CURRICULUM VITAE

Dr. Valmiki Balu Koli
Assistant Professor,
School of Nanoscience and Biotechnology,
Shivaji University, Kolhapur
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EDUCATIONAL QUALIFICATION

- **Ph.D.: - (Chemistry); (September 2017)**
  D. Y. Patil University, Kolhapur.
- **M. Sc. Chemistry; (First Class (72.40%) 2011.)**
  Dr. Babasaheb Ambedkar Marathwada University, Sub Campus, Osmanabad.
- **B.Sc. Chemistry; :-(Second Class (59.40%) 2009.)**
  Shivaji University, Kolhapur.
- **H.S.C.: - (Second Class (52.00%) 2006.)**
  Maharashtra, Board Kolhapur.
- **S.S.C.: - (First Class (68.80%) 2004.)**
  Maharashtra, Board Kolhapur

PERSONAL INFORMATION

Name	: Valmiki Balu Koli
D.O.B	: 12 August 1987
Permanent Address	: A/P:-Sajani, Tal:-Hatkananagle, Dist:-Kolhapur, PIN- 416 115.
Contact Number	: Mob 9623437669
Email	: valmikikoli12@gmail.com

Research work

Title of Ph.D. Thesis: "Studies on photo catalytic TiO_2-MWCNTs nanocomposites for antibacterial application"

ACADEMIC EXPERIENCE

Research experience:

1. **Postdoctoral Researcher**
   Department of Physics, National Dong Hwa University, Show-Fang, Taiwan, R.O.C
   Duration: - **1st Oct 2019 to 23rd June 2023**
   Department of Material Science and Engineering, University of Seoul, South Korea
   Duration: - **28th Nov. 2017 to 15 Jan.2019.**

2. **Junior Research Fellow**
   Project: - "Heterojunction nanocomposites of functionalized carbon nanotubes with doped, undoped TiO_2 nanoparticles for solar energy harvesting" Funding Agency: - Department of Science and Technology New Delhi.
   Duration: - **1st June 2012 to 31st May 2015**

Teaching experience:

1. Assistant Professor at School of Nanoscience and Biotechnology, Shivaji University, Kolhapur **From 24th July 2023 to presently working.**
2. Teaching Assistant at Medical physics department D.Y. Patil University, Kolhapur from **March 2016 to September 2016.**

Awards

1. Worked as **Junior Research Fellow** on DST major research project entitled "Heterojunction nanocomposites of functionalized carbon nano-tubes with doped, undoped TiO_2 nanoparticles for solar energy harvesting." 1st June 2012 to 31st May 2015.
2. Received International Travel support from SERB under ITS Scheme to attain 19th International Conference on "Engineering & Technology, Computer, and Basic & Applied Sciences" (ECBA- 2017 held from 25-01-2017 to 26-01-2017 in Seoul, South Korea.
3. Received International Travel Fellowship from CICS Chennai to attain 19th International Conference on "Engineering & Technology, Computer, and Basic & Applied Sciences" (ECBA- 2017 held from 25-01-2017 to 26-01-2017 in Seoul, South Korea.
4. Best poster presentation award in Emerging Trends in Nanomaterial and Their Application (ETNA-2017) Department of Medical Physics, Center for Interdisciplinary Research, D. Y. Patil University, Kolhapur. 2nd and 3rd June 2017.

TECHNICAL SKILL

- ✓ Expertise in the synthesis of nanoparticles, nanocomposites with chemical and physical methods.
- ✓ Expert in catalysis development and its characterization by different analytical tools.
- ✓ Expertise in handling software such as Origin Lab (6.1 to 2020) ISIS draw, Che draw Ultra, etc.
- ✓ Expert in handling and operating, X-ray diffractometer (Bruker D 8-advance), UV–visible spectrophotometer (UV3600, Shimadzu, Japan, Fourier transform infrared (Nicolet™ iS™ 50 FTIR Spectrometer), DSC (SDT Q600 instrument), and photoluminescence spectroscopy (Hitachi F4500 fluorescence spectrophotometer.
- ✓ Expert in photodegradation of various dye molecule and toxic gases such as toluene and benzene etc.

PUBLICATIONS

1. G Murugan, R Ragesh Nath, P Ramacharyulu, AN Maity, **VB Koli** Constructing BiOI–$BiOBr/TiO_2$ nanocomposites by using a double solvothermal method for enhanced photocatalytic activity under visible light irradiation, **Journal of Materials Science: Materials in Electronics,** 34 **(2023)**1645**.**
2. **VB Koli,** G Murugan, SC Ke, Self-Assembled Synthesis of Porous Iron-Doped Graphitic Carbon Nitride Nanostructures for Efficient Photocatalytic Hydrogen Evolution and Nitrogen Fixation, **Nanomaterials** 13**(2023)** (2), 275.
3. S Deshmukh, K .Pawar, **V Koli,** P Pachfule, Emerging Graphitic Carbon Nitride-based Nanobiomaterials for Biological Applications**, ACS Appl. Bio Mater**. (**2023)**, 6, 4, 1339–1367
4. **VB Koli,** SC Ke,, Self-cleaning photoactive metal oxide-based concrete surfaces for environmental remediation, **Advances in Metal Oxides and Their Composites for Emerging Applications (Book chapter) (2022),** 523-547.
5. **VB Koli,** Ragesh Nath R., Jun-Ru Chen & Shyue-Chu Ke Enhanced photocatalytic inactivation of bacteria and degradation of pharmaceutical pollutant by rGO/N-TiO2 nanocomposites: a study of active radicals. **Journal of Nanoparticle Reserch.**24 (2022)156
6. **VB Koli**, SC Ke, AG Dodamani, SP Deshmukh JS Kim Boron-Doped TiO_2-CNT Nanocomposites with Improved Photocatalytic Efficiency toward Photodegradation of Toluene Gas and Photo-Inactivation of Escherichia coli. **Catalysts** 10, **(2020)**, 632.
7. SP. Deshmukh, **VB. Koli**, AG. Dhodamani, SM. Patil, VS. Ghodake, SD. Delekar, Ultrasonochemically Modified $Ag@TiO_2$ Nanocomposites as Potent Antibacterial Agent in the Paint Formulation for Surface Disinfection. **Chemistry Select** 6 **(2021)**113 –122.
8. AC Gandhi, CY Lai, KT Wu, P. V. R. K. Ramacharyulu, **VB. Koli**, CL Cheng, SC Ke, SY Wu, Phase transformation and room temperature stabilization of various Bi_2O_3 nano-polymorphs: effect of oxygen-vacancy defects and reduced surface energy due to adsorbed carbon species. **Nanoscale**, 12 **(2020)**, 24119.
9. SP Deshmukh, KR Sanadi, RS Diggikar, **VB Koli**, AV MaliStructural, magnetic, and electrical properties of manganese-substituted magnesium chromate spinel structure. **Journal of Materials Science: Materials in Electronics** 32 (6**) (2021)**, 6810-6819
10. **VB Koli,** JS Kim, An efficient one-pot N doped TiO_2-SiO_2 Synthesis and its application for photocatalytic concretes **Applied surface Science**- 491 **(2019)** 60-66.
11. AG Dhodamani, KVMore, SB Mullani, SP Deshmukh, **VB. Koli,** DK Panda, SD. Delekar, Structural Refinement and Optoelectronic Properties of $(Mo_xTi_{1-2x}O_{2-\delta})1\text{-}y(RGO)y$ Nanocomposites and Their Photovoltaic Studies with Natural Pigments as Sensitizers, **Chemistry Select,** 5 **(2020)**218 –230
12. **VB Koli,** JS Kim, Photocatalytic oxidation for removal of gases toluene oxidation of toluene gas by TiO2-CeO2 nanocomposites under UV light**. Materials Science in Semiconductor Processing,** 94 **(2019)**70-79

13. AG. Dhodamani, KV. More, **VB. Koli**, AR. Shelke, NG. Deshpande, DK. Panda, and SD. Delekar, Compositional Dependent Physicochemical and Photovoltaic Properties of the $(TiO_2)_{1-x}(RGO)_x$ Nanocomposites for Sensitized Solar Cells Using Ru(II) Dyes. **Chemistry Select,** 4 **(2019)**105 –106**.**
14. **VB Koli,** S Mavengere, JS Kim, Boron-doped TiO_2–CNTs nanocomposites for photocatalytic application. **Journal of Materials Science: Materials in Electronics (2018)** 1-13.
15. **VB Koli**, S Mavengere, JS Kim, Photocatalytic properties of TiO_2-SiO_2 coated concr-ete on toluene gas. **Material Research Express**, 5 **(2018)** 125006.
16. **VB Koli**, AG Dhodamani , KV More, SFA Acquah, DK Panda, SH Pawar, SD Delekar, A simple strategy for the anchoring of anatase titania on multi-walled carbon nanotubes for solar energy harvesting, **Solar Energy ,** 149 **(2017)** 188-194.
17. **VB Koli,** AG Dhodamani, SD Delekar, SH Pawar, In situ sol-gel synthesis of anatase TiO_2-MWCNTs nanocomposites and their photocatalytic applications. **Journal of Photochemistry and Photobiology A: Chemistry** 333**(2017**), 40-48.
18. **VB Koli**, SD Delekar, SH Pawar, Photoinactivation of bacteria by using Fe-doped TiO_2-MWCNTs nanocomposites. **Journal of Materials Science: Materials in Medicine** 27 **(2016)**, (12), 177.
19. **VB Koli**, AG Dhodamani, AV Raut, ND Thorat, SH Pawar, SD Delekar. Visible light photo-induced antibacterial activity of TiO_2-MWCNTs nanocomposites with varying the contents of MWCNTs. **Journal of Photochemistry and Photobiology A: Chemistry** 328**(2016)**, 50-58.
20. SP Deshmukh, SB Mullani, **VB Koli**, SM Patil, PJ Kasabe, PB Dandge, S A Pawar, SD Delekar, Ag Nanoparticles Connected to the Surface of TiO_2 Electrostatically for Antibacterial Photoinactivation Studies**. Photochemistry and photobiology (2018)**
21. JV Meshram, **VB Koli,** SG Kumbhar, LC Borde, MR Phadatare, SH Pawar, Structural, a spectroscopic and anti-microbial inspection of PEG capped ZnO nanoparticles for biomedical applications. **Material Research Express** 5**(2018)** 045016.
22. JV Meshram, **VB Koli**, MR. Phadtare, SH Pawar, Anti-microbial surfaces: An approach for deposition of ZnO nanoparticles on PVA-Gelatin composite film by screen printing technique. **Materials Science & Engineering C.** 73, **(2017)** 257-266.
23. VB Shevale, AG Dhodamani, **VB Koli,** RP Barkul, JP Jadhav, SD Delekar, Efficient degradation of Azorubin S colorant in the commercial jam-jelly food samples using TiO_2-$CoFe_2O_4$ nanocomposites in visible light. **Materials Research Bulletin,** 89**(2017)** 79-88.
24. RP Barkul, **VB Koli,** VB Shewale, MK Patil, SD Delekar. Visible active nanocrystalline N-doped anatase TiO_2 particles for photocatalytic mineralization studies, **Materials Chemistry and Physics**, 173**(2016)** 42–51.
25. HM Yadav, SV Otari, **VB Koli**, SS Mali, CK Hong, SH Pawar, SD Delekar, Preparation and characterization of copper-doped anatase TiO_2 nanoparticles with

visible-light photocatalytic antibacterial activity, **Journal of Photochemistry and Photobiology A: Chemistry, A: Chemistry** 280**(2014)**32–38.

26. ND Thorat, SV Otari, RM Patil, R A Bohara, H M Yadav, **VB Koli**, AK Chaurasia RS Ningthoujamd, Synthesis, characterization and biocompatibility of chitosan functionalized superparamagnetic nanoparticles for heat-activated curing of cancer cells **Dalton Transactions** 43 **(2014)** 17343-17351.

CONFERENCE/ WORKSHOP PAPER PRESENTED/ ATTENDED

1. National Conference On "Sustainable Chemistry: Challenges and Opportunity." At Dr. Babasaheb Ambedkar Marathwada University, Sub-Campus Osmanabad. Dated 9th & 10th Jan 2012 **(Poster Presentation**).
2. Science Academia Lecture workshop on Instrumental Techniques Chemic-al Sciences, at Dr. Babasaheb Ambedkar Marathwada University, Sub-Campus Osmanabad date:25th &26th Feb. 2012 **(Poster Presentation)**
3. 7th National Symposium and Conference on Solid State Chemistry and Allied Areas. Department of Chemistry Jamia Millia Islamia (Central University) New Delhi 110025, India. November 24th and 26th, 2011 **(Poster resentation)**
4. International Conference on Emerging Trends in Chemical Sciences at School of Chemical Sciences, Central University of Gujarat, Gandhina-gar14th-15th March 2013 **(Poster Presentation)**
5. International workshop on PhD program for medical innovation (IWP-PMI-2014) February 15th and16th, 2014. Center for Interdisciplinary research, D. Y. Patil University Kolhapur.
6. National workshop on Ph.D. program for medical innovations (PPMI-2012), October 18th and 19th, 2012. D Y Patil University, Kolhapur.
7. National symposium on Current Trends in Chemical and Nano Sciences, (CTCNS-2014), January 17th and 18th, 2014. Department of Chemistry, Shivaji University, Kolhapur.
8. National workshop on Scientific/ Research paper writing, Department of Chemistry, Savitribai Phule Pune University, Pune. 16th and 17th Dece-mber 2014
9. National workshop on X-ray crystallography, Department of Chemistry, Faculty of Science The Maharaja Sayajirao University of Baroda Vadodara -390 002, 19th -25th January 2015.
10. National Conference on "convergence of stem cell and medical nanot-echhnology" held at D.Y. Patil University Kolhapur dated 2nd and 3rd Sep. 2015 **(Poster presentation).**
11. International Conference on "nanomaterials and Nanotechnology" at K.S. Rangasamy college of Technology, Trihegode, India dated 7th to 10th Dec. **2015 (Oral Presentation).**
12. DYPU, Anveshan held at D.Y Patil University Kolhapur. Dated 29th Dec. 2015 (**Poster presentation**).
13. ANVESHAN 2016 Student Research Convention (West Zone) held at Maharaja Ganga Singh University, Bikaner (Rajasthan) India. Dated 12th and 13th January 2016. **(Oral presentation).**

14. **National Seminar on "Application of Chemical Science for Sustainable Development" held at Department of Chemistry, Shivaji University, Kolhapur. Dated 20th Feb.2016. (Poster Presentation)**
15. **International Conference on "Engineering & Technology, Computer, and Basic & Applied Sciences" (ECBA- 2017 to be held from 25-01-2017 to 26-01-2017 in Seoul, South Korea. (Oral Presentation)**
16. National conference on Emerging Trends in Nanomaterial and Their Application (ETNA-2017) Department of Medical Physics, Center for Interdisciplinary Research, D. Y. Patil University Kolhapur. 2nd & 3rd June 2017. **(Poster presentation)**

Hereby I declare that the information given above is true to the best of my knowledge.

Dr. Valmiki B. Koli