BIODATA

a. Name: PRAMOD H. BORSE,
FRSC (UK),Sr IEEE, Sr OSA, MInstP, FTAS, FMAS

b. Qualification PhD *(PHYSICS-Nano)*

c. Designation SCIENTIST - G

d. Contact information :

International Advanced Res. Center
For Powder Metallurgy and New Materials ,(ARCI), Hyderabad, India.
Phone: 040-24452426,
Email : phborse@arci.res.in
URL : https://www.researchgate.net/profile/Pramod_Borse
Orcid id : https://orcid.org/0000-0002-2577-8752

e. Education : MSc, PhD in Physics

S.No.	Degree/Diploma	University/Institution
1	Brain Korea POST doc	Pohang University of Science and Technology (POSTECH), S.Korea
2	Ph. D	Physics Dept., S.P.Pune University, India
3	M.Sc.	Physics Dept, University of Pune. India
4	B.Sc.	Garware College, Pune University, India

f. Professional Career

29 years of experience in Research, Technology Development and Tech. Transfer Experience in Renewable Energy (Green Hydrogen), Quantum Material and Physics, Sensors & IOT Technology; 1 year of post graduate teaching Physics- Guided ***three*** PhDs and ***35*** MTECH projects (*As off Aug 2025*)

Present *(Since-2022)*: ***Scientist -G,* ARC-International**, Hyderabad, **India**

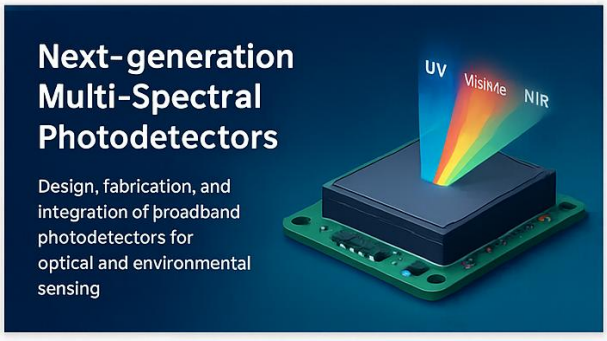
Past : *Scientist -F,* ARC-International, Hyderabad, **India**

Past : *Scientist -E,* ARC-International, Hyderabad, **India**

Research Professor, Chemical Engg. Dept. POSTECH, **S. Korea**
Post Doctoral fellow, Materials Engg. Dept. POSTECH, **S. Korea**
Assistant Professor in Physics, Pune University, Pune, **India**
Research Assistant, National Chemical Laboratory, Pune, **India**

g. **Research Areas of Interest** –

Energy Materials: Luminescent, Solar, Thermoelectric, Magnetic
Renewable Energy generation, Sensors
Thin-film deposition: Physical, Chemical, Radiation(synchrotron/laser)
Assisted methods
Condensed Matter Physics – Materials modeling by computational physics - ***ONGOING*** ⬇



h. **Technology development Interest, participation and contribution**–

a. Technology Development for Thirty Meter Telescope (TMT) USA – Development of Nano-metric gold film for Edge Sensor Development
b. Technology Development Project with Tata Steel -Developing Mn-Zn-Ferrite Core-Shell Nanocomposite for soft magnet application (recyclability-value addition)
c. Indian Startup Industry contribution – Optical sensor development and technology for economic planar photodetector and transfer to Hyderabad company
d. Consortium based development- Sensor Development (solar photo-detection, High Temperature , Environmental & Toxic gas)
e. Joint MOU with Industries – Sensor Development and IOT integration of Make in India Sensors – photodetectors, gas sensors (ammonia, hydrogen)
f. POSCO Korea - Real time synchrotron x-ray imaging for medical diagnostics,
g. Samsung electronics (SAIT, Korea) - Nano- Phosphor development for electronic Displays
h. General Motors (GM project) Korea – Solar hydrogen generator

i. **Research Guide** :
Guided 3 PhD students and 35 Master Students -

1) Dr Reha Dom – Photocatalysis- Hydrogen;
2) Dr Alka Pareekh – Photoelectrocatalytic hydrogen;
3) Dr B.KS Kumaarswamy Reddy – Solution Processed Photodetectors

j. **Honours and Awards** :

- *H*-Index 36 , i10-index 71
- Elected **Fellow** of Royal Society of Chemistry (UK) FRSC 2023
- Elected **Fellow** of Telangana Academy of Sciences FTAS 2019
- Elected **Fellow** of Maharashtra Academy of Sciences FMAS 2018
- Postdoctoral Research Fellowship, POSTECH, S.Korea, 2001
- Fast Track Scheme for Young Scientist project award, Government of India, 2002
- Reviewer for various Elsevier, **RSC** , ***ACS*** , Wiley and AIP journals
- Recognized PhD guide for Osmania University, Andhra University, University of Hyderabad and IIT Hyderabad

k. **Membership with Professional and Scientific bodies** :

- ***Fellow*** of Royal Society of Chemistry (FRSC UK)
- Associate Editor of Frontiers in Sensors (2021- present)
- ***Fellow*** of Telangana Academy of Sciences (TAS) -2019 (Awarded Jan 2021)
- ***Senior*** Member Optical Society of America(OSA) *(since 2020*)
- ***Senior*** Member IEEE society -2020
- ***Life*** Member Sensor research society of India (SRS) - 2019
- ***Fellow*** of Maharashtra Academy of Sciences (MAS) since Dec 2018
- Life Member of Indian Physics Association (IPA)
- Life member Material Research Society of India (MRSI)
- Life member Solar Energy Society of India (SESI)
- Life Member of Indian society for electro analytical chemistry
- Special Member of International Solar Energy Society *(since 2009)*
- Special Member of Optical Society of America(OSA) *(since 2009)*
- OSI Fellow, Optical society of India *(since 2010)*
- Member American Physical Society(APS) *(since 2009)*
- Member of International Electrochemical Society *(since 2010)*
- **Member** of Institute of Physics *(IOP), UK(since 2009)*
- Section Editor for Handbook of Advanced Ceramics and Composites. Springer, Cham 2020
- Editorial Board member of Indian Jou. of Material Science (2011-2016)
- Editorial Board member of Inter Jou. of Photo Energy (2010-2015)
- Editorial Board member of Material Science Research India (2012-2017)

<u>EVENTS</u>

- Co-convener "One Day workshop on Advanced Sensor Material Devices ASMD-

2019" at ARCI Hyderabad 23rd Aug 2019.

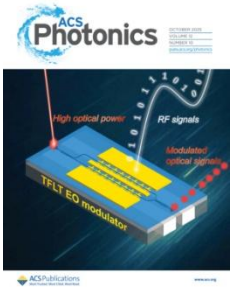
- Organizing Member for ICONSAT 2012 Hyderabad.
- Convener "Advanced Workshop on Evaluation of H_2 producing technologies for Industry relevant Application" at ARCI Hyderabad 8-9 Feb 2013

l. **Any other relevant information** :

1. Member of Board of Studies (Physical Science) for GNIT Hyderabad
2. Project Review Expert for *Ministry* of *Environment* & *Forests* (MoEF) projects
3. "Special Guest", during Science day celebrations at two different institutes in Hyderabad.

m. **List of Journal Publications** (*>115 peer reviewed international papers*)

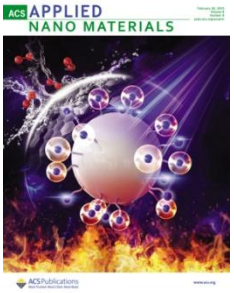
1. Kumaar Swamy Reddy, B., Saxena S., Badhulika, S., **Borse, P.H*.**, Insight into the Optoelectronic Response of Exfoliated Bi2Te3–PEDOT:PSS/SnS Heterostructure-Based Self Powered Vis-NIR Photodetector, ACS Photonics, 2025,12, 10, 5556–5571 (IF: 6.7) Cite: 0



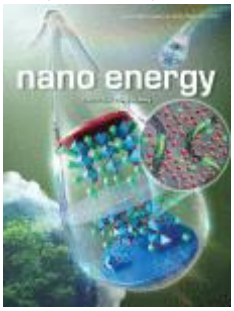
2. Gupta, J., Das, D., **Borse, P.H*.** Sarada, B.V, Single step synthesized V-doped few layered MoS2 nanosheets as an efficient HER cathode for electrocatalytic splitting of saline water, Journal of Alloys and Compounds 1022, 2025 (IF: 6.3) Cite: 0

3. Kumaar Swamy Reddy, B., Veerappan, G, Badhulika, S., **Borse, P.H*.**, Self-Powered Photodetectors Based on Cu_2SnS_3/TiO_2 Nanorod Heterojunctions, ACS Applied Nano Materials,

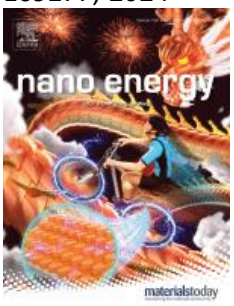
2025,8, 8, 3825−3838 (IF: 5.5) Cite: 0



4. Kumaar Swamy Reddy, B., Aswin S Kumar, R Akash, Easwaramoorthi Ramasamy, Badhulika, S.., Veerappan, G, **Borse, P.H*.**, Ambient processsed highly stable self-powered lead-free Cs2AgBiBr6 double perovskite photodetector in HTM-free architecture with Carbon as electrode, Solar Energy, 283, 112989 , 2024 (IF: 7.2) Cite: 0
5. Kumaar Swamy Reddy, B., K., Abdelbar, M.F., Jevasuwan, W., Zhang Q., **Borse, P.H.** Badhulika, S.., Badhulika, Fukata N. Enhancing silicon photodetector performance through spectral downshifting using core-shell CdZnS/ZnS and perovskite $CsPbBr_3$ quantum dots, Nano Energy, 128, 109832, 2024 (IF: 17.1, PCI:) Cite: 14

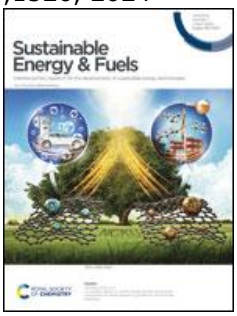


6. Kumaar Swamy Reddy, B., Veerappan, G, Badhulika, S.., **Borse, P.H*.**, Self-powered photodetector based on 1D TiO2-3D CdS mixed dimensional heterostructure fabricated at low temperature, Solar Energy, 274, 112594 , 2024 (IF: 7.2) Cite: 0
7. Kumaar Swamy Reddy, B., K., Abdelbar, M.F., Jevasuwan, W., **Borse, P.H.** Badhulika, S.., Badhulika, Fukata N. Cumulative effect of spectral downshifting, anti-reflection and space-charge region formation in enhancing the spectral response of self-powered silicon photodetectors on sensitisation with CdZnS/ZnS core-shell quantum dots, Nano Energy, 122, 109277, 2024 (IF: 17.1, PCI:) Cite: 16

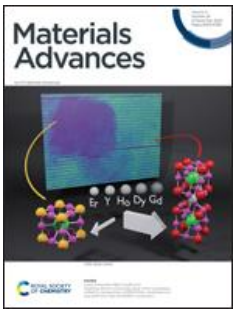


8. Kumaar Swamy Reddy, B., K., Abdelbar, M.F., Jevasuwan, W., **Borse, P.H.** Badhulika, S.., Badhulika, Fukata N. Passivation-free high performance self-powered photodetector based on Si nanostructure-PEDOT:PSS hybrid heterojunction, Applied Surface Science, 648, 158992 , 2024 (IF: 6.2, PCI:) Cite:
9. Gupta, J., Das, D., **Borse, P.H*.** Sarada, B.V, In situ Pd-doped MoS_2 nanosheets as an HER electrocatalyst for enhanced electrocatalytic water splitting, Sustainable Energy and Fuels 8

,1526, 2024 (IF: 4.1) Cite:19



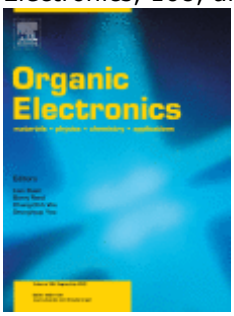
10. Chae, W.-S., Ahn, C.W., Hong, K.-S., Yoon, J.-H., Bae, J.-S., Kim, J.P., Lee, J., Yang, W.-G., **P.H. Borse,** Kim, H.G, Improved charge transport kinetics in $PbBi_2Nb_2O_9$ photocatalysts: Comparative time-resolved recombination study with N-doped TiO_2, Materials Chemistry and Physics 2024; 311, 128514 (IF: 4.79, PCI:) Cite:
11. Kumaar Swamy Reddy, B., Panda, S., Ramasamy, E., Veerappan, G, **Borse, P.H*.** Badhulika, S., Badhulika, Exploring the impact of electron transport layer thickness and morphology on perovskite infiltration and photoresponse in HTM-free self-powered photodetector, Solar Energy, 265, 112106 , 2023 (IF: 7.2) Cite: 0
12. Kumaar Swamy Reddy, B., Panda, S., Ramasamy, E., Badhulika, S., Veerappan, G, **Borse, P.H.***, Badhulika, Fabrication of a self-powered broadband photodetector by 50% replacement of Pb by Mg in the $CH3NH_3Pb_{0.5}Mg_{0.5}Cl_2I$ perovskite lattice, Materials Advances, 4(24), 6522-6534, 2023 (IF: 4.7) Cite:



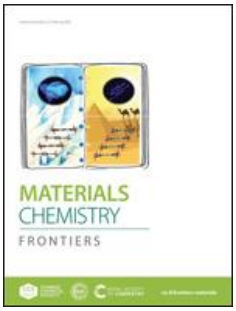
13. Pareek, A., and **Borse, P.H***, Hurdles and recent developments for CdS and chalcogenide-based electrode in "Solar electro catalytic" hydrogen generation: A review, Electrochemical Sci Advances Vol…168.., p.. 057521., 2021
14. Thermally stable electro catalytic nickel-phosphide film deposition on graphite for HER electrode application Uddien Shaik, R., Karanjai, M., Joardar, J., Hebalkar, N.Y., **Borse, P.H.** Materials Science and Engineering B: Solid-State Materials for Advanced Technology 285,115927, 2022 (IF: 4.6) Cite: 4

15. K Reddy B,Sushmitha V, P. H. Borse & S. Badhulika , Synchronous enhancement of responsivity, response time and, spectral range in solution processed CdS photodetector upon modification with PEDOT:PSS(2022) Journal of Alloys and Compounds, 919, art. no. 165775
16. K Reddy B,Sushmitha V, P. H. Borse & S. Badhulika High responsivity self-powered flexible broadband photodetector based on hybrid Selenium-PEDOT:PSS junction (2022) Organic

Electronics, 108, art. no. 106586 (IF: 2.6) Cite: 21



17. K Reddy B,Sushmitha V, P. H. Borse & S. Badhulika 1D NiO-3D Fe2O3mixed dimensional heterostructure for fast response flexible broadband photodetector, (2022) Nanotechnology, 33 (23)
18. K Reddy B,Sushmitha V, P. H. Borse & S. Badhulika Flexible, Rapid Response, Hybrid Inorganic-Organic $SnSe_2$-PEDOT:PSS Bulk Heterojunction based High-Performance Broadband Photodetector Mater. Chem. Front. 2022,6, 341-351 (IF: 6.4) Cite: 36



19. Pareek, A., and **Borse, P.H**, Hurdles and recent developments for CdS and chalcogenide-based electrode in "Solar electro catalytic" hydrogen generation: A review, Electrochemical Sci Advances 168(5) 057521, 2021
20. Mane, R.B., Sahoo, R., Reddy, B.K.S., Ravula, V., Panigrahi, B.B., Borse, P.H., Chakravarty, D, "Doping-induced coloration in titania", Journal of the American Ceramic Society 104 (7), pp. 2932-2936, 2021
21. Reddy, B.K.S., Borse, P.H., "Review—recent material advances and their mechanistic approaches for room temperature chemiresistive gas sensors", Journal of the Electrochemical Society 168 (5), art. no. 057521, 2021
22. A Karati, T Parida, J Gupta, HK Adigilli, Borse, P.H. J Joardar., "Band-gap engineering in novel delafossite-type multicomponent oxides for photocatalytic degradation of methylene blue", Materials Research Bulletin 137, 111181, 2021
23. Madhurima V, **Borse, P.H.** Kumari K, Jain P., "Improved photocatalytic activity of carbon-based polymeric semiconductor for efficient decontamination of wastewater: Effect of reaction atmosphere and pyrolysis temperature", Optical Materials, Vol.110, p 10053, 2020
24. J. Gupta, D. Das, **Borse, P.H.**, "Nanosheets Decorated MoS_2 Micro Balls: Effect of 1T/2H Composition", Chemistry Select, Vol.5, p 11764-11768, 2020
25. Pandi, N Sonawane, SH Gumfekar, SP **Borse, P.H.** et al, Halloysite nanotube based super capacitor, preparation using sonochemical approach and its electrochemical performance, Energy, ecology and environment, Vol 6, 13-25, 2021
26. Pareek, A., R. Dom, J.Gupta, J.Chandran, A.Vivek, and **Borse, P.H**, Insights into renewable hydrogen energy: Recent advances and prospects, Mat Sci Ene Tech 2020; 3, 319-327
27. R Dom, S Govindarajan, SV Joshi, **Borse, P.H.**, Solar-responsive zinc oxide photo anode for solar-photon-harvester photoelectrochemical (PEC) Cell", Nanoscale Advances, Vol.230, p 337-346, 2020
28. Pandi, N Sonawane, SH Gumfekar, SP Kola, AK **Borse, P.H.** Ambade, SB Guptha, S Ashokkumar, M F, Electrochemical Performance of Starch-Polyaniline Nanocomposites Synthesized By Sonochemical Process Intensification, JOURNAL OF RENEWABLE MATERIALS, Vol.7, p 1279-1293, 2019

29. Kumar, K.S, Medhi, H., Banik, D., Suresh, M.B., **Borse, P.H.**, Paik, P, Novel mesoporous SiO_2 conjugated graphene oxide 2D layers: Frequency and temperature dependent dielectric properties", Mater. Chem Phys., Vol.230, p 337-346, 2019
30. Pareek, A., Paik P., Joardar, J, Murugan, K., and **Borse, P.H**, Effective Fabrication of conducting polymer modified CdS photoanodes for photoelectrochemical cell, Thin Solid Films 2018; 661(1), 84-91 (IF: 1.939, PCI: 0.387) Cite: 0
31. C.W.Ahn, **P.H. Borse,** J.H.Kim, J.Y.Kim, C.Cho, J.H.Yoon, B.Lee, J.S.Bae, J.S.Lee and H.G.Kim Effective charge separation in site-isolated Pt-nanodot deposited $PbTiO_3$ nanotube arrays for enhanced photoelectrochemical water splitting, Applied Catalysis B-Environmental 2018; 224(8), 804-809 (IF: 10.92, PCI: 1.09) Cite: 2
32. Dom, R., Kim H.G. and., **Borse, P.H**, Photo Chemical Hydrogen Generation from Orthorhombic $CaFe_2O_4$ Nanoparticles Synthesized by Different Methods , Chemistry Select 2017; 2 (8), 2556-2564. (IF: 1.505, PCI: 0.501) Cite: 3
33. Dom, R., Baby L.R., , Kim H.G. and., **Borse, P.H**, Fe controlled charge-dynamics in ZnO for Solar hydrogen generation , Intern Jou Hydrogen Energy 2017; 42 (9), 5758-5767. (IF: 4.1, PCI: 1.025) Cite: 3
34. Pareek, A., Paik P., Kim H.G. Joardar J. and., **Borse, P.H**, Nano-architecture based photoelectrochemical water oxidation efficiency enhancement by CdS photoanodes, Mater Res. Express 2017; 4 (2), 026203-026203 (IF: 1.151, PCI: 0.23) Cite:0
35. Pareek, A., Paik P., Kim H.G. and., **Borse, P.H**, Ultrathin MoS_2-MoO_3 nanosheets functionalized CdS photoanodes for effective charge transfer in photoelectrochemical (PEC) cells , Jou Mat Chem A 2017; 5 (4), 1541-1547 (IF: 9.61, PCI: 2.402) Cite: 6
36. Pareek, A., Thotakuri R., Dom R, Kim H.G. and., **Borse, P.H**, Nanostructure Zn-Cu co-doped CdS chalcogenide electrodes for opto-electric-power and H_2 generation , Intern Jou Hydrogen Energy, 2017; 42 (1), 125-132 (IF: 4.1, PCI: 0.82) Cite:1
37. **P.H. Borse**, "Nanostructured Electrodes of Metal Sulfide-Chalcogenides for Energy Applications", Nanotech Insights, 2016; 7 (3 & 4), 22-28. (IF: x.0, PCI: 0.xx) Cite:x
38. Rani, S., **Borse, P.H.**, Pareek, A., Rajalakshmi, N., Dhathathreyan, K.S. Photo-current enhancement in carbon quantum dots functionalized titania nanotube arrays, Journal of Nanoscience and Nanotechnology, 2016; 16 (6), 5999-6004. (IF: 1.6, PCI: 0.32) Cite:0
39. Pareek, A., Gopalakrishnan A., **Borse, P.H.** Efficiency and stability aspects of CdS photo anodes for solar hydrogen generation technology, Journal of Physics: Conference Series 2016;755, 012006
40. Pareek, A., Paik, P., **Borse, P.H.** Stable hydrogen generation from Ni- and Co-based co-catalysts in supported CdS PEC cell Dalton Transactions, 2016; 45 (27), 11120-11128. (IF: 4.099, PCI: 1.366) Cite:3
41. Murugan, K., Joardar, J., Gandhi, A.S., Murty, B.S., **Borse, P.H.** Photo-induced monomer/dimer kinetics in methylene blue degradation over doped and phase controlled nano-TiO_2 films RSC Advances, 2016; 6 (49), 43563-43573. (IF: 3.12, PCI: 0.622)Cite:2
42. Dom, R., **Borse, P.H.**, Hong, K.-S., Choi, S., Lee, B.S., Ha, M.G., Kim, J.P., Jeong, E.D., Kim, H.G. Nanocrystalline magnesium ferrite prepared for photocatalytic applications by using the polymerized complex method, Journal of the Korean Physical Society, 2015; 67 (9), 1639-1645. (IF: 0.42, PCI: 0.047) Cite:2
43. Pareek, A., Paik, P., Borse, P.H, **Borse, PH**. Role of transition metal-hydroxide (M-OH_x, M=Mn, Fe, Ni, Co) Co-catalyst loading: Efficiency and stability of CdS photoanode Materials Research Society Symposium Proceedings 2015, 1776, 1-6. (IF: 0.3, PCI: 0.1) Cite: 3
44. Dom, R, Chary, AS , **Borse, PH**. Solar hydrogen generation from spinel $ZnFe_2O_4$ photocatalyst: Effect of synthesis methods. INTERNATIONAL JOURNAL OF ENERGY RESEARCH 2015;39(10):1378-1390. (IF: 2.73, PCI: 0.91) Cite: 28
45. Pareek, A., Paik, P., **Borse** PH. Nanoniobia modification of CdS photoanode for an efficient and stable photoelectrochemical cell. Langmuir 2014;30(51):15540-15549. (IF: 4, PCI: 1.33) Cite:23

46. Dom, R., Kim, H.G., **Borse** PH. Efficient hydrogen generation over (100)-oriented ZnO nanostructured photoanodes under solar light. CrystEngComm 2014;16(12): 2432-2439. (IF: 3.474, PCI:1.158) Cite: 13
47. Pareek, A., Purbia, R., Paik, P., Hebalkar, N.Y., Kim, H.G., **Borse** PH. Stabilizing effect in nano-titania functionalized CdS photoanode for sustained hydrogen generation. Int J Hydrogen Energy 2014;39(9): 4170-4180. (IF: 4.1, PCI: 0.6833) Cite: 20
48. **Borse** PH, Lim, K.T., Yoon, J.-H., Bae, J.S., Jeong, E.D., Kim, H.G. Investigation of the physico-chemical properties of $Sr_2FeNb_{1-x}W_xO_6$ (*0.0 ≤ x ≤ 0.1*) for visible-light photocatalytic water-splitting applications. Journal of the Korean Physical Society 2014;64(2): 295-300. (IF: 0.42, PCI: 0.07) Cite:3
49. **Borse** PH., Das D. Advance Workshop Report on Evaluation of Hydrogen Producing Technologies for Industry Relevant Application ARCI, Hyderabad, India 8–9 February 2013(Vol36,p811470,2013-erratum). Int J Hydrogen Energy 2014;39(4):1903-1903. (IF: 4.1, PCI: 2.05) Cite: 0
50. Pareek, A., Paik, P., **Borse** PH. Characterization of Nano-Titania Modified CdS /Polysulfide Electrolyte Interface by Utilizing Mott-Schottky and Electrochemical Impedance Spectroscopy. Electroanalysis 2014;26(11):2403-2407. (IF: 3.012, PCI: 1.004) Cite: 4
51. Cha, Y.J., Bae, J.S., Hong, T.E., Kim, H.G., **Borse** PH. Structural, optical and visible-light photocatalytic properties of $Sr_3FeNb_2O_9$ oxide. Journal of the Korean Physical Society 2014;65(4):520-525. (IF: 0.42, PCI: 0.084) Cite:1
52. Hong, K.S., Jeong, E.D., Kim, H.G., **Borse** PH. Optical properties and glass-forming region of the K_2O-Sm_2O_3-TeO_2 glass system. Journal of the Korean Physical Society 2014;65(9):1453-1456. (IF: 0.42, PCI: 0.102) Cite:0
53. Vijayasankar, K., Hebalkar, N.Y., Kim, H.G., **Borse** PH. Controlled band energetics in Pb-Fe-Nb-O metal oxide composite system to fabricate efficient visible light photocatalyst. Journal of Ceramic Processing Research 2013;14(4):557-562. (IF: 0.39, PCI: 0.1) Cite:1
54. Pareek, A., Hebalkar, N.Y., **Borse** PH. Fabrication of a highly efficient and stable nano-modified photoanode for solar H2 generation. RSC Advances 2013;3(43):19905-19908. (IF: 3.12, PCI: 1.04)Cite:11
55. Dom R, Baby L.R., **Borse** PH. Enhanced solar photoelectrochemical conversion efficiency of ZnO:Cu electrodes for water-splitting application. International Journal of Photoenergy, 2013, Art. No. 928321. (IF: 1. 27, PCI: 0.423)Cite:19
56. **Borse** PH., Das D. Advance Workshop Report on Evaluation of Hydrogen Producing Technologies for Industry Relevant Application ARCI, Hyderabad, India 8–9 February 2013. Int J Hydrogen Energy 2013;38(11):11470-11471. (IF: 4.1, PCI: 2. 05) Cite: 2
57. Dom R, Siva Kumar G., Hebalkar NY, Joshi S.V., **Borse** PH. Eco-friendly ferrite nano-composite photoelectrode for improved solar hydrogen generation. RSC Advances 2013 ;3(35):15217-15224. (IF: 3.12, PCI: 0.624)Cite:14
58. Pareek A, Dom R, **Borse** PH. Fabrication of large area nanorod like structured CdS photoanode for solar H_2 generation using spray pyrolysis technique. Int J Hydrogen Energy 2013;38(1):36-44. (IF: 4.1, PCI: 1.366) Cite: 23
59. Dom R, Subasri R, Hebalkar NY, Chary AS, **Borse** PH. Synthesis of a hydrogen producing nanocrystalline $ZnFe_2O_4$ visible light photocatalyst using a rapid microwave irradiation method. RSC Advances 2012;2(33):12782-91. (IF: 3.12, PCI: 0.624)Cite:43
60. Jeong ED, Yu SM, Yoon JH, Bae JS, Hong TE, Cho CR, Lim KT, **Borse** PH, Kim HG. Formation kinetics of crystalline $Ti_{1-x}Cr_xO_2$ photocatalyst from its amorphous powder. Journal of Ceramic Processing Research 2012;13(6):672-6. (IF: 0.39, PCI: 0.04) Cite:0
61. Jeong ED, Yu SM, Yoon JH, Bae JS, Cho CR, Lim KT, **Borse** PH, Kim HG. The co-dopant concentration dependence on visible light photocatalytic efficiency in $SrTi_{1-x}Fe_{[x/2]}Cr_{[x/2]}O_3$ ($0.01 \le x \le 0.2$) perovskite photocatalysts. Journal of Ceramic Processing Research 2012;13(5):517-22. (IF: 0.39, PCI: 0.048) Cite:2
62. **Borse** PH, Cho CR, Yu SM, Yoon JH, Hong TE, Bae JS, Jeong ED, Kim HG. Improved photolysis of water from ti incorporated double perovskite Sr_2FeNbO_6 lattice. Bulletin of the Korean Chemical Society 2012;33(10):3407-12. (IF: 0.602, PCI: 0.075) Cite:4

63. Dom R, **Borse** PH, Cho CR, Lee JS, Yu SM, Yoon JH, Hong TE, Jeong ED, Kim HG. Synthesis of $SrFe_{12}O_{19}$ and $Sr_7Fe_{10}O_{22}$ systems for visible light photocatalytic studies. Journal of Ceramic Processing Research 2012;13(4):451-6. (IF: 0.39, PCI: 0.044) Cite:12
64. Jeong ED, Yu SM, Yoon JY, Bae JS, Cho CR, Lim KT, Dom R, **Borse** PH, Kim HG. Efficient visible light photocatalysis in cubic Sr_2FeNbO_6. Journal of Ceramic Processing Research 2012;13(3):305-9. (IF: 0.39, PCI: 0.039) Cite:6
65. **Borse** PH, Kim JY, Lee JS, Lim KT, Jeong ED, Bae JS, Yoon J-, Yu SM, Kim HG. Ti-dopant-enhanced photocatalytic activity of a $CaFe_2O_4/MgFe_2O_4$ bulk heterojunction under visible-light irradiation. Journal of the Korean Physical Society 2012;61(1):73-9. (IF: 0.42, PCI: 0.046) Cite:5
66. **Borse** PH. Photocatalytic and photoelectro-chemical investigations of Fe/ Sn/ Nb containing oxides for energy application: Comparative study. Journal of Physics: Conference Series 2012;365(1). (IF*: 0.45, PCI: 0. 45) Cite:0
67. **Borse** PH, Cho CR, Lim KT, Hong TE, Jeong ED, Yoon JH, Yu SM, Kim HG. Comparision of Zn_2TiO_4 and rutile TiO_2 photocatalysts for H_2 production under UV and near-visible light irradiation. Journal of Ceramic Processing Research 2012;13(1):42-6. (IF: 0.39, PCI: 0.048) Cite:12
68. Dom R, Sivakumar G, Hebalkar NY, Joshi SV, **Borse** PH. Deposition of nanostructured photocatalytic zinc ferrite films using solution precursor plasma spraying. Mater Res Bull 2012;47(3):562-70. (IF: 2.87, PCI: 0.575) Cite:18
69. **Borse** PH, Cho CR, Lim KT, Bae JS, Jeong ED, Hong TE, Kim HJ, Kim HG. Effect of co-dopant ratio (Cr/Fe) on visible light photocatalytic activity of Cr-Fe co-doped TiO_2 nanoparticles. Journal of Ceramic Processing Research 2011;12(5):592-8. (IF: 0.39, PCI: 0.048) Cite:3
70. Jeong ED, Jin JS, Kim HJ, Hong TE, Cho CR, Lim KT, Kim HG, **Borse** PH. Metal-ion dependent band energetics in $SrM_{0.5}Ti_{0.5}O_3$ (M = ru, rh, ir, pt, pd) like structures for solar applications. Journal of Ceramic Processing Research 2011;12(6):712-5. (IF: 0.39, PCI: 0.048) Cite:0
71. **Borse** PH, Jang JS, Lee JS, Khan FN, Ha MG, Kim JP, Bae JS, Jeong ED, Kim HG. Enhanced photocatalytic properties due to electron-rich ti-ion doping in ZnFe2O4 under visible light irradiation. Journal of the Korean Physical Society 2011;59(4):2750-5. (IF: 0.42, PCI: 0.046) Cite:5
72. **Borse** PH, Cho CR, Lim KT, Lee YJ, Bae JS, Jeong ED, Kim HG. Ratio dependence of the visible light photocatalytic efficiency for $Zn2Ti_{0.9}Cr_yFe_{[0.1-y]}O_4$: Cr/Fe ($0.02 < y < 0.08$) photocatalyst synthesized by using a solid state reaction method. Journal of the Korean Physical Society 2011;59(1):65-70. (IF: 0.42, PCI: 0.06) Cite:7
73. **Borse** PH, Cho CR, Lim KT, Lee YJ, Hong TE, Bae JS, Jeong ED, Kim HJ, Kim HG. Synthesis of barium ferrite for visible light photocatalysis applications. Journal of the Korean Physical Society 2011;58(6):1672-6. (IF: 0.42, PCI: 0.046) Cite:15
74. Kim HG, **Borse** PH, Jang JS, Ahn CW, Jeong ED, Lee JS. Engineered nanorod perovskite film photocatalysts to harvest visible light. Adv Mater 2011;23(18):2088-92. (IF: 19.791, PCI:3.298) Cite:53
75. Dom R, Subasri R, Radha K, **Borse** PH. Synthesis of solar active nanocrystalline ferrite, MFe_2O_4 (M: Ca, zn, mg) photocatalyst by microwave irradiation. Solid State Commun 2011;151(6):470-3. (IF: 1.458, PCI:0.3645) Cite:109
76. Jang JS, **Borse** PH, Lee JS, Lim KT, Jung O-, Jeong ED, Bae JS, Kim HG. Photocatalytic hydrogen production in water-methanol mixture over iron-doped $CaTiO_3$. Bulletin of the Korean Chemical Society 2011;32(1):95-9. (IF: 0.602, PCI: 0.075) Cite:25
77. Jang JS, **Borse** PH, Lee JS, Lim KT, Cho CR, Jeong ED, Ha MG, Won MS, Kim HG. Photocatalytic performance of nanocrystalline $Bi_5Ti_3FeO_{15}$ layered perovskite under visible light. Journal of Nanoscience and Nanotechnology 2010;10(8):5008-14. (IF: 1.6, PCI: 0.178) Cite:6
78. Jang JS, Lee JS, **Borse** PH, Lim KT, Jung O-, Jeong ED, Won MS, Kim HG. Platinum nanoparticle co-catalyst-induced improved photoelectrical properties in a chromium-doped

SrTiO3 photocatalyst. Journal of the Korean Physical Society 2009;55(6):2470-5. (IF: 0.42, PCI: 0.0525) Cite:8

79. Jang JS, **Borse** PH, Lee JS, Lim KT, Jung O-, Jeong ED, Bae JS, Won MS, Kim HG. Energy band structure and photocatalytic property of Fe-doped Zn_2TiO_4 material. Bulletin of the Korean Chemical Society 2009;30(12):3021-4. (IF: 0.602, PCI: 0.0668) Cite:24
80. **Borse** PH, Yoon SS, Jang JS, Lee JS, Hong TE, Jeong ED, Won MS, Jung O-, Shim YB, Kim HG. Formation of layered $Bi_5Ti_3FeO_{15}$ perovskite in Bi_2O_3-TiO_2-Fe_2O_3 containing system. Bulletin of the Korean Chemical Society 2009;30(12):3011-5. (IF: 0.602, PCI: 0.060) Cite:2
81. Jang JS, Yoon SS, **Borse** PH, Lim KT, Hong TE, Jeong ED, Jung O-, Shim YB, Kim HG. Synthesis and characterization of aurivillius phase $Bi_5Ti_3FeO_{15}$ layered perovskite for visible light photocatalysis. J Ceram Soc Jpn 2009;117(1371):1268-72. (IF: 0.828, PCI: 0.092) Cite:22
82. Kim HG, **Borse** PH, Jang JS, Jeong ED, Jung O-, Suh YJ, Lee JS. Fabrication of $CaFe_2O_4$/$MgFe_2O_4$ bulk heterojunction for enhanced visible light photocatalysis. Chemical Communications 2009(39):5889-91. (IF: 6.319, PCI: 0.902) Cite:133
83. **Borse** PH, Jang JS, Hong SJ, Lee JS, Jung JH, Hong TE, Ahn CW, Jeong ED, Hong KS, Yoon JH, Kim HG. Photocatalytic hydrogen generation from water-methanol mixtures using nanocrystalline $ZnFe_2O_4$ under visible light irradiation. Journal of the Korean Physical Society 2009;55(4):1472-7. (IF: 0.42, PCI: 0.060) Cite:34
84. Jang JS, **Borse** PH, Lee JS, Jung O-, Cho C-, Jeong ED, Ha MG, Won MS, Kim HG. Synthesis of nanocrystalline $ZnFe_2O_4$ by polymerized complex method for its visible light photocatalytic application: An efficient photo-oxidant. Bulletin of the Korean Chemical Society 2009;30(8):1738-42. (IF: 0.602, PCI: 0.0668) Cite:28
85. Jeong ED, **Borse** PH, Jang JS, Lee JS, Cho CR, Bae JS, Park S, Jung O-, Ryu SM, Won MS, Kim HG. Physical and optical properties of nanocrystalline calcium ferrite synthesized by the polymerized complex method. Journal of Nanoscience and Nanotechnology 2009;9(6):3568-73. (IF: 1.6, PCI: 0.145) Cite:5
86. Hong SJ, Jun H, **Borse** PH, Lee JS. Size effects of WO_3 nanocrystals for photooxidation of water in particulate suspension and photoelectrochemical film systems. Int J Hydrogen Energy 2009;34(8):3234-42. (IF: 4.1, PCI:0.82) Cite: 190
87. Jang JS, Hong SJ, Lee JS, **Borse** PH, Jung O-, Hong TE, Jeong ED, Won MS, Kim HG. Synthesis of zinc ferrite and its photocatalytic application under visible light. Journal of the Korean Physical Society 2009;54(1):204-8. (IF: 0.42, PCI: 0.0668) Cite:50
88. **Borse** PH, Jun H, Choi SH, Hong SJ, Lee JS. Phase and photoelectrochemical behavior of solution-processed Fe_2O_3 nanocrystals for oxidation of water under solar light. Appl Phys Lett 2008;93(17) 173103 . (IF: 3.411, PCI: 0. 6822) Cite:41
89. Jeong ED, **Borse** PH, Jang JS, Lee JS, Jung O-, Chang H, Jin JS, Won MS, Kim HG. Hydrothermal synthesis of Cr and Fe co-doped TiO_2 nanoparticle photocatalyst. Journal of Ceramic Processing Research 2008;9(3):250-3. (IF: 0.39, PCI: 0.043) Cite:35
90. Joshi UA, Jang JS, **Borse** PH, Lee JS. Microwave synthesis of single-crystalline perovskite BiFeO3 nanocubes for photoelectrode and photocatalytic applications. Appl Phys Lett 2008;92(24). (IF: 3.411, PCI: 0. 6822) Cite:183
91. Jang JS, **Borse** PH, Lee JS, Choi SH, Kim HG. Indium induced band gap tailoring in ag $Ga_{1-x}in_xS_2$ chalcopyrite structure for visible light photocatalysis. J Chem Phys 2008;128(15). (IF: 2.965, PCI: 0. 593) Cite:48
92. Kim HG, **Borse** PH, Jang JS, Jeong ED, Lee JS. Enhanced photochemical properties of electron rich W-doped $PbBi_2Nb_2O_9$ layered perovskite material under visible-light irradiation. Mater Lett 2008;62(8-9):1427-30. (IF: 2.68, PCI: 0. 536) Cite:21
93. Bae SW, **Borse** PH, Lee JS. Dopant dependent band gap tailoring of hydrothermally prepared cubic SrTixM1-xO3 (M=Ru,rh,ir,pt,pd) nanoparticles as visible light photocatalyst. Appl Phys Lett 2008;92(10) 104107. (IF: 3.411, PCI: 1.137) Cite:61
94. Jang JS, Gyu Kim H, **Borse** PH, Lee JS. Simultaneous hydrogen production and decomposition of H_2S dissolved in alkaline water over CdS - TiO2 composite photocatalysts under visible light irradiation. Int J Hydrogen Energy 2007;32(18):4786-91. (IF: 4.1, PCI:1.025) Cite: 104

95. Bae SW, **Borse** PH, Hong SJ, Jang JS, Lee JS, Jeong ED, Hong TE, Yoon JH, Jin JS, Kim HG. Photophysical properties of nanosized metal-doped TiO_2 photocatalyst working under visible light. Journal of the Korean Physical Society 2007;51(SUPPL. 1):S22-6. (IF: 0.42, PCI: 0.060) Cite:32
96. Hong SJ, **Borse** PH, Ji SM, Jang JS, Lee JS, Jeong ED, Kim HG, Pak HK. Structure of $PbBi_2Nb_2O_9$ and its cr-doped layered perovskite system and their photocatalytic activities. Journal of the Korean Physical Society 2007;51(SUPPL. 1):S27-31. (IF: 0.42, PCI: 0.07525) Cite:12
97. Ji SM, Jun H, Jang JS, Son HC, **Borse** PH, Lee JS. Photocatalytic hydrogen production from natural seawater. J Photochem Photobiol A 2007;189(1):141-4. (IF: 2.625, PCI: 0.4375) Cite:65
98. **Borse** PH, Joshi UA, Ji SM, Jang JS, Lee JS, Jeong ED, Kim HG. Band gap tuning of lead-substituted $BaSnO_3$ for visible light photocatalysis. Appl Phys Lett 2007;90(3) 034103. (IF: 3.411, PCI: 0.4872) Cite:63
99. Jeong ED, Ha MG, Won MS, Kim HG, Pak HK, **Borse** PH, Ji SM, Lee JS. Photophysical properties and electronic structure of highly donor doped (110) layered perovskite material. Journal of the Korean Physical Society 2006;49(SUPPL. 2):S671-4. (IF: 0.42, PCI: 0.07525) Cite:13
100. **Borse** PH, Lee JS, Kim HG. Theoretical band energetics of $Ba(M_{0.5}Sn_{0.5})O_3$ for solar photoactive applications. J Appl Phys 2006;100(12)124915. (IF: 2.176, PCI: 0.7253) Cite:43
101. Jeong ED, Ha MG, Pak HK, Ryu BK, **Borse** PH, Lee JS, Komatsu T, Kim HJ, Kim HG. Thermal stabilities, physical and optical properties of K_2O-Na_2O-Nb_2O_5-TeO_2 glasses. Journal of Industrial and Engineering Chemistry 2006;12(6):926-31. (IF: 2. 843, PCI: 0.316) Cite:5
102. Jeong ED, **Borse** PH, Lee JS, Ha MG, Pak HK, Komatsu T, Kim HG. Second harmonic generation and fabrication of transparent K_2O-Na_2O-Nb_2O_5-TeO_2 glass-ceramics. Journal of Industrial and Engineering Chemistry 2006;12(5):790-4. (IF: 2. 843, PCI: 0.406) Cite:6
103. Kim HG, Jeong ED, **Borse** PH, Jeon S, Yong K, Lee JS, Li W, Oh SH. Photocatalytic ohmic layered nanocomposite for efficient utilization of visible light photons. Appl Phys Lett 2006;89(6) 64103. (IF: 3.411, PCI: 0.426) Cite:72
104. Kim HG, Becker OS, Jang JS, Ji SM, **Borse** PH, Lee JS. A generic method of visible light sensitization for perovskite-related layered oxides: Substitution effect of lead. Journal of Solid State Chemistry 2006;179(4):1214-8. (IF: 2. 299, PCI: 0.38316) Cite:88
105. **Borse** PH, Vogel W, Kulkarni SK. Effect of pH on photoluminescence enhancement in pb-doped ZnS nanoparticles. J Colloid Interface Sci 2006;293(2):437-42. (IF: 5. 091, PCI: 1.697) Cite:42
106. **Borse** PH, Kim HG, Lee JS. Difference in electronic structure between tetragonal and cubic $SrNbO_2N$. J Appl Phys 2005;98(4). (IF: 2.176, PCI: 0.7253) Cite:7
107. Kim HG, **Borse** PH, Choi W, Lee JS. Photocatalytic nanodiodes for visible-light photocatalysis. Angewandte Chemie - International Edition 2005;44(29):4585-9. (IF: 12.102, PCI: 3.0255) Cite:423
108. Ji SM, **Borse** PH, Kim HG, Hwang DW, Jang JS, Bae SW, Lee JS. Photocatalytic hydrogen production from water-methanol mixtures using N-doped $Sr_2Nb_2O_7$ under visible light irradiation: Effects of catalyst structure. Physical Chemistry Chemical Physics 2005;7(6):1315-21. (IF: 4.123, PCI: 0.589) Cite:93
109. **Borse** PH, Yi JM, Je JH, Choi SD, Hwu Y, Ruterana P, Nouet G. Formation of magnetic ni nanoparticles in x-ray irradiated electroless solution. Nanotechnology 2004;15(6):S389-92. (IF: 3.44, PCI: 0.4914) Cite:16
110. **Borse** PH, Yi JM, Je JH, Tsai WL, Hwu Y. pH dependence of synchrotron x-ray induced electroless nickel deposition. J Appl Phys 2004;95(3):1166-70. (IF: 2.176, PCI: 0.4352) Cite:21
111. **Borse** PH, Kankate LS, Dassenoy F, Vogel W, Urban J, Kulkarni SK. Synthesis and investigations of rutile phase nanoparticles of TiO_2. J Mater Sci : Mater Electron 2002;13(9):553-9. (IF: 2.019, PCI: 0.3365) Cite:42

112. Ranade MR, Navrotsky A, Zhang HZ, Banfield JF, Elder SH, Zaban A, **Borse** PH, Kulkarni SK, Doran GS, Whitfield HJ. Energetics of nanocrystalline TiO_2. Proc Natl Acad Sci U S A 2002;99(SUPPL. 2):6476-81. (IF: 9.661, PCI: 0.9661) Cite:490

113. Kulkarni SK, Winkler U, Deshmukh N, **Borse** PH, Fink R, Umbach E. Investigations on chemically capped CdS, ZnS and ZnCdS nanoparticles. Appl Surf Sci 2001;169-170:438-46. (IF: 4.439, PCI: 0.73983) Cite:132

114. Vogel W, **Borse** PH, Deshmukh N, Kulkarni SK. Structure and stability of monodisperse 1.4-nm ZnS particles stabilized by mercaptoethanol. Langmuir 2000;16(4):2032-7. (IF: 4, PCI: 1.0) Cite:134

115. **Borse** PH, Srinivas D, Shinde RF, Date SK, Vogel W, Kulkarni SK. Effect of Mn2+ concentration in ZnS nanoparticles on photoluminescence and electron-spin-resonance spectra. Physical Review B - Condensed Matter and Materials Physics 1999;60(12):8659-64. (IF: 3. 836, PCI: 0.6393) Cite:154

116. **Borse** PH, Deshmukh N, Shinde RF, Date SK, Kulkarni SK. Luminescence quenching in ZnS nanoparticles due to Fe and Ni doping. J Mater Sci 1999;34(24):6087-93. (IF: 2. 993, PCI: 0.5198) Cite:106

117. **Borse** PH, Deshmukh N & Kulkarni SK. Semiconductor Nanoparticles 1, *Physics Education 1998;* 14: 333.

118. Kumar PM, **Borse** P, Rohatgi VK, Bhoraskar SV, Singh P, Sastry M. Synthesis and structural characterization of nanocrystalline aluminium oxide. Mater Chem Phys 1994;36(3-4):354-8. (IF: 2.101, PCI: 0.35) Cite:33

n. List of Patents

(3 under preparation)

1. Indian patent filed on, PROCESS OF ELECTROLESS NICKEL/NICKEL PHOSPHIDE (EN) DEPOSITION ON GRAPHITE SUBSTRATES, by Karanjai M, **Borse P.H.**, Kumar Ayagari Shivkumar , Indian Patent Appl No 201811041418 dated 01-11-2018
2. Indian patent granted on " Method of Deposition of double perovskite of Sr Fe Nb-O film on substrate by spray coating technique & the coated substrate thereof" invented by **P.H.Borse**, - IN 2014DE01151A, Nov 6, 2015

o. International and National Conference /proceedings (*to be updated*)

1. **Pramod H Borse** (invited talk); Sensor Development –ARCI perspectives, at One day workshop on Advanced Sensor Material Devices (ASMD 2019) at ARCI, Hyderabad India, held on 2019.08.23
2. **Pramod H Borse** (invited talk); Nano-Engineering of photoanode surface for photoelectrochemical hydrogen generation, at 6th International hydrogen and fuel cell conference (IHFC 2017) at Pune, India, held on 2017.12.10-2017.12.12
3. **Pramod H Borse;** Design and Fabrication of Photo Electrode Nano Materials for Solar Hydrogen and other Energy Application, at Indo Korea Workshop on Computational Material Science, 2017 at JNCASR, Bangaluru, held on 2017.03.24-2017.03.25
4. **Pramod H Borse;** *(Invited talk)*Nano-Functionalization of Photoelectrode for Solar Hydrogen Generation, at National conferenc on Hydrogen Energy & Advanced Materials (NCHEAM-2017), 2017 at University of Kerala, Trivendram, held on 2017.03.16-2017.03.17

5. Sanyam Jain, R.Gopalan & Pramod H Borse**;** Spray Pyrolysis Deposition of Tin Sulfide for Thermoelectric Energy Application, at Chemical Engineering towards Sustainable Development (CHEMCON 2016) at IIT Chennai, held on 2016.12.27-2016.12.30.
6. **Pramod H Borse;** Recent Developments in Dry and Wet Solar Cell, at Short Term Training on Advances in Drinking Water Technology & Solar Energy, 2016 at SGGSIT, Nanded, held on 2016.12.23-2016.12.25
7. Jyothy Chandran & Pramod H Borse**;** Simple Large Area Deposition of Nanostructure Metal Sulfide and Selenide Films for Opto-electric and Thermoelectric Application, at 1st International Conference on Coatings, Thin Films, Multilayer Devices & Systems, at NFTDC, Hyderabad, held on 2016.12.14-2016.12.16
8. **Pramod H Borse;** *(Invited talk)*Efficiency and stability aspects of CdS photoanode for solar hydrogen generation technology, at Inetrnational conferenc on recent trends in Physics, 2016 at DAAU, Indore, held on 2016.02.13-2016.02.14.
9. R.Dom & P.H.Borse**;** Comparison of Water Photo-splitting properties of Nanocrystalline Zinc Ferrite Prepared by Polymerized Complex and solid state reaction Method**,** EMEE2015, at CBIT, 2015.03.23
10. **Pramod H Borse,** *(Invited talk)* Hunt for efficient and stable hydrogen producing photocatalytic nano/materials-a ladder to renewable energy, in One day national seminar on Nanomaterial Research, at Sri Ramakrishna Engineering College, Coimbatore, Tamilnadu on 2015.02.21
11. Alka Pareek, & P.H.Borse**;** Electrochemical characterization of Ag-loaded nano-titania modified CdS /polysulphide electrolyte interface, International conference on environment and energy , at JNTU Hyderabad on 2014.12.15-2014.12.17
12. A.Pareek & P.H.Borse; Characterization of nano-titania modified CdS /polysulphide electrolyte interface by utilizing electrochemical impedance spectroscopy**, at** 11th ISEAC-International Discussion Meet on Electrochemistry and its Applications (11th ISEAC-DM-2014)**,** at Amritsar, 2014.02.20-2014.02.25
13. Rounith R. Malyala and P.H.Borse; Investigation of cell performance with cost effective cation-exchange membrane for a two-compartment "*solar light driven photoelectrochemical cell,* Chemcon 2013, held by Indian Chemical Engineering congress at ICT, Mumbai 2013.12.27-2013.12.30
14. A. Pareek & P.H.Borse; Stability improvement of CdS photoanode by control over adsorbed titania nanoparticle phase, IUMRS- 2013, IISC, Bangalore, on 2013.12.16-2013.12.20
15. Dom R. Chary A.S., **Borse P.H**.; Investigation of Physico-Chemical Properties of M Fe_2O_4 (M: Ca, Zn, Mg) Photocatalysts Synthesized by Microwave Irradiation at APMS 2013 *National* conference organized by Vasavi college of engineering, Hyderabad India –2013.07.19-2013.07.20.
16. Dom R. Chary A.S., **Borse P.H**.; Microwave synthesis of solar active nanoscrystalline $ZnFe_2O_4$ photocatalysts at NSAM *National* seminar -2013 organized by Department of physics, Osmania University, Hyderabad, Hyderabad India –2013.02.27-2013.02.28
17. Dom R, Siva Kumar G., Joshi S.V., **Borse** PH. Photoelectrochemical characterization of Fe_2O_3, $ZnFe_2O_4$ and composite photoelectrodes for hydrogen generation application, ELAC-2013 ***International*** conference conducted by society for electroanalytical chemistry of India at Ramoji film city, Hyderabad, on 2013.01.16-2013.01.20.
18. Pareek A, **Borse** P.H.; Photoelectrochemical characterization of metal semiconductor nanoparticle modified nanostructured CdS Photoelectrodes, ELAC-2013 ***International*** conference conducted by society for electroanalytical chemistry of India at Ramoji film city, Hyderabad, on 2013.01.16-2013.01.20.
19. **Borse** PH.; Photocatalytic and photoelectro-chemical investigations of Fe/ Sn/ Nb containing oxides for energy application: comparative study (*invited talk*), International conference on Recent trends in Physics (ICRTP2012) Devi Ahilya University, Indore, India --2012.02.04-2012.02.05
20. **Pramod H.Borse**, 2007, Solution-processed Fe_2O_3 nanocrystal photoanodes for PEC oxidation of H_2O under visible light *2007 Korea-Japan Symposium on Frontier Photo Science, S. Korea,* 2007.11.21-2007.10.25
21. Jum Suk Jang, Hyun Gyu Kim, **Pramod H. Borse** and Jae Sung Lee: (2006) Design of Nanocomposite Photocatalysts for Solar Hydrogen Production , *EU/ASIA workshop on clean production and nanotechnologies, S.Korea,* 2006.10.25-26.
22. Hyun G. Kim, **Pramod H. Borse**, Jae S. Lee (2005) Development of photocatalytic nano-diodes for visible light photocatalysis *2005 Korea-Japan Symposium on Frontier Photo Science, S. Korea,*

2005.10.07-2005.10.10.

23. J.S. Jang, S.M. Ji, H.G. Kim, S.W. Bae, D.W. Hwang, **P.H. Borse** and J.S. Lee: (2005) H_2 Production over NBC Photocatalyst Based on Bulk CdS under Visible Light Irradiation (λ≥420nm) *KICHE Meeting 2005. S.Korea* –2005.04.22-2005.04.23.
24. S.M. Ji, J.S. Jang, H.G. Kim, S.W. Bae, D.W. Hwang,, **P.H.Borse** and J. S. Lee :(2005) Photocatalytic H_2 Production from H_2O-CH_3OH using N- $NaTaO_3$ under VL irradiation(λ≤420nm) *KICHE Meeting 2005. S.Korea* –2005.04.22-2005.04.23.
25. S.M. Ji, **P.H. Borse**, HG. Kim and J.S. Lee:(2004) Electronic band structure and photo-catalytic properties of $Sr_2Nb_2O_7$ and its nitride *Energy conversion & storage National workshop, S. Korea*—2004.06.17-2004.06.19.
26. **Pramod H. Borse** & J.H.Je :(2003)Formation of magnetic Ni nanoparticles in X-ray irradiated electroless solution *Inter. Symp. of Active Nano-Characterization & Technology, Tsukuba, Japan*—2003.11.11-2003.11.14.
27. **Pramod H. Borse** & J.H.Je :(2003) Synchrotron x-ray induced nanoparticles deposition *Inter. Workshop-Novel Coherence based Radiology Techniques, Jeju Korea* --2003.02.19-2003.02.22.
28. **Pramod H. Borse** & J.H.Je :(2002)Synchrotron induced nanocrystalline nickel deposition *Korean Metals and Materials (meeting), Seoul, S. Korea-- 2002.10.25-2002.10.26.*
29. **Pramod H. Borse** : (2001) Investigations on Mn doped ZnS nanoparticles *Inter. Workshop-Advanced Materials for Nanotechnology, POSTECH, S.Korea* -2001.11.22-2001.11.23.
30. Ranade, M R; Navrotsky, A; Zhang, H Z; Banfield, J F; Elder, S H; Zaban, A; **Borse, P H,** Kulkarni, S K; Doran, G S; Whitfield, H J,; Energetics of nanocrystalline TiO_2. *Proceedings of the National Academy of Sciences of the United States of America* Volume 99, Supplement 2, April 30, 2002, Pages 6476-6481.

p. Invited and expert talk (*past few years only provided)*

1. Invited lecture "Material Nanostructuring for sensor applications -Technology advancements at ARCI" in workshop on "Standardization of Sensors, Devices, and their Applications"' organized by TIET, Patiala on 22-23rd February 2022
2. Invited lecture "Nano Engineering of photocatalysts for Solar Hydrogen Energy Generation" at National Webinar on "Research Trending Areas in Humanities and Basic Sciences" organized by ACE Engineering College, Hyderabad on 15-20 November 2021
3. Invited lecture on "Advanced energy materials for hydrogen renewable energy harvesting– Photocatalytic H_2" at AICTE sponsored 5 Days ATAL FDP on "EMERGING MATERIALS, SENSORS AND DEVICES FOR IoT AND INDUSTRY 4.0" C V Raman Global University, Bhubaneswar during 23-27 August 2021
4. Invited lecture "Material nanostructuring for sensor applications –Tech. Development at ARCI" at AICTE sponsored 5 Days ATAL FDP on "EMERGING MATERIALS, SENSORS AND DEVICES FOR IoT AND INDUSTRY 4.0" C V Raman Global University, Bhubaneswar during 23-27 August 2021
5. Invited lecture on "Nanostructuring Materials for Solar Hydrogen Energy – Basics and Recent Trends" at one-week faculty development program in NANO MATERIALS-TECHNOLOGIES FOR ENERGY & SENSOR APPLICATIONS (NTESA-2021), GMR Institute of Technology, Rajam on 07 June 2021
6. Invited lecture on "Development of sensors at ARCI and upcoming prospects" at Indian Ceramic Society-Hyderabad Chapter -Online Lecture Series' organized by Indian Ceramic Society, Hyderabad on 19 April 2021
7. Material Nanostructuring for Engineering Applications,- A race towards efficient materials (invited talk) National conference on "Forays of Nanotechnology Research into Multidisciplines" (FONAREM-2020) Gov. Deg. College, Ravulapalem 3-4th March 2020
8. Pramod H Borse (invited talk); Sensor Development –ARCI perspectives, at One day

workshop on Advanced Sensor Material Devices (ASMD 2019) at ARCI, Hyderabad India, held on 2019.08.23

9. Pramod H Borse (invited talk); Nano-Engineering of photoanode surface for photoelectrochemical hydrogen generation, at 6th International hydrogen and fuel cell conference (IHFC 2017) at Pune, India, held on 2017.12.10-2017.12.12

10. Pramod H Borse; Design and Fabrication of Photo Electrode Nano Materials for Solar Hydrogen and other Energy Application, at Indo Korea Workshop on Computational Material Science, 2017 at JNCASR, Bangaluru, held on 2017.03.24-2017.03.25

11. Pramod H Borse; *(Invited talk)* Nano-Functionalization of Photoelectrode for Solar Hydrogen Generation, at National conferenc on Hydrogen Energy & Advanced Materials (NCHEAM-2017), 2017 at University of Kerala, Trivendram, held on 2017.03.16-2017.03.17

12. Sanyam Jain, R.Gopalan & Pramod H Borse; Spray Pyrolysis Deposition of Tin Sulfide for Thermoelectric Energy Application, at Chemical Engineering towards Sustainable Development (CHEMCON 2016) at IIT Chennai, held on 2016.12.27-2016.12.30

13. Pramod H Borse; Recent Developments in Dry and Wet Solar Cell, at Short Term Training on Advances in Drinking Water Technology & Solar Energy, 2016 at SGGSIT, Nanded, held on 2016.12.23-2016.12.25

14. Jyothy Chandran & Pramod H Borse; Simple Large Area Deposition of Nanostructure Metal Sulfide and Selenide Films for Opto-electric and Thermoelectric Application, at 1st International Conference on Coatings, Thin Films, Multilayer Devices & Systems, at NFTDC, Hyderabad, held on 2016.12.14-2016.12.16.

15. Pramod H Borse; Efficiency and stability aspects of CdS photoanode for solar hydrogen generation technology, at Inetrnational conferenc on recent trends in Physics, 2016 at DAAU, Indore, held on 2016.02.13-2016.02.14.

16. R.Dom & P.H.Borse; Comparison of Water Photo-splitting properties of Nanocrystalline Zinc Ferrite Prepared by Polymerized Complex and solid state reaction Method, EMEE2015, at CBIT, 2015.03.23.

17. Pramod H Borse, Hunt for efficient and stable hydrogen producing photocatalytic nano/materials-a ladder to renewable energy, in One day national seminar on Nanomaterial Research, at Sri Ramakrishna Engineering College, Coimbatore, Tamilnadu on 2015.02.21

18. Alka Pareek, & P.H.Borse; Electrochemical characterization of Ag-loaded nano-titania modified CdS /polysulphide electrolyte interface, International conference on environment and energy , at JNTU Hyderabad on 2014.12.15-2014.12.17.

19. A.Pareek & P.H.Borse; Characterization of nano-titania modified CdS /polysulphide electrolyte interface by utilizing electrochemical impedance spectroscopy, at 11th ISEAC-International Discussion Meet on Electrochemistry and its Applications (11th ISEAC-DM-2014), at Amritsar, 2014.02.20-2014.02.25

20. Rounith R. Malyala and P.H.Borse; Investigation of cell performance with cost effective cation-exchange membrane for a two-compartment "*solar light driven photoelectrochemical cell,*Chemcon 2013, held by Indian Chemical Engineering congress at ICT, Mumbai 2013.12.27-2013.12.30.

21. A. Pareek & P.H.Borse; Stability improvement of CdS photoanode by control over adsorbed titania nanoparticle phase, IUMRS- 2013, IISC, Bangalore, on 2013.12.16-2013.12.20

22. Dom R. Chary A.S., Borse P.H.; Investigation of Physico-Chemical Properties of M Fe_2O_4 (M: Ca, Zn, Mg) Photocatalysts Synthesized by Microwave Irradiation at APMS 2013 *National* conference organized by Vasavi college of engineering, Hyderabad India –2013.07.19-

2013.07.20.
23. Dom R. Chary A.S., Borse P.H.; Microwave synthesis of solar active nanoscrystalline $ZnFe_2O_4$ photocatalysts at NSAM *National* seminar -2013 organized by Department of physics, Osmania University, Hyderabad, Hyderabad India –2013.02.27-2013.02.28
24. P.H.Borse, Solar H2 generation from PEC and photochemical method, at National workshop on evaluation of hydrogen producing technologies for industry relevant application, at ARCI, Hyderabad. On 2013.02.08-09.
25. Dom R, Siva Kumar G., Joshi S.V. Borse P.H.; Photoelectrochemical characterization of Fe_2O_3, $ZnFe_2O_4$ and composite photoelectrodes for Hydrogen Generation at 5th ISEAC Triennial conference n Advances and recent trends in electrochemistry, ELAC-2013 at Ramoji film city, Hyderabad, on 2013.01.16-2013.01.20
26. Pareek A, Borse P.H.; Photoelectrochemical characterization of metal semiconductor nanoparticle modified nanostructured CdS Photoelectrodes, ELAC-2013 *International* conference conducted by society for electroanalytical chemistry of India at Ramoji film city, Hyderabad, on 2013.01.16-2013.01.20.
27. **Borse PH.**; Photocatalytic and photoelectro-chemical investigations of Fe/ Sn/ Nb containing oxides for energy application: comparative study (*invited talk*), International conference on Recent trends in Physics (ICRTP2012), Devi Ahilya University, Indore, India -- 2012.02.04-2012.02.05
28. **Pramod H.Borse**, 2007, Solution-processed Fe_2O_3 nanocrystal photoanodes for PEC oxidation of H_2O under visible light *2007 Korea-Japan Symposium on Frontier Photo Science, S. Korea,* 2007.11.21-2007.10.25
29. Jum Suk Jang, Hyun Gyu Kim, **Pramod H. Borse** and Jae Sung Lee: (2006) Design of Nanocomposite Photocatalysts for Solar Hydrogen Production , *EU/ASIA workshop on clean production and nanotechnologies, S.Korea,* 2006.10.25-26.
30. Hyun G. Kim, **Pramod H. Borse**, Jae S. Lee (2005) Development of photocatalytic nano-diodes for visible light photocatalysis *2005 Korea-Japan Symposium on Frontier Photo Science, S. Korea,* 2005.10.07-2005.10.10.
31. J.S. Jang, S.M. Ji, H.G. Kim, S.W. Bae, D.W. Hwang, **P.H. Borse** and J.S. Lee: (2005) H_2 Production over NBC Photocatalyst Based on Bulk CdS under Visible Light Irradiation ($\lambda \geq 420$nm) *KICHE Meeting 2005. S.Korea* –2005.04.22-2005.04.23.
32. S.M. Ji, J.S. Jang, H.G. Kim, S.W. Bae, D.W. Hwang,, **P.H.Borse** and J. S. Lee :(2005) Photocatalytic H_2 Production from H_2O-CH_3OH using N- $NaTaO_3$ under VL irradiation($\lambda \leq 420$nm) *KICHE Meeting 2005. S.Korea* –2005.04.22-2005.04.23.
33. S.M. Ji, **P.H. Borse**, HG. Kim and J.S. Lee:(2004) Electronic band structure and photo-catalytic properties of $Sr_2Nb_2O_7$ and its nitride *Energy conversion & storage National workshop, S. Korea*—2004.06.17-2004.06.19.
34. **Pramod H. Borse** & J.H.Je :(2003)Formation of magnetic Ni nanoparticles in X-ray irradiated electroless solution *Inter. Symp. of Active Nano-Characterization & Technology, Tsukuba, Japan*—2003.11.11-2003.11.14.
35. **Pramod H. Borse** & J.H.Je :(2003) Synchrotron x-ray induced nanoparticles deposition *Inter. Workshop-Novel Coherence based Radiology Techniques, Jeju Korea* --2003.02.19-2003.02.22.
36. **Pramod H. Borse** & J.H.Je :(2002)Synchrotron induced nanocrystalline nickel deposition *Korean Metals and Materials (meeting), Seoul, S. Korea-- 2002.10.25-2002.10.26.*
37. **Pramod H. Borse :** (2001) Investigations on Mn doped ZnS nanoparticles *Inter.*

q. Contribution to Books

1. **Borse Pramod H.** (2019) Nano-configured Opto-electric Ceramic Systems for Photo-electrochemical Hydrogen Energy. In: Mahajan Y., Roy J. (eds) Handbook of Advanced Ceramics and Composites. Springer, Cham 2019; Pages https://doi.org/10.1007/978-3-319-73255-8_52-1.

2. Pareek, A., **Borse, P.H.** (2023). Photoelectrochemical Ion Sensors. In: Korotcenkov, G. (eds) Handbook of II-VI Semiconductor-Based Sensors and Radiation Detectors. Springer, Cham. https://doi.org/10.1007/978-3-031-24000-3_15

3 A.Pareek, **Borse Pramod H.** Surface-Modification' and 'Composite-Engineering' of Metal Chalcogenide Electrodes for Solar Hydrogen Production Sustainable utilization of natural resources, chapter 8 in *Photocatalytic Nanomaterials for Environmental Applications*, *Mat.Res.Forum LLC, Edited by R.Tayade, V. Gandhi* 2018; Pages 235–257.

4. **Borse Pramod H.** "Hydrogen from water" Sustainable utilization of natural resources, Editor Mondal/Dalai, Taylor & Francis Group, 6000 Broken Sound Parkway NW, Suite 300, Boca Raton, FL 33487-2742, CRC Press 2017, Pages 441–457, Print ISBN: 978-1-4987-6183-3.

5. Dom R,G.Siva Kumar, Joshi S.V., **Borse PH**; Design and development of ferrite composite film electrode for photoelectrochemical energy application. *Mat.Sci.Forum,* 2014;781; 45-.

6. Dom R, **Borse PH**; Investigation of solar photoelectrochemical hydrogen generation ability of ferrites for energy production. *Mat.Sci.Forum,* 2013;764; 97-.

7. I Ganesh, Dom R, **Borse PH**, G.Sundararajan; Fabrication and photoelectrochemical characterization of Fe, Co, Ni and Cu-doped TiO_2 thin films. *Mat.Sci.Forum,* 2013;764; 266-.

8. Dom R, **Borse PH**. Photocatalytic and photoelectro-chemical study of ferrites for water splitting applications: A comparative study. Materials Science Forum 2013;734:334-48.

9. S.K.Kulkarni, A. A. Khosravi, **P.H.Borse**, N.Deshmukh, W.Vogel & J. Urban.; Structural & Optical properties of Semiconductor Nanoparticles in Physics of Semiconductor Nanostructures. Edited by K.P. Jain, pg. 73, 1997.

10. Kulkarni S.K., Kundu M., **Borse P.H.**, Nanoparticles of II - VI semiconductors in Proceedings of the conference in Materials Modelling & Design, Springer Proceedings in Physics, Edited by Dr. Vijay Kumar,1996.