023.
5. Participated in **Indian Science Congress Nagpur 2023** Organized by *RTM Nagpur University, Nagpur* during 03-07 January 2023.
6. Participated by **Chairing a Keynote Address** on 10th October 2022 in an National Symposium on **Functional Materials for Sustainable Development (FMSD-2022)** during 10-12 October 2022 - jointly organized by National Academy of Science-India (NASI) and RTM Nagpur University to mark *Ajadi Ka Amrut Mahotsav* and *Centennial Celebration* of RTM Nagpur University. Prof A. K. Tyagi, Divisional Director at BARC and Senior Professor at Dr. Homi Bhabha National Institute Mumbai delivered Keynote on Materials for Sustainable Development.
7. Participated by **Chairing a Technical Session** on 15th March 2022 in an International Conference on **Innovation in Science and Technology in Science, Technology, Agriculture, Humanities and e-commerce for Sustainable Ruler Development** during 14-15 March 2022 - Organized by Anand Niketan College, Warora.
8. Participated in the workshop **Training of Teachers (ToT) in Students Induction Programme (SIP)** during 6-8 June 2019 Organized by **University Grants Commission, WRO-Office Pune** at **Indian Institute of Science Education and Research (ISSER) PUNE**.
9. Participated in **National Conference on Science and Technology: Rural Development** during 27-28 November 2019 Organized by **Shri Shivaji Education Society Amravati's Science College, Nagpur**.

10. **National School on Computer Assisted Spectroscopic Data Interpretation Techniques** 7-11 Jan 2019: The Department of Physics Collaborated with the Department of Physics, RTM Nagpur University, Nagpur in organizing National School on Computer assisted spectroscopic data Interpretation Techniques during 7-11 January 2019 at the auditorium of National Bureau of Soli Survey, Amravati Road, NAGPUR. About 101 participants were registered from all over the country and deliberations were given by my eminent scientist. The School was inaugurated at the hands of Dr S M Yusuf, Head, Solid State Physics Division, Bhabha Atomic Research Centre, Mumbai.
11. Worked in the capacity of Co-convener of Indian Science Congress Association sponsored **National Conference on Science and Technology: Rural Development** held on 27-28 Nov, 2019, sponsored by ISCA at SSESAs Science College, Congress Nagar, Nagpur, India.
12. Worked on behalf of Organizing Committee of “**Trends and Challenges in Management of Academic Libraries in New Information Environment**” held on 20th September, 2014, sponsored by NAAC, at SSESAs Science College, Congress Nagar, Nagpur, India.
13. Worked on behalf of Organizing of “**Institutional Quality Improvement: Role of Governance, Leadership and Management**” held on 8 – 9 August, 2014, sponsored by NAAC, at SSESAs Science College, Congress Nagar, Nagpur, India.
14. Joint Organizing Secretary, **International Conference on Mathematical Sciences** December 28-31, 2012 at SSESAs Science College, Congress Nagar, Nagpur, India. In this 400 participants delivered about 368 deliberations that includes 27 foreign delegates.
15. Member, Organizing Committee, **National Conference on Nano Science and Technology**, organized by Shri Shivaji Education Society Amravatis Science College, Nagpur. (21-22 Feb 2011)
16. Member, Organizing Committee, **National Conference on Students Participation in Quality Enhancement in Higher Education** at SSESAs Science College, Congress Nagar, Nagpur. (22-23 December 2007)
17. Member, Organizing Committee, National Conference on **Post NAAC Accreditation Initiative for Quality Enhancement in Higher Education and Autonomy of Higher Education Institutions** at SSESAs Science College, Congress Nagar, Nagpur. (21-22 March 2005)
18. Member, Organizing Committee, UGC Sponsored **National Conference on Advanced Materials and Technology** organized by Department of Chemistry, Shri Shivaji Science College, Nagpur. (29-30 Dec 2009)
19. Convener, **Nexus 2000- A Paper Presentation Contest** in which 50 students from colleges in the state participated at Anuradha Engineering College, Chikhli Dist Buldana. (Feb 2000)

Invited as a resource person

Delivered webinar on “*Understanding General Relativity with Maple’s Visualizations: Equations and Tensors Simplified*” organized by **Binary Semantics Ltd. Bangalore**. About 100 individuals attended this Webinar in the capacity of being on the Board of MAPLE Ambassadors. (29th April 2024) [abc https://www.youtube.com/watch?v=bW_SJTT_Wjo&t=1071s](https://www.youtube.com/watch?v=bW_SJTT_Wjo&t=1071s)

- 2023 Delivered talk on “*Special Relativity using Perplex Numbers*” at the **37th Indian Association of Physics Teachers (IAPT) Conclave** Organized by **Jaipur National University** in association with **IAPT**. About 300 members of IAPT attended this programme at Jaipur-Rajasthan. (7-10 October 2023)
- 2023 Delivered Lecture on “*Estimation of the Lagrange Point L_1 in Sun-Earth system*” at the 2nd National Seminar on **Discovery and Detection of Gravitational Waves** Organized by **Jaipur National University** in association with **Indian Association of Physics Teachers (IAPT)**. About 200 students of UG and PG and 100 faculty members joined this programme in online and offline mode. (15/9/2023)
- 2023 Delivered Lecture on “*Entropy of Blackholes*” and inaugurated Physics Society at the Department of Physics, Shri Shivaji Education Society Amravati’s **SCIENCE COLLEGE, Amravati** and inaugurated the Physics Society. About 150 students of UG and PG participated. (9/9/2023)
- 2023 Delivered a invited talk on **Special Relativity using Complex Numbers** in “*37th National IAPT Convention*” Organized by **Jaipur National University, Jaipur**. (10-12 Oct 2023)
- 2023 Delivered a invited talk on **Estimation of Lagrange Point L_1** in “*2nd National Seminar on Discovery and Detection Gravitational Waves*” Organized by **Jaipur National University, Jaipur**. (15 Sept 2023)
- 2022 Chaired a session in “*National Symposium on Functional Materials for Sustainable Developments*” Organized by **National Academy of Sciences in India** at the Department of Physics, RTM Nagpur University, Nagpur. (10-12 Oct 2022)
- 2022 Delivered Lecture on “*Conflict of Principles*” and inaugurated Physics Society at the Department of Physics, Dr Babasaheb Ambedkar College, Nagpur to inauguration of Physics Society. About 450 students of UG and PG participated. (7/9/2022)
- 2021 Delivered Lecture on *Recent Trends in Research Methodology* and inaugurated Physics Society at the Department of Physics, Vidya Bharti Mahavidyalaya Amravati. About 120 participants attended. (27/02/2021)
- 2021 Delivered invited talk on “*Black Holes and Complementarity*” One Day National Level Webinar Universe, Black hole, Wormhole-A Bird’s Eye View, Organized by Department of Mathematics, Arts, Commerce & Science College, Arvi, Dist. Wardha (Maharashtra). About 400 participants attended. (01/02/2021) <https://youtu.be/FqmI-LoXjJc>
- 2020 Delivered invited talk on “*Differential Equations using Maple*” in the national level Webinar - FDP Program on Mathematical Modeling & Simulation Software Maple - MMSSM-2020 was organized in collaboration with Binary Semantics and Government College of Engineering, Nagpur, and explore the new ways of teaching in STEM education. About 370 participants attended. (29/07/2020) <https://bit.ly/3gsHCM9>
- 2019 Delivered lecture on *Black Holes* in Certificate Course in Basic Applications of Physics at Jawaharlal Nehru College Wadi, Nagpur. (18 Feb 2019)
- 2018 Delivered lecture on *Conflict of Principles - Boltzmann’s Law and Newton’s Law* and inaugurated Physics Society at M P Deo Dharampeth Science College, Nagpur. (7 Aug 2018)
- 2018 *Exploring MAPLE for Research & Learning Physics at Summer School of Physics* for UG and PG students organized by Shri Shivaji Science College, Amravati . (16 June 2018)
- 2012 *Quantum Chemistry-Applications of Schrödinger’s Wave Equations* for faculty members and students of M.Sc. I and II at S K Porwal College Kamptee, Nagpur. (8th Oct 2012)
- 2012 *Special Theory of Relativity* in a One Day Workshop on at SSES’s Science College, Congress Nagar, Nagpur. (16 Sept 2012)
- 2010 *How to make EMF easy* for Students and faculty and students of B.E. Electronics Engineering at Pankaj Laddhad Institute of Technology Buldana. (23rd August 2010)
- 2008 Series of lectures on *Quantum Confinement* for students of P G Diploma in Nanotechnology (Innovative Programme of UGC) at Shri Shivaji Science College, NAGPUR. (Oct-Nov 2008)
- 2003 *Super Ionic Conductors & Applications* during one day seminar at Shri Shivaji Science College, Chikhli Dist Buldana (July 2003)

Conferences Attended

- 1993-... Since 1993 attended more than THREE dozen conferences.
- 2024 Participated in TWO DAYS **IAPT Maharashtra State Convention 2024 and Conference on Physics Education under NEP 2020** Organized by at PDEA's Anantrao Pawar College, Pirangut, Pune. (13-14/01/2024)
- 2023 Participated in ONE DAY **National Symposium on NEP - A Global Perspective** for HEI Organized by MANTHAN - For Academia. (16/12/2023)
- 2022 Participated in FIVE DAY **FDP - Research for Teachers - Quantum Leading Way to Photonics** Webinar Series on Noble Prize in Physics 2022 . (10-14 Oct 2022)

Activities coordinated in IAPT SRCo8-E in Collaborations

1. **Shri Shivaji Science College, Amravati** in association with the **Indian Association of Physics Teachers (IAPT)** Sub-Regional Council for Vidarbha SRC-08 E organized **01 days Workshop on Training of Teachers** entitled "*Integrating Technology in Physics Experiments: Hands-on Workshop*" on 23rd September 2024.
2. **Shri Shivaji Science College, Nagpur** in association with the **Indian Association of Physics Teachers (IAPT)** Sub-Regional Council for Vidarbha SRC-08 E organized **02 days Workshop on Training of Teachers** entitled "*Computer Interfaced Physics Experiments using ExpEyes-17/SeeLab 3*" from 28th-29th August 2024.
3. **Prof. Rajendra Singh Science Exploratory (PRSSE), Nagpur** in association with the **Indian Association of Physics Teachers (IAPT)** Sub-Regional Council for Vidarbha SRC-08 E organized a talk on **Space and Effects of Microgravity** by "*Dr. Reshma Raut Dessai*" on 23rd August 2024.
4. The **Indian Association of Physics Teachers (IAPT)** Sub-Regional Council for Vidarbha SRC-08 E and Association of All Computer Science Teachers (AACST) jointly organized **21 days Workshop** from 10th June to 5th July 2024 on *Developing AI applications in the Physics domain with Python*. In this workshop 134 participants were enrolled for 21 lectures of 90 min followed by 18 assignments.

Publications

EDITORIAL

- 2024 Nominated on editorial board as an **Associate Editor** of the *Bulletin of INDIAN ASSOCIATION OF PHYSICS TEACHERS* - a monthly journal of education in Physics and related areas (ISSN 2277-8950).
- 2020 Nominated on editorial board of members of Science Publishing Group Journal, 1 Rockefeller Plaza NY USA. (Ref SJEDU dated 9/7/2020).

BOOKS-INTERNATIONAL

- 2021 Author of Reference Book **The Special and General Theory of Relativity** by KINDLE Direct Publishing, Amazon, USA. Binding: Hardcover. ISBN: 9798539250829, Pages: 253. Price US\$ 17 on <https://www.amazon.com/dp/B099TQL2C9>.

2020 Contributed a Chapter *Colour Tunable Photoluminescence from Samarium and Dysprosium Co-doped ZnO Nanofibers* in a Research Book **Proceedings of Second International Conference on Nano-Materials and Advanced Composites**, Springer Proceedings in Physics 242 edited by R.I.Murakami. Singapore: ISSN: 0930-8989, ISSN(electronic): 1867-4941, ISBN: 978-981-15-2293-2, ISSN (e-book):987-981-15-2294-9, doi: 10.1007/978-981-15-2294-9 link on www.springer.com/series/361.

2014 Contributed a Chapter *Solid Electrolytes – Principles & Applications* in a Research Book **Advanced Energy Materials**, Scrivener Publishing LLC edited by Ashutosh Tiwari and Sergiy Valyukh. Sweden: ISBN: 9781118686294 link on <https://bit.ly/2UxwSGH>.

2007 Author of Reference Book **Fundamentals of Electromagnetic Fields** by Infinity Science Press, USA. Binding: Hardcover. **Details:** EAN: 9781934015001, ISBN: 1934015008, Label: Infinity Science Press, Manufacturer: Infinity Science Press, Number Of Pages: 350. link on <https://amzn.to/3rtf4Zh>. Soft copy is available on <https://bit.ly/2Uq5R8g>

BOOKS-NATIONAL

2005 **A Course in Electromagnetic Fields**, New Delhi: BPB Publication, ISBN:81-8333-086-X. This book has been **recommended as a Reference Book** in the syllabus of B.E. II year Electronics, Electronics & Telecommunication Engineering by **SGB Amravati University, Amravati**. This book has also been recommended in the curriculum of B.Sc. Part-II (2012-13) Prospectus No. 2013122 Semester-III & IV OF B.SC.PART-II PHYSICS (3SPHY).

1997 **A textbook of Engineering Physics**, Pune: Nirali Prakashan. 2nd Edition published in July 2000 is **recommended in the syllabus of Amravati University** vide Notification No 70/2002 dated 11/6/2002 in Amravati University Gazette 2002 - Part Two -86.

JOURNAL SCOPUS INDEXED

1. *Exploring Kepler Problem using MAPLE* S.W.Anwane, R.S.Anwane **Resonance** (Accepted on 16.08.2024 ref no.: RES0541)
2. *A Lead-free Flexible Polymer/Ceramic Based Nanocomposites Thin Film for Electronic Application*, Shahin Sayyad, S. A. Acharya, S. A. Pande, Tanveer Quazi & S. W. Anwane, **Ferroelectrics** 616:1, 9-19 **2023**. DOI: 10.1080/00150193.2023.2269153
3. *Correlation of dynamical disorder and oxy-ion diffusion mechanism in Dy, W co-doped $La_2Mo_2O_9$ system: Electrolyte for IT-SOFCs*, Ruhi Nazz, Vishwajit M Gaikwad, Vasant Sathe, Shyamkant Anwane and Smita A Acharya, **Dalton Trans., ROYAL SOC OF CHEMISTRY** 2020, 49, 134,06-19**2020**, DOI:10.1039/d0d02954h, Impact factor: 4.174
4. *Synthesis and Photoluminescence study of Strontium salts with 2-Methyl-8-Hydroxyquinoline and 8-Hydroxyquinoline* C Ruchir Kumar, Y. M. Nimje and S.W.Anwane **Journal of Physics: Conference Series** IOP Publishing NANOMAT-2020 1644 **2020** 012053 doi: 10.1088/1742-6596/1644/1/012053
5. *Foucault's Pendulum Exploration Using MAPLE* S.W.Anwane, Y.S.Anwane, **Resonance** Vol. 24 Issue 6 June **2019** pp 661-679 DOI: <https://doi.org/10.1007/s12045-019-0824-2>
6. *Samarium doped ZnO nanofibers for designing orange-red light-emitting fabrics*, C.N.Pangul, S.W.Anwane, S.B.Kondawar **Materials Today: Proceedings** 15 **2019** 464-470, E-ISSN:2214-7853.

7. *Enhanced photoluminescence properties of electrospun Dy³⁺-doped ZnO nanofibres white lighting devices* **LUMINESCENCE**, C.N. Keche, S B Kondawar, S W Anwane **John Wiley & Sons, Ltd.** 2018;1-7. © 2018 ISSN:1522-7235 E-ISSN:1522-7243 DOI: 10.1002/bio.3513
8. *Solid Electrolytes – Principles & Applications* **Advanced Energy Materials**, Scrivener Publishing LLC edited by Ashutosh Tiwari and Sergiy Valyukh. Sweden: ISBN: 9781118686294 link on <https://bit.ly/2UxwSGH>.
9. *Electrical Properties of Barium Titanate dispersed Silver Sulphate* **Adv. Mat. Lett.** 4(4) Page- 300-309 **2013**. ISSN:0976-3961 E-ISSN:0976-397X. Impact Factor 1.93.
10. *Carbon nanotubes reinforced conducting polyaniline and its derivative poly(o-anisidine) composites* **Adv. Mat. Lett.** 4(1) Page- 35-38. ISSN:0976-3961 E-ISSN:0976-397X **2013**. Impact Factor 1.93.
11. *On Lattice Distortion by Isovalent cations in Silver Sulphate Solid Electrolyte*, **Adv. Mat. Lett.** 3(3), 204-212 **2012**. Impact Factor 1.93. ISSN:0976-3961 E-ISSN:0976-397X
12. *Aliovalent Yttrium added Silver Sulphate: A Promising Candidate for SO₂ Gas Sensor*, **Adv. Mat. Lett.** 3(2) Page- 77-81 ISSN:0976-3961 E-ISSN:0976-397X **2012**. Impact Factor 1.93.
13. *An Investigation On Ag₂SO₄:La₂(SO₄)₃ Binary System* **Pure and Applied Physics**, K Singh, **S W Anwane** and S S Bhoga Vol.37, No 4 **1999** pp255-258. Impact Factor 1.5
14. *A Study Of Iso- And Alio-Valent Cation Doped Ag₂SO₄ Solid Electrolyte* **Applied Physics A**, K Singh, S M Pande, **S W Anwane** and S S Bhoga 66 No 2, 205-215 **1998**. Impact Factor 2.171 (SCI Indexed)
15. *Ionic Conductivity Of Ag₂SO₄ Doped With Transition Metal And Rare Earth Ion Impurities* **Bulletin of Electrochemistry**, K Singh, S M Pande, **S W Anwane** and S S Bhoga 12 (11-12) 625 **1996**. Impact Factor 0.206
16. *Ion Conductivity Commensurate With Lattice Distortion in Ag₂SO₄* **Solid State Ionics**, K Singh, **S W Anwane** and S S Bhoga 86-87, Part 1, 187-191 **1996**. Impact Factor 2.012. (SCI Indexed)

JOURNALS UNDER UGC CARE-LIST

17. *Special Relativity using Perplex Numbers*, S W Anwane, **Adv Appl Sci Res** Vol. 12 No. 4:16 **2021**. ISSN:0976-8610 Impact Factor: 3.52.
18. *Lorentz transformations using Complex Numbers* **IJMAR** ISSN 2347-9884, Vol. 5 No. 1, June **2018**.
19. *Lithium Niobate Dispersed Silver Sulphate – A Composite Solid Electrolyte* S W Anwane, **Journal of Innovations in Science** Vol 1 (1) **2014**. ISSN-2394-8051
20. *On scaling factor of Lennard-Jones and Exponential-6 Potential Functions* **Hislopia Journal** 4(1) **2011** p-35 (ISSN No 0976 2124).
21. *Real Gases as Low Temperature Gauge* **Hislopia Journal** 4 No. 2 **2011** p111-114 (ISSN No 0976 2124).

22. *Van der Waals Equation: An Interactive Approach* **Hislopia Journal** 3(1) 2010 p85-92 (ISSN No 0976 2124).
23. *Curve Fitting, Interpolation and Extrapolation-An Interactive Approach* **Hislopia Journal** 3(2) 2010 p209-210 (ISSN No 0976 2124).
24. *Computation of 2D Potential Fields: A Proposed Approach for Improved Visualization* **Hislopia Journal** 2 (2)2009 p97-117.
25. *Computation of Roots by Newton-Raphson's Method – An Interactive Approach* **Bulletin of IAPT** Vol 25 No.9 2008 p302-305.
26. *Simulation of Electron Motion in Fields-An Interactive Teaching Aid* **Resonance** - journal of science education, **S W Anwane** and N S Choubey Vol. 9 No. 4 2004 P79-92.DOI: 10.1007/BF02834859