

## Curriculum Vitae

### Dr. Piyush Kumar Sonkar

Assistant Professor

Department of Chemistry, MMV

Banaras Hindu University

Varanasi-221005

Contact: +91-9453657752

Email id: [piyush.sonkar37@gmail.com](mailto:piyush.sonkar37@gmail.com),  
[piyushchem.mmv@bhu.ac.in](mailto:piyushchem.mmv@bhu.ac.in)



### Academic Qualifications

- Ph. D.** : Topic: Electrochemical platforms based on metal complexes or metal nanoparticles immobilized carbon and mesoporous silica nanocomposites for sensing and fuel cell applications  
*Department of Chemistry, Institute of Science, Banaras Hindu University, Varanasi (2018)*
- M. Sc.** : Subject: Chemistry  
*Department of Chemistry, Institute of Science, Banaras Hindu University, Varanasi (2012)*
- B. Sc. (Hons)** : Subject: Chemistry (Hons)  
*Department of Chemistry, Institute of Science, Banaras Hindu University, Varanasi (2010)*

### Area of Specialization

- Fuel cell
- Supercapacitor
- Electrocatalysis
- Electroanalysis
- Metal nanoparticles
- Nanocomposites
- Electrochemical sensor
- Spectroelectrochemistry
- Photocatalysis

### Awards/Recognition

- 1- Best Poster Award in Conference (EEBRHW-2018)
- 1- CSIR/UGC-National Eligibility Test (NET-2015) qualified
- 2- UGC/RGNF-JRF & SRF (2013) Award
- 3- Graduate Aptitude Test for Engineering (GATE-2012) qualified
- 4- IIT-JAM (2010) qualified
- 6- Science Youth Fest-BHU (2010)
- 7- Sir C.V. Raman Quiz-CHBS (2005)

## Membership of Professional Bodies

Indian Society for Analytical Scientists (Membership No. S16017), From-2016

### List of selected 10 publications

1. Co(II)-porphyrin-decorated carbon nanotubes as catalysts for oxygen reduction reactions: an approach for fuel cell improvement.  
**P. K. Sonkar**, K. Prakash, M. Yadav, V. Ganesan, M. Sankar, R. Gupta and D. K. Yadav, *Journal of Materials Chemistry A*, (2017), 5, 6263 (ISSN/eISSN No: 2050-7488)  
DOI: 10.1039/C6TA10482G  
[impact factor: **9.931**]
2. Nickel phthalocyanine integrated graphene architecture as bifunctional electrocatalyst for CO<sub>2</sub> and O<sub>2</sub> reductions  
**P. K. Sonkar**, V. Ganesan, R. Gupta, D. K. Yadav, M. Yadav,  
*Journal of Electroanalytical Chemistry*, (2018), (ISSN/eISSN No: 1572-6657)  
DOI: 10.1016/j.jelechem.2018.08.020  
[impact factor: **3.235**]
3. Highly dispersed multiwalled carbon nanotubes coupled manganese salen nanostructure for simultaneous electrochemical sensing of vitamin B<sub>2</sub> and B<sub>6</sub>.  
**P. K. Sonkar**, V. Ganesan, D. K. Yadav, R. Gupta and M. Yadav,  
*Journal of Electroanalytical Chemistry*, (2017), 807, 235 (ISSN/eISSN No: 1572-6657)  
DOI: 10.1016/j.jelechem.2017.11.050  
[impact factor: **3.235**]
4. Electrochemical sensing of rifampicin in pharmaceutical samples using *meso*-tetrakis(4-hydroxyphenyl)porphyrinato cobalt(II) anchored carbon nanotubes.  
**P. K. Sonkar**, M. Yadav, K. Prakash, V. Ganesan, M. Sankar, D. K. Yadav, R. Gupta,  
*Journal of Applied Electrochemistry*, (2018) Accepted (ISSN/eISSN No: 1572-8838)  
DOI: 10.1007/s10800-018-1221-3  
[impact factor: **2.262**]
5. Non-enzymatic electrochemical sensing platform based on metal complex immobilized carbon nanotubes for glucose determination.  
**P. K. Sonkar**, V. Ganesan, S. A. John, D. K. Yadav and R. Gupta,  
*RSC Advances*, (2016), 6, 107094 (ISSN/eISSN No: 2046-2069)  
DOI: 10.1039/C6RA16064F  
[impact factor: **2.936**]

6. Individual and simultaneous voltammetric determination of ascorbic acid, uric acid and folic acid by using a glassy carbon electrode modified with gold nanoparticles linked to bentonite via cysteine groups.  
D. K. Yadav, R. Gupta, V. Ganesan and **P. K. Sonkar**,  
*Microchimica Acta*, (2017), 184, 1951 (ISSN/eISSN No: 1436-5073)  
DOI: 10.1007/s00604-017-2186-3  
[impact factor: **5.705**]
  
7. Simple route to anchor silver nanoparticles into thiol-functionalized mesoporous silica: synthesis, characterization and electrochemical applications.  
**P. K. Sonkar**, V. Ganesan, R. Gupta and D. K. Yadav,  
*Journal of Nanoparticle Research*, (2016), 18, 297 (ISSN/eISSN No: 1572-896X)  
DOI: 10.1007/s11051-016-3607-7  
[impact factor: **2.127**]
  
8. Dual electrocatalytic behavior of oxovanadium(IV) salen immobilized carbon materials towards cysteine oxidation and cystine reduction: graphene versus single walled carbon nanotubes.  
**P. K. Sonkar**, V. Ganesan, D. K. Yadav and R. Gupta,  
*ChemistrySelect*, (2016), 1, 6726 (ISSN/eISSN No: 2365-6549)  
DOI: 10.1002/slct.201601316  
[impact factor: **1.505**]
  
9. Polymeric Co(salen) scaffold for the electrochemical determination of acetaminophen in pharmaceutical sample.  
**P. K. Sonkar**, V. Ganesan and A. Prajapati,  
*Ionics*, (2016), 22, 1741 (ISSN/eISSN No: 1862-0760)  
DOI: 10.1007/s11581-016-1699-9  
[impact factor: **2.347**]
  
10. Synthesis and characterization of silver nanoparticle-anchored amine-functionalized mesoporous silica for electrocatalytic determination of nitrite.  
**P. K. Sonkar** and V. Ganesan,  
*Journal of Solid State Electrochemistry*, 19, 2107 (2015) (ISSN/eISSN No: 1433-0768)  
DOI: 10.1007/s10008-014-2725-3  
[impact factor: **2.509**]

### Full List of Publications

1. Nickel phthalocyanine integrated graphene architecture as bifunctional electrocatalyst for CO<sub>2</sub> and O<sub>2</sub> reductions  
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*Journal of Electroanalytical Chemistry*, (2018), (ISSN/eISSN No: 1572-6657)  
DOI: 10.1016/j.jelechem.2018.08.020  
[impact factor: **3.235**]
2. Palladium nanoparticles supported on mesoporous silica microspheres for enzyme-free amperometric detection of H<sub>2</sub>O<sub>2</sub> released from living cells  
R. Gupta, P. Singh, B. Koch, P. K. Rastogi, D. K. Yadav, **P. K. Sonkar**,  
*Sensors and Actuators B: Chemical*, (2018) (ISSN/eISSN No: 0925-4005)  
DOI: Accepted  
[impact factor: **5.667**]
3. Electrochemical sensing of rifampicin in pharmaceutical samples using *meso*-tetrakis(4-hydroxyphenyl)porphyrinato cobalt(II) anchored carbon nanotubes.  
**P. K. Sonkar**, M. Yadav, K. Prakash, V. Ganesan, M. Sankar, D. K. Yadav, R. Gupta,  
*Journal of Applied Electrochemistry*, (2018) *Accepted* (ISSN/eISSN No: 1572-8838)  
DOI: 10.1007/s10800-018-1221-3  
[impact factor: **2.262**]
4. Gold Nanoparticles Immobilized Zn-Based Metal-Organic Framework as Novel Multifunctional Catalyst for Oxygen Reduction and Hydrogen Evolution Reactions.  
D. K. Yadav, R. Gupta, V. Ganesan, P. K. Sonkar, M. Yadav  
*Chemelectrochem*, (2018)  
DOI: 10.1002/celc.201800519  
[impact factor: **4.446**]
5. Co(II)-porphyrin-decorated carbon nanotubes as catalysts for oxygen reduction reactions: an approach for fuel cell improvement.  
**P. K. Sonkar**, K. Prakash, M. Yadav, V. Ganesan, M. Sankar, R. Gupta and D. K. Yadav, *Journal of Materials Chemistry A*, (2017), 5, 6263 (ISSN/eISSN No: 2050-7488)  
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6. Highly dispersed multiwalled carbon nanotubes coupled manganese salen nanostructure for simultaneous electrochemical sensing of vitamin B<sub>2</sub> and B<sub>6</sub>.  
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DOI: 10.1016/j.jelechem.2017.11.050  
[impact factor: **3.235**]

7. Templated synthesis of nickel–iron layered double hydroxide for enhanced electrocatalytic water oxidation: towards the development of non-precious-metal catalysts.  
D. K. Yadav, V. Ganesan, **P. K. Sonkar**, R. Gupta,  
*ChemElectroChem*, (2017), 4, 3134 (ISSN/eISSN No: 2196-0216)  
DOI: 10.1002/celec.201700867  
[impact factor: **4.446**]
8. Individual and simultaneous voltammetric determination of ascorbic acid, uric acid and folic acid by using a glassy carbon electrode modified with gold nanoparticles linked to bentonite via cysteine groups.  
D. K. Yadav, R. Gupta, V. Ganesan and **P. K. Sonkar**,  
*Microchimica Acta*, (2017), 184, 1951 (ISSN/eISSN No: 1436-5073)  
DOI: 10.1007/s00604-017-2186-3  
[impact factor: **5.705**]
9. Gold nanoparticles decorated mesoporous silica microspheres: A proficient electrochemical sensing scaffold for hydrazine and nitrobenzene.  
R. Gupta, P. K. Rastogi, V. Ganesan, D. K. Yadav and **P. K. Sonkar**,  
*Sensors and Actuators B: Chemical*, (2017), 239, 970 (ISSN/eISSN No: 0925-4005)  
DOI: 10.1016/j.snb.2016.08.117  
[impact factor: **5.667**]
10. Potassium ferricyanide-incorporated branched polyethylenimine as a potential scaffold for electrocatalytic reduction and amperometric sensing of nitrite.  
P. K. Rastogi, V. Ganesan, R. Gupta, P. Singh, **P. K. Sonkar** and D. K. Yadav,  
*Journal of Applied Electrochemistry*, (2017), 47, 95 (ISSN/eISSN No: 1572-8838)  
DOI: 10.1007/s10800-016-1012-7  
[impact factor: **2.262**]
11. Square planar Ni(II) complexes of acetone N-4-phenyl-thiosemicarbazone and in situ generated benzoyl thiosemicarbazide ligands: synthesis, spectral and structural characterizations, thermal behaviour and electrochemical studies.  
S. Paswan, M. Bharty, P. Bharati, **P. K. Sonkar**, V. Ganesan, R. Butcher,  
*New Journal of Chemistry*, (2017), 41, 15466 (ISSN/eISSN No: 1369-9261)  
DOI: 10.1039/C7NJ01030C  
[impact factor: **3.201**]
12. Use of jaggery and honey as adjunctive cytological fixatives to ethanol for oral smears.  
D. Pandiar, H. C. Branwal, S. Kumar, V. Ganesan, **P. K. Sonkar** and K. Chattopadhyay,  
*Journal of Oral and Maxillofacial Pathology*, (2017), 21, 317 (ISSN/eISSN No: 1998-393X)  
DOI: 10.4103/jomfp.JOMFP\_224\_15  
[impact factor: ...]

13. Single walled carbon nanotubes decorated vanadyl phthalocyanine composite for electrochemical oxygen reduction in fuel cells.  
**P. K. Sonkar**, V. Ganesan, R. K. Singh, D. K. Yadav, R. Gupta and M. Yadav,  
*Indian Journal of Chemistry-A*, (2017), 56A, 821 (ISSN/eISSN No: 0975-0975)  
DOI: [nopr.niscair.res.in/handle/123456789/42578](https://nopr.niscair.res.in/handle/123456789/42578)  
[impact factor: **0.566**]
14. Utilization of samanya shodhana in the purification of excess mercury obtained from dental operatory-a preliminary study.  
Pandiar, H. C. Baranwal, K. Chattopadhyay, A. K. Choudhary, V. Ganesan, **P. K. Sonkar**,  
*International Journal of Ayurveda and Pharma Research*, (2018), 6, 8  
(ISSN/eISSN No: 2322-0910)  
DOI: [ijapr.in/index.php/ijapr/article/view/851](http://ijapr.in/index.php/ijapr/article/view/851)  
[impact factor: ...]
15. Non-enzymatic electrochemical sensing platform based on metal complex immobilized carbon nanotubes for glucose determination.  
**P. K. Sonkar**, V. Ganesan, S. A. John, D. K. Yadav and R. Gupta,  
*RSC Advances*, (2016), 6, 107094 (ISSN/eISSN No: 2046-2069)  
DOI: [10.1039/C6RA16064F](https://doi.org/10.1039/C6RA16064F)  
[impact factor: **2.936**]
16. Simple route to anchor silver nanoparticles into thiol-functionalized mesoporous silica: synthesis, characterization and electrochemical applications.  
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*Journal of Nanoparticle Research*, (2016), 18, 297 (ISSN/eISSN No: 1572-896X)  
DOI: [10.1007/s11051-016-3607-7](https://doi.org/10.1007/s11051-016-3607-7)  
[impact factor: **2.127**]
17. Dual electrocatalytic behavior of oxovanadium(IV) salen immobilized carbon materials towards cysteine oxidation and cystine reduction: graphene versus single walled carbon nanotubes.  
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*ChemistrySelect*, (2016), 1, 6726 (ISSN/eISSN No: 2365-6549)  
DOI: [10.1002/slct.201601316](https://doi.org/10.1002/slct.201601316)  
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18. Polymeric Co(salen) scaffold for the electrochemical determination of acetaminophen in pharmaceutical sample.  
**P. K. Sonkar**, V. Ganesan and A. Prajapati,  
*Ionics*, (2016), 22, 1741 (ISSN/eISSN No: 1862-0760)  
DOI: [10.1007/s11581-016-1699-9](https://doi.org/10.1007/s11581-016-1699-9)  
[impact factor: **2.347**]
19. Electrochemical sensing platform for hydrogen peroxide determination at low reduction potential using silver nanoparticle-incorporated bentonite clay.

- D. K. Yadav, R. Gupta, V. Ganesan, **P. K. Sonkar** and P. K. Rastogi,  
*Journal of Applied Electrochemistry*, (2016), 46,103 (ISSN/eISSN No: 1572-8838)  
DOI: 10.1007/s10800-015-0904-2  
[impact factor: **2.262**]
20. Electrochemical investigation of gold nanoparticles incorporated zinc based metal-organic framework for selective recognition of nitrite and nitrobenzene.  
D. K. Yadav, V. Ganesan, **P. K. Sonkar**, R. Gupta and P. K. Rastogi,  
*Electrochimica Acta*, (2016), 200, 276 (ISSN/eISSN No: 0013-4686)  
DOI: 10.1016/j.electacta.2016.03.092  
[impact factor: **5.116**]
21. Metal@MOF materials in electroanalysis: silver-enhanced oxidation reactivity towards nitrophenols adsorbed into a zinc metal organic framework-Ag@MOF-5(Zn).  
D. K. Yadav, V. Ganesan, F. Marken, R. Gupta and **P. K. Sonkar**,  
*Electrochimica Acta*, (2016), 219, 482 (ISSN/eISSN No: 0013-4686)  
DOI: 10.1016/j.electacta.2016.10.009  
[impact factor: **5.116**]
22. Synthesis and characterization of gold nanoparticles incorporated bentonite clay for electrocatalytic sensing of arsenic (III).  
P. K. Rastogi, D. K. Yadav, S. Pandey, V. Ganesan, **P. K. Sonkar** and R. Gupta,  
*Journal of Chemical Sciences*, (2016), 128, 349 (ISSN/eISSN No: 0973-7103)  
DOI: 10.1007/s12039-016-1039-7  
[impact factor: **1.254**]
23. Methylene blue incorporated mesoporous silica microsphere based sensing scaffold for the selective voltammetric determination of riboflavin.  
R. Gupta, P. K. Rastogi, U. Srivastava, V. Ganesan, **P. K. Sonkar** and D. K. Yadav,  
*RSC Advances*, 6, 65779 (2016) (ISSN/eISSN No: 2046-2069)  
DOI: 10.1007/s12039-016-1039-7  
[impact factor: **2.936**]
24. Electrocatalytic oxidation and determination of cysteine at oxovanadium(IV) salen coated electrodes.  
**P. K. Sonkar**, V. Ganesan and V. Rao,  
*International Journal of Electrochemistry*, (2014), 2014,1(ISSN/eISSN No: 2090-3529)  
DOI: 10.1155/2014/316254  
[impact factor: ...]
25. Synthesis and characterization of silver nanoparticle-anchored amine-functionalized mesoporous silica for electrocatalytic determination of nitrite.  
**P. K. Sonkar** and V. Ganesan,  
*Journal of Solid State Electrochemistry*, 19, 2107 (2015) (ISSN/eISSN No: 1433-0768)  
DOI: 10.1007/s10008-014-2725-3  
[impact factor: **2.509**]

**Seminar(s)/Symposium/Workshop Attended**

National: 04

International: 08

**Web link for current research profile**

Google Scholar link: <https://scholar.google.co.in/citations?user=7WQwscAAAAJ&hl=en>

Research Gate link: [https://www.researchgate.net/profile/Piyush\\_Sonkar](https://www.researchgate.net/profile/Piyush_Sonkar)