

Dr. (Mrs.) Vrinda Pradip S.Borker
Principal (since 1/1/2017)

Associate Professor, Department of Chemistry, Dhempe College of Arts and science

Educational Qualifications: M.Sc, Ph.D., D.H.E.

‘Writing in Sciences’ - Completed 8 weeks online course on ‘Writing in Sciences’ conducted by Stanford University from 23rd September – 22nd November, 2013 and secured **distinction (92%)**

Principal Since 1st January, 2017

Off. Principal October 2016 to December 2016

Vice Principal May 2016 to September 2016

Head of Department of Chemistry – From June, 2001 to June, 2004

16th January, 2013 till July, 2013

Nominated as member of **Academic Council** amongst Principals of Goa University from 2018

Nominated as member of **Court** amongst Principals of Goa University from 2018

Appointed as member on board of Technical Education by Govt. of Goa from 2017

Appointed as member on **Board of Studies of PG program** of Goa University from 2018

Appointed as member of Unfair means committee of Goa University from December 2018

Appointed as member of committee of starting new courses in Govt. Aided Colleges by DHE

Appointed on advisory committee of colleges awarded CPE by UGC 2018

1. Vivekanand College, Kolhapur
2. SDM College, Ujjire, Karnatak
3. Shri Manbhai and Navalben Virani Science College Rajkot, Gujarat

NAAC Peer team member

Government Degree College Chamoli on 6,7th September, 2019

Coordinator NAAC 2015

Recognized Research guide of Goa University for Ph.D. – Ph.D. Topic of student: **Metal oxides for environmental friendly applications** -Research student , Rajashree Karmali (awarded degree in 2012).

Registered one student from March 2019, Manisha Mhalsikar

Recognized guide for M. Phil of Periyar University, Salem. The following students guided for M.Phil. of Periyar University ‘Synthesis and characterization of single crystals of transition and rare earth metal complexes’.

(i) Manisha Shirodkar- Topic of M. Phil. Dissertation- **‘Synthesis and Characterization of Alumina’**. (2008)

(ii) Sneha Dabholkar- Topic for M. Phil. Dissertation- **‘Characterisation of M_xO_y oxides ($M=Mn, Ni, Cu, Co$ and Zn) prepared from oxalates and hydrazinated oxalates of respective metals (2008)**

Completed Research Projects:

1. “Synthesis and characterization of pyrochlore materials $A_2Zr_xTi_{2-x}O_7$ ($A= Nd, Er, Hf$)”. **UGC DAE CSR collaborative project.** Jan, 2006-2010
2. The Use of Iron Ore Tailings in Degradation of Dye Effluents, funded by Vasant Rao Dempo Education and Research foundation, 2006-2011, 35000/-
3. **Alumina** Project funded by Hindalco Industries Ltd. Funding for chemicals, characterization and visits to R and D Belgaum May 2007- December 2007.
4. Synthesis and characterization of single crystals of transition and rare earth metal complexes UGC project March, 2013 to March 2015 sanctioned 70000/-

Submitted research Project to RUSA: Use of metal oxides and doped metal oxides in dye degradation and other applications (Rs 29 lakhs)

Editor-in-Charge- Vasant Rao Dempo Education and research Journal of Arts Science and Humanities, Nov. 2014 and March, 2016.

Courses conducted/lectures organized/industrial visits organised:

1. **Secretary**-Workshop Analytical Chemistry conducted for College teachers of Goa University during November 14-17, 1998
2. **Coordinator** Post graduate course in **Industrial and Analytical Techniques** for BSc Chemistry Students started from August 2003.
3. **Coordinator:** Three days Course ‘**Analytical Tools**’ for B.Sc. students in December, 2002
4. **Coordinator:** Three days course on **Nutrition for Body and Mind** for staff and students in November, 2002
5. **Convenor:** Two day Seminar on “Quality Enhancement & sustenance in Higher Education “ held on October 17-18, 2006.
6. **Coordinator** Ayurvedic Preparations for students and staff of College held from 11th to 17th September 2008.
7. **Convenor** Seminar on **Crystallography**, conducted by Dhempe College of Arts and Sc, Miramar on 13th Dec. 2010. Speaker Dr. Cora Lind, University of Toledo, USA
8. **Convenor**-Two days workshop on **Nuclear Energy: Benefits and Safety Aspects** in association with Indian Association of Nuclear Chemists and allied Scientists and BRNS on 9th and 10th September, 2011 for teachers and students of schools, higher Secondaries, colleges and University at Cardium Hall NIO.
9. **Coordinator**-Workshop on Hydroponics for college teachers on 9th October, 2015.
10. **Convenor**- Four Institutes meet held by the college on 25th January, 2011
11. **Convenor**- Founders Day of the college held at NIO on 20th June 2011

12. **Convenor-** Inaugural Function of Golden Jubilee celebration of the College held on 29th July 2011 at NIO
13. **Convenor-** Souvenir release ceremony of Golden Jubilee celebration of the College held on at Kala Academy
14. **Convenor-** Grand finale of Golden Jubilee celebration of the College held on 11th August 2012 at Kala Academy
15. **Coordinator** of Annual Social gathering held on 22nd December, 2012 at Kala Academy
16. **Coordinator** Chemistry Exhibition 3, March 2016, 200 visitors, 20 Exhibits.
17. **Convenor MOU signing committee:** MOU signed between **1.National Institute of Oceanography and College** on 22nd March 2012
 - 2.Indian Council of Agricultural Research, Old Goa and College** on 17th January, 2013
 - 3.Immuno pathology and Therapeutic Immuno Intervention Paris** (on line course conducted for Biotechnology students)
 - 4. Association of Friends of Astronomy** (Sky watch programs conducted)
 - 5. National Centre for Antarctic & Ocean Research** (students visit for Research project and went on Sagarkanya)
 - 6.National Association of Blind** (students are admitted in college)
 - 7.The Energy and Resource Institute (TERI)** Environmental related works
 - 8. Sangath NGO** for mental health awareness programs
 9. Vellalar College for Women , Erode, Tamil Nadu for exchange program
 10. Meijo University Japan for teacher and student exchange

Organiser of One week Summer Course 'Analytical Tools' in association with N.I.O.

2011-12	16-20 April, 2012
2012-13	22-26 April, 2013
2013-14	12-16 May, 2014
2014-15	April, 2015
2015-16	April, 2016
2016-17	April 2017
2017-18	April 2018
2018-19	April 2019

1. **Convenor- Outreach Programme** (below programs conducted)

- 1) Workshop on 'Urban farming' for staff students and public on 26th February, 2013
- 2) Workshop on 'Urban farming', on 24th July 2013 for people of Penha de Franca panchayat
- 3) Workshop on 'Urban farming' on 3rd September, 2013 for people of Penha de Franca panchayat
- 4) Organized Free health Check up camp for women along with Women cell of college and Village Panchayat Penha de Franca on 29th October, 2012 at Panchayat Hall, Alto-Betim. Follow up camp on 23rd November, 2012.
- 5) Organized Free Follow up camp (health Check up camp) for women along with Women cell of college and Village Panchayat Penha de Franca on 23rd November, 2012 at Panchayat Hall, Alto-Betim..
- 6) Workshop on 'vermicomposting' for people of Penha de Franca panchayat on 24th July 2013.
- 7) Workshop on 'vermicomposting' for people of Penha de Franca panchayat on 3rd September, 2013.
- 8) Workshop on Vermi composting organised by Outreach Cell in association with Krishi Vigyan Kendra, Ela Goa at Village Panchayat Penha de Franca on 5th July, 2014
- 9) Workshop on 'Mashroom cultivation' for people of Penha de Franca panchayat on 24th July 2013.
- 10) Workshop on 'Mashroom cultivation' for people of Penha de Franca panchayat on 3rd September, 2013.
- 11) Workshop on Nutrition education was organised by Outreach Cell in association with Krishi Vigyan Kendra, Ela Goa at Village Panchayat Penha de Franca on 14th February, 2014.
- 12) Outreach Cell with Physics Department of Dhempe College of Arts & Science in collaboration with Association of Friends of Astronomy organised on Night sky watching at Penha de Franca village in Jan. 2015.
- 13) Workshop on financial awareness for middle income group at Village Panchayat Penha de Franca.
- 14) 'Garbage Segregation Drive' in Village Panchayat by Outreach and NSS unit. (980 houses covered on 2nd October, 2014 (Swacch Bharat Abhiyan)
- 15) 'Swachh Bharat ' at Village Panchayat Penha De Franca by Outreach Cell and N.S.S. unit on 21/1/2016 and 15/2/2016
- 16) 'JAGRUTI Mental Health Awareness' in association with Sangath to remove stigma attached with mental illness includes road show, video screening and interaction with psychiatrists, 3 programs Betim, Porvorim, Mercers
- 17) A workshop on Prevention of Child sexual abuse for children how to identify abuser, and how to protect on 9th March at K.B.Hedgewar school in association with Muktha Foundation Bangalore

18)

2. Organiser of guest lectures, for staff/ students:

- 1) Lecture by Dr. Damodar Shenoy, NIO, 'Global warming' on 15/7/15
- 2) Lecture by Dr Kamlesh P. Phondekar, Head Production, Syngenta India Ltd 'Safety in Laboratory' in 10/3/15
- 3) Lecture by Dr. Santosh Tilve, Goa University, Life of Steve Jobs. August, 2014
- 4) Lecture by Dr. S.P. Kamat, Biodiesel August, 2011
- 5) Lecture by Dr. Sunder Dhuri, Goa University, Avenues of Education in S. Korea March, 2010
- 6) Lecture by Dr. K.S. Rane, Goa University, Research avenues March, 2012
- 7) Organised lecture 'Health through Ayurveda' by Dr. Archana Gaonker, Ayurvedic Doctor on 9th July, 2014 under Personality Development Programme for students of B.Sc.
- 8) Organised meeting of All Goa Physical Chemistry teachers to discuss new curriculum of V and VIth semester on 11th December 2009 and 2nd September, 2013.
- 9) Lecture by Dr. A.K. Tyagi, Chemistry Division, BARC "Avenues available for Science graduates" on Dec. 02, 2005.
- 10) Lecture in collaboration with Gomantak Marathi Vidnyan Parishad, by Dr. Veena Sagar, Scientist from BARC "Avenues for Science graduates" on Jan 06, 2004.
- 11) Lectures 8 on 'Expectations of Industry from Graduates' by Dr. Maansingh Singte, Aventis Pharma in August 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010.
- 12) Lectures 11 on Good Laboratory Practices by Mr Sanjay Priolker, General Manager, Indoco Pharma Ltd. 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2012, 2014, 2015.
- 13) Lectures 9 on Biodata writing and Interview techniques by i. Noel Noronha, Sanofi Aventis, December, 2004, 2005 ii) Namrata Verma Sanofi Aventis, December, 2006, 2007, 2008 iii) Durgesh Angle Sanofi Aventis, December, 2010, 2011, 2012, 2015
- 14) Lectures 9 by Mr Jalesh Burye Method Validation December 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 and 2011
- 15) Lecture by Dr K. P. Mishra and Group, BARC "Radioisotope in health care, Industry, agriculture and research" on Jan. 20, 2004.

3. Industry visits for T.Y.B.Sc. students/staff :

2002-03	Syngenta
2003-04	Syngenta
2004-05	Syngenta
2005-06	German Remedies, Hindustan Lever
2006-07	Menezes group of Companies

2008-09 Department of Chemistry, Bits Pillani- Goa and Blue cross pharmaceuticals Ltd.
 2009-10 Centaur Pharmaceuticals Ltd, Thivim.
 2011-12 Bits Pillani- Goa and Blue cross pharmaceuticals Ltd.
 2012-13 MRF, Ponda and Okasa Ltd., Kundaim
 2013-14 Unichem Industries Ltd.
 2014-15 Nestle India Ltd. And Wallace Pharma Ltd.
 2015-16 Fabre Castle India Ltd, Medispray Laboratories Ltd., and Goa Paints.

Refresher courses in Chemistry attended:

- 1) Conducted by University of Mumbai from December 4 to 27, 1991
- 2) Conducted by Mangalore University from October 17 to November 7, 1994
- 3) Conducted by Goa University from February 5 to 25, 1997
- 4) Conducted by University Pune from March 2 to 28, 1998

Paper published

1. Optimization of synthesis of nickel-zinc ferrite from oxalates and oxalatohydrazinate precursors by V.Moye, K.S.Rane, V.N.Kamat Dalal, J.Mater.Sci.Mater.Elec.1 (1990) 212.(impact factor 1.0794) citation 21
2. Synthesis and decomposition of ferrous oxalato hydrazinate precursors to obtain magnetic oxides by V.Borker, K.S.Rane, V.N.Kamat Dalal, J.Mater.Sci.Mater.Elec.4 (1993) 241-248. (impact factor 1.0794) citation 23
3. Synthesis, properties and structure of tris(acetylacetonato)aluminum(III) by Manisha Shirodker, Vrinda Borker, C. Nather, W. Bensch & K. S. Rane in Indian Journal of Chemistry, section A, Vol.49, December, 2010 **ISSN: 0376-4710 citation 22**
4. Bactericidal Action of N doped ZnO in Sunlight by Rajashri S. Karmali, Amruta Bartakke, Vrinda P. Borker, Koyar S. Rane in Biointerface research in Applied Chemistry, Vol.1. March, 2011 citation 23 ISSN:2069-5837 citation 21
5. 'Citrate gel route for Synthesis of dense pyrochlores' by R. Karmali V. P. Borker, K.S. Rane, S.K.Deshpande in Materials Chemistry and Physics 129(2011)1116-1120 ISSN: 0254-0584 citation 5
6. Value addition to the low grade iron ore rejects by Rajashri Karmali, Vrinda Borker, K.S. Rane & C. G. Naik in Journal of Solid waste Technology and management Vol.38(4) November, 2012 (SJR 0.16) ISSN: 1088-1697
7. Paper in Proceedings '**Comparison of degradation of methylene blue by N doped ZnO and iron ore rejects** by Vrinda Borker, Rajashri Karmali, Koyar Rane at The 28th International Conference on Solid Waste Technology and Management held at Philadelphia, PA U.S.A.on March 10-13, 2013(ISSN 1091-8043)

8. Comparison of degradation of methylene blue dye by ZnO, N-doped ZnO and iron ore rejects by V. Borker, R. Karmali and K.S. Rane, European Chemical Bulletin, 2014, section B, 3(6), 520-529 (ISSN 2063-5346)
9. Growth of nickel oxalate dihydrate crystals by gel method, Vrinda P. S.Borker, Vasantrao Dempo Education and Research Journal of Arts, Science and Humanities, Vol.1, December,2014 (ISSN 2495-7557)

Papers presented

1. At Seventh National Symposium and Workshop on Thermal Analysis held from October 21-25, 1989 at Shrinagar, presented the paper "Synthesis of magnetic materials by thermal decomposition of oxalato hydrazinate precursors by Vrinda Moye, K.S.Rane, V.N. Kamat Dalal".
2. At Ninth Annual Conference of Indian Council of Chemists in 1990 at Gulberga, presented "Decomposition of ferrous oxalato-hydrazinates in different controlled atmospheres" by Vrinda Moye, K.S.Rane, V.N. Kamat Dalal.
3. At Tenth Annual Conference of Indian Council of Chemists held from October 28-30,1991 at Goa , presented the paper " X-T curves of Nickel Zinc Ferrites synthesized from their oxalate and oxalato hydrazinate precursors by V. Moye, K.S.Rane, V.N. Kamat Dalal."
4. At Tenth Annual Conference of Indian Council of Chemists held in Goa from October 28-30,1991, presented "BiSrCaCuO_x superconductors from oxalate and oxalato hydrazinate precursors" by V. Moye, K.V. Raman Rao, K.S.Rane.
5. At 13th AGM of Materials Research Society of India in Feb. 2002 presented "Low temperature synthesis of Gadolinium Zirconate" by Vrinda Borker, A.K.Tyagi, K.S.Rane.
6. At the international symposium on recent advances in inorganic materials RAIM 2002 at IIT Mumbai in Dec 2002 presented High temperature X-Ray diffraction studies of Gd₂Zr₂O₇ pyrochlore by Vrinda Borker, A.K.Tyagi, K.S.Rane
7. AT The Fourth National Symposium and conference on solid state chemistry by ISCAS, 1-3 December 2005, at Goa University presented two paper\posters
 - i)"Low temperature synthesis of neodymium zirconate" by Rajashree Karmali, V. P. Borker, A. K. Tyagi. and
 8. ii)"Analysis of Loha Bhasma" by V. Borker, V. Virginkar, S.S. Vaidya
9. Two day National seminar on the Role of Material Science in Electronic Industry and Information Technology conducted by Dnyanprasarak Mandal's College of Arts Commerce and Science,Assagaon Goa on 9th and 10th March 2007 and presented paper " Ionic Conductivity of Neodymium Zirconate prepared by precursor method" by Rajashree Karmali, V. P. Borker, K.S.Rane A. K. Tyagi.
10. At The sixteenth National symposium on thermal analysis conducted from 4th-6th Feb, 2008 the following paper was presented at Indira Gandhi Centre for atomic Research, Kalpakkam,

Innovative Use of Thermal Techniques in aerosolized simple metal oxide precursors by K.S.Rane, Soubir Basak, Vrinda Borker, Manisha Shirodkar and Pratim Biswas.
Received The ‘Best Paper award’ (third) for presentation.

11. Papers presented at the 4th Asian conference on Crystal Growth and Crystal Technology held from 21st May to 24th May 2008 at Sendai, Japan.

Low temperature synthesis of Pyrochlore oxides, $\text{Nd}_2\text{Zr}_x\text{Ti}_{2-x}\text{O}_7$

by Rajashree Karmali, Vrinda Borker, K.S.Rane, A.K.Tyagi and

12. **Synthesis, Thermal Characteristics and Crystal Structure of Aluminum Acetylacetonate** by M. Shirodkar, V. Borker, K.S.Rane, B.R.Shrinivasan, C. Näther and W.Bensch

13. At 17th Canadian Thermal Analysis Society, Workshop in conjunction with 53rd International Conference on Analytical Sciences and Spectroscopy ICASS 2007, Trent University in Peterborough, Ontario, Canada 24-28th June 2007 following papers were presented.

i) Hydrazine methods for synthesis of Al_2O_3 : Thermal decomposition of aluminum carboxylates by Prof.K.S.Rane, Dr.Vrinda Borker, Manisha Shirodker

14. **ii) Hydrazine methods for synthesis of Al_2O_3** : Thermal decomposition of aluminum hydroxides by Prof.K.S.Rane, Dr.Vrinda Borker, Manisha Shirodker.

15. Paper presented at ‘Water Chemistry for society, industry and its present scenario for domestic use’ on 6th Dec.2010 at one day seminar at Dr.A.V.Baliga College, Kumta, “Advanced oxidation of organic waste using semiconductor oxides” by R.Karmali, V.Borker, K.S.Rane.

16. Presented paper at National conference on science technology and applications of rare earths; Munnar (India); 19-20 Aug 2011, “**Leaching of strontium from strontium-doped pyrochlore for nuclear waste disposal studies**” by Karmali, R.; Borker, V.P. (Dhempe College of Arts and Science, Miramar (India)); Rane, K.S.

17. Paper ‘**Zirconate Pyrochlores as Matrix for Nuclear Waste Disposal**’ by R.Karmali, Vrinda Borker, K.S.Rane was presented at International Conference on Synthetic and Structural Chemistry held at Mangalore University from 8th to 10th December, 2011.

18. Paper ‘**Easy Production of fine size Metal Oxides, Part-I: Solid Aerosol Pyrolysis in Furnace Flow Reactor**’ by Soubir Basak, Manisha Shirodkar, Vrinda Borker, Pratim Biswas, K. S. Rane was presented at 7th National Symposium and Conference on Solid State Chemistry and Allied areas ISCAS 2011 organised by Jamia Millia Islamia New Delhi on 24-26th November 2011

19. Paper ‘**Easy Production of fine size Metal Oxides, Part-II: Liquid Aerosol Pyrolysis in Furnace Flow Reactor**’ by Soubir Basak, Vrinda Borker, Pratim Biswas, K. S. Rane was presented at 7th National Symposium and Conference on Solid State Chemistry and Allied areas ISCAS-2011 organised by Jamia Millia Islamia New Delhi on 24-26th November 2011

20. Paper ‘**Significance of morphology, particle sizes, structure and material properties of ZnO in tackling the environmental problems**’ by Rajashree Karmali, Vrinda Borker and K. S. Rane was presented at 7th National Symposium and

- Conference on Solid State Chemistry and Allied areas ISCAS 2011 organised by Jamia Millia Islamia New Delhi on 24-26th November 2011.
21. Paper ‘ **Synthesis and Characterisation of N doped ZnO and its use as photocatalyst in dye degradation**’ by Rajashree Karmali, Vrinda Borker and K.S.Rane was presented at National Seminar Nanomaterials: Synthesis, Characterisation and applications organized by Smt. Parvatibai Chowgule college of Arts and Science Margao-Goa on 2nd and 3rd February, 2012.
 22. Presented paper ‘**Certificate courses fostering linkage between industry, corporate and academia**’ by **Vrinda Borker** at the National Seminar on Outreach –A catalyst towards improved educational outcomes held at Chettinad Academy of Research and education, Kelambakkam, Tamil-Nadu on 28th and 29th September, 2012
 23. Paper ‘**Nd₂Zr₂O₇ lattice as host for radioactive fission products**’ by V. P. Borker, R. Karmali K.S. Rane at **100th** session of The Indian Science Congress held at Kolkata from 3rd to 7th January, 2013.
 24. Paper ‘**Comparison of degradation of methylene blue by N doped ZnO and iron ore rejects by Vrinda Borker, Rajashri Karmali, Koyar Rane** at The 28th International Conference on Solid Waste Technology and Management held at Philadelphia, PA U.S.A. on March 10-13, 2013
 25. Paper Photocatalytic degradation of Methylene Blue by TiO₂, ZnO, N-doped TiO₂ and ZnO, and iron ore rejects: a comparative study” by R. Karmali, V. Borker and K. S. Rane was presented at XXXII Annual conference of the Indian Council of Chemist held at Karnatak University, Dharwad on 28th -30th November, 2013.
 26. Paper “Pyrochlore Oxides for disposal of nuclear wastes” by R. Karmali, V. Borker and K. S. Rane was presented at UGC sponsored National Conference “Physics and Chemistry of Advanced Materials” organised by C. B. Khedgi’s Basaveshwar Science, Raja Vijaysinh commerce & Raja Jaisinh Arts College, Akkalkot, Solapur on 18-19th December 2013. **The paper was awarded second prize for Best Oral Presentation**
 27. Presented a paper, ‘Growth of Cobalt Oxalate Crystals’ at National Conference on Emerging Trends in Chemistry and Material Science held at Gogte Institute of Technology, Belgaum on 13th October, 2014
 28. Presented a Paper at 2nd National Conference on Emerging Trends in Chemistry Materials Science organised by Gogte Institute of Technology, Belagavi, Karnataka on 23rd February, 2016, and ‘ Effect of Dyeing Chemicals and Additives on Methylene Blue Degradation by Iron Ore Rejects’
 29. Presented paper ‘Doping of zinc oxide to alter its properties’ at National conference SMART2015 on 27-28th November, 2015 organised by Faculty of Basic Sciences, Shoolini University, Solan, Himachal Pradesh and **won the Best Paper Award**
 30. At International conference Science and Technology: Future challenges & solutions 2016 at University of Mysore on 8th & 9th August, 2016.
 31. At National Institute of Technology. Patna, at the International Conference on multifunctional materials for device application from 26th -28th October, 2016.
 32. ‘Enhanced photodegradation of organic dyes improved bacterial Activity and optimised DO/COD/BOD’ At Crystal Ball Vision on Science and Engineering for Societal

Upliftment, National Institute of Oceanography, Goa organized by Japan Science Agency on 7th and 8th August 2017

33. 'Synthesis and Characterisation of Cobalt Oxide and Cu doped Cobalt oxides as photocatalysts' At 20th International Conference on Environmental Nanotechnology and applications organized by World Academy of Science, Paris on 15th and 16th March 2018
34. At 20th International Conference on Industrial Waste Treatment and Control International Research Conference, Wembley, London 'Effect of doping on band gap of zinc oxide and degradation of MB and industrial effluent' by V.Borker, K.S. Rane, A.S. Bhobe, R.Karmali on 28th and 29th June 2018 won **Best Paper award**
35. At International conference on advancement of science and technology at Vishwabharati Shanti-Niketan Bengal 'MB degradation over metal oxide catalyst under sunlight irradiation Chemical and chromato-graphic analysis of the degradation products' Neemakthar Momin, Vrinda Borker, K.S.Rane on 3rd and 4th September 2018
36. At Executive Development Program held at Punjab University, Chandigarh from 18th to 22nd November, 2018 and presented paper on Innovative/Best Practices of the College
37. At the International conference on NANATECHNOLOGY-2019 Opportunities and Challenges organized by Undergraduate and Postgraduate Departments of Chemistry in association with the University of Namur, Belgium at St. Aloysius College, Mangaluru on 10 - 11 January 2019 presented a paper entitled, "Hydrazine assisted synthesis and its role in stabilising nanosized gamma alumina phase"
38. At International Conference on Nano-materials for Environmental Applications (NEA2019) on 6-7th March 2019 organised by Dhempe college of Arts and Science presented paper on "Preparation of Nanosized gamma aluminium oxide and its model Adsorption studies for Abatement of water pollution"
39. At International Conference on Nano-materials for Environmental Applications (NEA2019) on 6-7th March 2019 presented paper 'Characterisation and Quantification of Primary Microplastics in Personal care products and Washing Effluents in Goa India'

Workshops attended:

1. Attended NAAC Assesors Orientation Program workshop at Savitribai Phule University, Pune on 2nd August, 2019
2. Attended Executive Development Program for Principals of Colleges by All India Principals' Forum held at Punjab University, Chandigarh from 18th to 22nd November, 2018
3. Academic Leadership in Digital world at Sanskruti Bhavan Panaji from 27 to 29th November, 2017. Organized by Department of Higher Education
4. Workshop on Flipped learning organized in Dhempe College on 6th and 7th November, 2017
5. 9th Edition DIDAC India, The International Education and Skill Summit (TIESS) from 4-6 October 2018 at New Delhi
6. International conference on advancement of science and technology at Vishwabharati Shanti-Niketan Bengal on 3rd and 4th September 2018

7. 20th International Conference on Industrial Waste Treatment and Control International Research Conference, Wembley, London on 28th and 29th June 2018
8. 20th International Conference on Environmental Nanotechnology and applications organized by World Academy of Science, Paris on 15th and 16th March 2018
9. Academic Leadership in Digital world at Sanskruti Bhavan Panji from 27 to 29th November, 2017
10. Workshop on Flipped learning organized in Dhempe College on 6th and 7th November, 2017
11. Crystal Ball Vision on Science and Engineering for Societal Upliftment , National Institute of Oceanography, Goa organized by Japan Science Agency on 7th and 8th August 2017
12. Education and Industry Development at New Delhi on 3rd June, 2017
13. 4th cycle of reaccreditation by Birla College of Arts science and Commerce Kalyan on 24th February, 2017.
14. Attended seminar conducted by Association of Chemistry Teachers at Govt. College of Arts Science and Commerce at Sankhali on 24th February, 2016.
15. Attended 2nd National Conference on Emerging Trends in Chemistry Materials Science organised by Gogte Institute of Technology, Belagavi, Karnataka on 23rd February, 2016, and presented a Paper ‘ Effect of Dyeing Chemicals and Additives on Methylene Blue Degradation by Iron Ore Rejects’
16. Attended National conference SMART2015 on 27-28th November, 2015 organised by Faculty of Basic Sciences, Shoolini University, Solan, Himachal Pradesh and presented paper ‘Doping of zinc oxide to alter its properties’ and **won the Best Paper Award.**
17. Attended and organized Workshop on Hydroponics on 9th October, 2015.
18. Attended National Conference on Emerging Trends in Chemistry and Material Science held at Gogte Institute of Technology, Belgaum on 13th October, 2014 and presented a paper, ‘Growth of Cobalt Oxalate Crystals’
19. Attended ‘National Summit on Quality in Education’ held at Christ University, Bangalore on 16th and 17th September, 2014.
20. Attended The 28th International Conference on Solid Waste Technology and Management held at Philadelphia, PA U.S.A. on March 10-13, 2013 and presented paper ‘Comparison of degradation of methylene blue by N doped ZnO and iron ore rejects by Vrinda Borker, Rajashri Karmali, Koyar Rane
21. Attended Higher Education Summit 2012 organised by Department of Education in alliance with CII on ‘Improving Quality of Higher Education to Drive Goa’s Economy’ on 14th December, 2012 at Vivanta by Taj, Panaji,
22. Attended the National Seminar on Outreach –A catalyst towards improved educational outcomes held at Chettinad Academy of Research and education, Kelambakkam, Tamil-Nadu on 28th and 29th September, 2012 and presented a paper.
23. Attended seminar by Dr. Anil Kakodker on ‘Challenges of Promoting a Green Economy’ on 4th September, 2012 at The international Centre Goa, Dona Paula.
24. National Seminar Nanomaterials: Synthesis, Characterisation and applications organized by Smt. Parvatibai Chowgule college of Arts and Science Margao-Goa on 2nd and 3rd February, 2012 and presented poster

25. National Symposium and Conference on Solid State Chemistry and Allied areas ISCAS 2011 organised by Jamia Millia Islamia New Delhi on 24-26th November 2011 and presented three posters.
26. International Conference on Synthetic and Structural Chemistry held at Mangalore University from 8th to 10th December, 2011 and presented a paper.
27. Two days workshop on Nuclear Energy: Benefits and Safety Aspects convened and attended in association with Indian Association of Nuclear Chemists and allied Scientists and BRNS on 9th and 10th September, 2011 for teachers and students of schools, higher Secondaries, colleges and University at Cardium Hall NIO
28. 'Research Methodology', a six days workshop organized by Dhempe college from 4th to 9th July 2011
29. One day Workshop on Scifinder conducted by Goa University Library in collaboration with the Department of Chemistry on 24th March 2011.
30. IX Annual convention of Association of Chemistry teachers Goa on Feb. 5, 2011 at Dhempe College of Arts and Sc, Miramar, Goa.
31. Organised and attended Seminar on Crystallography, conducted by Dhempe College of Arts and Sc, Miramar on 13th Dec. 2010
32. One day Sensitisation Programme on Science and Technology for women organized by Dhempe College of Arts and Sc. Miramar, on 22nd November, 2010
33. VIIIth Annual convention of Association of Chemistry teachers Goa on Feb. 6, 2010 at Govt.College of Arts Science and Commerce, Quepem, Goa.
34. Two days National conference on 'Chemical Sensors-an Update', organized by P.E.S.'s Shri Ravi Naik College of Arts and Sc. Farmagudi Goa, January 2010.
35. Attended The 4th Asian conference on Crystal Growth and Crystal Technology held from 21st May to 24th May 2008 at Sendai, Japan.and presented papers i)Low temperature synthesis of Pyrochlore oxides, $\text{Nd}_2\text{Zr}_x\text{Ti}_{2-x}\text{O}_7$
 - a. by Rajashree Karmali, Vrinda Borker, K.S.Rane, A.K.Tyagi
36. ii) Synthesis, Thermal Characteristics and Crystal Structure of Aluminum Acetylacetonate by M. Shirodkar, V. Borker, K.S.Rane, B.R.Shrinivasan, C. Näther and W.Bensch
37. The sixteenth National symposium on thermal analysis conducted from 4th-6th Feb, 2008 the following paper was presented at Indira Gandhi Centre for atomic Research, Kalpakkam,
 - a. Innovative Use of Thermal Techniques in aerosolized simple metal oxide precursors by K.S.Rane, Soubir Basak, Vrinda Borker, Manisha Shirodkar and Pratim Biswas.
 - b. Received The 'Best Paper award' (third) for presentation.**
38. One day state level seminar "Advances in Chemical Synthesis" held at Department of Chemistry, Goa University on March 18, 2009.
39. VII Annual convention of Association of Chemistry teachers Goa on Feb. 7, 2009 at S.V.P. Walawalker Higher Secondary School Khorlim, Goa.
40. V Annual convention of Association of Chemistry teachers Goa on Feb. 10, 2007 at Dyanprassarak Mandal's College of Arts, Science & Commerce, Assagao Goa.
41. XII workshop on Neutrons as probes on condensed matter Feb. 24, 25, 2006 organised by UGC-DAE-CSR and BARC at BARC Mumbai.

42. Fourth National Symposium and conference on solid state chemistry by ISCAS, 1-3 December 2005, at Goa University.
43. III Annual convention of Association of Chemistry teachers Goa on Feb. 04, 2005 at S. P. Chowgule College of Arts & Science, Margao Goa.
44. National workshop for “Advanced methods for materials characterization” on Oct. 11-15, 2004 at BARC, Mumbai.
45. II Annual convention of Association of Chemistry teachers Goa on Feb. 06, 2004 at Carmel College of Arts, Science & Commerce, Nuvem Goa.
46. Attended a symposium ‘NEW FRONTIERS IN CHEMISTRY’ in Goa University On 26th Feb 2003
47. International symposium on recent advances in inorganic materials RAIM 2002 in Dec2002, in IIT Mumbai.
48. I Annual convention of Association of Chemistry teachers Goa on Dec. 8, 2002 at Government College of Arts, Science & Commerce, Sanquelim Goa.
49. XXIII National academic conference “The need to protect & strengthen Public Funded Education System “on 25- 27 Oct. 2002 at Panaji Goa.
50. Attended workshop on THERMAL TECHNIQUES at Department of Chemistry, Goa University on 30th September 2002.
51. Symposium and workshop on Thermal analysis conducted at BARC Mumbai from Jan 21-25, 2002.
52. First convention of accredited colleges-NAAC in Chennai on October 19,20, 2001.
53. One day convention of chemistry teachers conducted by Dept. of Chemistry Goa University, PES College of Arts & Science, Farmagudi Ponda Goa. On Sep. 23, 2001.
54. A seminar on “ Linking education to the needs of industry in 21st Century “ on Dec. 05, 1999 at Dyanprassarak Mandal’s College of Arts, Science & Commerce, Assagao Goa.
55. Workshop on Microscale Techniques in Chemistry conducted by St.Xavier’s college of Arts and Science, Mapusa Goa from March 3 to 6, 1999.
56. Workshop in Analytical Chemistry for College Teachers conducted by Dhempe College with the help of training school of BARC from October 14 -17,1998.
57. A seminar “ Duties & rights of teacher “ on Feb. 22, 1998 at Carmel College of Arts, Science & Commerce, Nuvem Goa.
58. Workshop in Analytical Chemistry conducted at Goa University during November 5-7, 1997.
59. Seventh National Symposium and Workshop on Thermal Analysis held in October 21-25, 1989 at Shrinagar.

Resource person at:

- National seminar and workshop on Rasashastra on 19th and 20th Jan 2005 at Shri BMK Ayurved Mahavidyalaya at Belgaum. The topic for discussion was Use of modern instrumental techniques in analysis of Ayurvedic medicines and raw materials.
- Guest Lecture for Post graduate students of B.M.Kankanwadi Ayurved Mahavidyalaya on 16th April, 2006.
- The workshop on ‘Model question paper setting and evaluation methodology for B.Sc. Chemistry Courses ‘ organized by P.E.S. College, Ponda, in association with B.O.S. Chemistry, Goa University on 3rd April 2007.
- Invited as resource person on Code of professional ethics for Orientation program for College assistant professors conducted by HRDC Goa University on 19th January, 2019
- Invited as Resource person at NAAC sponsored ‘One day National Workshop on New Spirit of Assessment and Accreditation Process’ at Jaysinghpur College, Jaysinghpur on 20th July, 2019
- Invited as resource person for Orientation program for College assistant professors conducted by HRDC Goa University on August, 2019

Invitee at:

- Two day National seminar on the Role of Material Science in Electronic Industry and Information Technology conducted by Dnyanprasarak Mandal’s College of Arts Commerce and Science, Assagaon Goa on 9th and 10th March 2007.
Invited as subject expert for workshop organized by Commission for Scientific Technical Terminology (Ministry of HRD, Govt. of India, New Delhi) from 29th Oct. 2007- 2nd Nov. 2007 at Goa Konkani Academy. And from 10th Nov.-14th Nov. 2008.

Chief Guest

Invited as chief guest for the prize distribution ceremony at Vasantrao Dhempe HSS on 13th July, 2019

Invited as chief guest for the prize distribution ceremony by Giant Group of Panaji at Saraswati Vachan Mandir on 11th August 2019

Member of Board of studies: Chemistry Goa University from 2003 to 2006.

Member of subcommittee of Board of studies: Goa University since January 2006.

Life Member of Indian Thermal Analysis Society.

Life Member of Association of Chemistry teachers Goa.

Life Member of Indian Society for Material Chemistry (No. 66)

Life member of Indian Science Congress

Awards

1) **Felicited by Goa Pharmaceutical Manufacturers Association at the hands of Honorable Chief Minister of Goa Shri Digambar Kamat during their AGM on 14th Nov. 2007 for interest taken in upgrading the Post graduate Course in Analytical techniques in line with industry requirement**

2) **Received The ‘Best Paper award’ for presentation.**

1. at The sixteenth National symposium on thermal analysis conducted from 4th-6th Feb, 2008 the following paper was presented at Indira Gandhi Centre for atomic Research, Kalpakkam,

Innovative Use of Thermal Techniques in aerosolized simple metal oxide precursors by K.S.Rane, Soubir Basak, Vrinda Borker, Manisha Shirodkar and Pratim Biswas.

2 Won the **Best Paper Award** at National conference SMART2015 on 27-28th November, 2015 organised by Faculty of Basic Sciences, Shoolini University, Solan, Himachal Pradesh ‘Doping of zinc oxide to alter its properties’

3. Won **Best Paper award** at 20th International Conference on Industrial Waste Treatment and Control International Research Conference, Wembley, London on 28th and 29th June 2018 ‘Effect of doping on band gap of zinc oxide and degradation of MB and industrial effluent’

3)Received the Best Educationist Award by International Institute of Education and Management, New Delhi on 3rd June 2017, during the National Seminar on ‘Education and Industrial Development’.

Students’ best presentations

- 1) Received second prize Best oral Paper presentation’ Paper “*Pyrochlore Oxides for disposal of nuclear wastes*” by R. Karmali, V. Borker and K. S. Rane was presented at UGC sponsored National Conference “Physics and Chemistry of Advanced Materials” organised by C. B. Khedgi’s Basaveshwar Science, Raja Vijaysinh Commerce & Raja Jaisinh Arts College, Akkalkot, Solapur on 18-19th December, 2013.
- 2) Received best poster presentation by Demilade Adisa, at Intercollegiate paper presentation of T.Y. B.Sc. research project at seminar conducted by Department of Chemistry, Goa university. In January, 2010
- 3) Received 2nd prize for oral presentation by Varsha Yalgi, at Intercollegiate paper presentation of T.Y. B.Sc. research project at seminar conducted by Department of Chemistry, Goa university. In January, 2009.