

CURRICULUM VITAE

DNYANESHWAR KISAN KULAL

Ph.D. Chemistry (Assistance Professor)
Ramnarain Ruia Autonomous College,
L. Nappo Road, Matunga, Mumbai: 400019
Mobile No : +91 8082236174
Residential No : +91 8369200661
Email: dnyaneshwar.kulal123@gmail.com
rachy17dk.kulal@pg.ictmumbai.edu.in
dnyaneshwarkulal@ruiacollege.edu



Education

Ph.D. Chemistry (2011-2017)

“Biosorbents for separation and determination of certain contaminants from environment.”
University of Mumbai, Maharashtra, India

Master of Science (2007-2009)

“Adsorption of Erythrosine dye by chitin and its determination by Ultra-Violet Visible spectroscopy.”
Specialization in Analytical Chemistry, University of Mumbai, Maharashtra, India.

Work Experience

Research Associate (RA) (2017-2019)

“Synthesis of Graphene Based Bio-Adsorbent for Waste Stream Treatment”.
Institute of Chemical Technology, Matunga, Mumbai: 400019, India.

Project Assistant (2010-2011)

National Institute of Oceanography (NIO) for Water Analysis, India.

Attended Conferences and workshops

- Workshop on “Cemiformatics for Chemistry Teachers” at Bioinformatics Center SPPU from 13th January 2020 to 18th January 2020
- 8th Indian Youth Science Congress held on February 16-17, 2017 at University of Mumbai, Mumbai.
- UM-DAE Centre for Excellence in Basic Sciences workshop, Mumbai and Society for Materials Chemistry, Mumbai held on December 15-16, 2017.

- Advances in Organometallic and Bio- Organometallic Chemistry (AOBOC-2018) Organized by Department of Chemistry, Institute of Chemical Technology, Mumbai, on February 20-21, 2018.

Presentations at Conferences

1. Solid phase extraction of uranium (VI) using penicillium chrysogenum immobilized on silica gel. M Karve, **DK Kulal**, SR Tetgure, JV Gholave, Proceedings of DAE-BRNS biennial symposium on ..., 2012
2. Biosynthesis and Characterization of Aluminum Nanoparticles Using *FicusArnottiana* Plant Leaves Extract, Satyavan P. Varande, Amol V. Pansare, **Dnyaneshwar K. Kulal**, Vishwanath R. Patil, Chemistry-Sustainability and Environment-2015, Ramnarain Ruia College, Mumbai, 20th-21st February-2015, P-48.
3. Novel Green Method for Synthesis of Manganese Nanoparticles (MnNPs) Using *Ravenala Madagascariensis* Leaves Extract, Lavanya V. Dussa, Amol V. Pansare, **Dnyaneshwar K. Kulal**, Vishwanath R. Patil, Chemistry-Sustainability and Environment-2015, Ramnarain Ruia College, Mumbai, 20th-21st February-2015, P-39.
4. Systematic Characterization of Zinc Nanoparticles Synthesized from Novel Green Method by *Colocasia Esculenta* Leaves Extract, Sapana T. Pawar, Amol V. Pansare, **Dnyaneshwar K. Kulal**, Vishwanath R. Patil, Chemistry-Sustainability and Environment-2015, Ramnarain Ruia College, Mumbai, 20th-21st February-2015, P-44
5. Synthesis and Characterization of Cobalt Nanoparticles by Reduction Process Using Fungal Strain of *Aspergillus Oryzae*, Pratiksha. P. Deshmukh, **Dnyaneshwar K. Kulal**, Amol V. Pansare, VishwanathR. Patil, Chemistry-Sustainability and Environment-2015, Ramnarain Ruia College, Mumbai, 20th-21st February-2015, P-38.
6. Fungal Strain Mediated for Synthesis of Manganese Nanoparticles, Chandrabhan R. Pal, **Dnyaneshwar K. Kulal**, Amol V. Pansare, Vishwanath R. Patil, Chemistry-Sustainability and Environment-2015, Ramnarain Ruia College, Mumbai, 20th-21st February-2015, P-43.
7. Green synthesis of SeNPs using *Trigonella foenum-graecum* extract and there in vitro anticancer activity, alteration with hsDNA and bovine serum albumin environment, Amol V. Pansare, **Dnyaneshwar K. Kulal** and Dr. Vishwanath R. Patil, National Conference on Nanotechnology in Drug Delivery Research: Innovations, Challenges and Opportunities (NCNDDR2015), SPPSPTM, SVKM'S NMIMS, Mumbai, 16-17th October 2015. A-47
8. Strain of *Aspergillus Oryzae* Used for the Preparation of Iron Nanoparticles and Its Compatibility with Bovine Serum Albumin, **Dnyaneshwar K. Kulal**, Amol V.

- Pansare and Dr. Vishwanath R. Patil, National Conference on Nanotechnology in Drug Delivery Research: Innovations, Challenges and Opportunities (NCNDDR2015), SPPSPTM, SVKM'S NMIMS, Mumbai, 16-17th October 2015. A-49
9. Gold as Nanomedicine for In Vitro Study of Breast Cancer Cell Line, hsDNA and BSA. Amol V. Pansare, **Dnyaneshwar K. Kulal** and Dr. Vishwanath R. Patil, "National Seminar on Nanotechnology: Environmental, Economic, Social and Health Perspectives" (NEESH2016), 22-23 January 2016 at Annasaheb Waghire College, Otur, Pune, 22nd-23rd January 2016, ISBN:978-93-5158-581-7, P-219.
 10. Solid Phase Extraction of Ag(I) using *aspergillus oryzae* Immobilized on Silica gel. **Dnyaneshwar K. Kulal**, Amol V. Pansare, Vishwanath R. Patil, "National Seminar on Nanotechnology: Environmental, Economic, Social and Health Perspectives" (NEESH2016), 22-23 January 2016 at Annasaheb Waghire College, Otur, Pune, 22nd-23rd January 2016. ISBN:978-93-5158-581-7, P-227.
 11. Quenching Mechanism of Human Serum Albumin Fluorescence by Lanthanum-Capecitabine Nanoparticles for In-vitro Anticancer activity. Amol A. Shedge, Amol V. Pansare, **Dnyaneshwar K. Kulal**, Shubham V. Pansare and Vishwanath R. Patil, "National Seminar on Nanotechnology: Environmental, Economic, Social and Health Perspectives" (NEESH2016), 22-23 January 2016 at Annasaheb Waghire College, Otur, Pune, 22nd-23rd January 2016, ISBN:978-93-5158-581-7, P-221.
 12. Preminent Synthesis of Cerium Nanoparticles by Reduction Process Using Extract of *Ficus Arnottiana* Under the Influence of Solar Energy. Amol V. Pansare, Pritam S. Walanj, **Dnyaneshwar K. Kulal**, Vishwanath R. Patil, "National Seminar on Nanotechnology: Environmental, Economic, Social and Health Perspectives" (NEESH2016), 22-23 January 2016 at Annasaheb Waghire College, Otur, Pune, 22nd-23rd January 2016, ISBN:978-93-5158-581-7, A-230.
 13. Solar Radiation as a Probe of Ytterbium Nanoparticles for Greener Way. Amol V. Pansare, Priyanka P. Bhalerao, **Dnyaneshwar K. Kulal**, Vishwanath R. Patil, "National Seminar on Nanotechnology: Environmental, Economic, Social and Health Perspectives" (NEESH2016), 22-23 January 2016 at Annasaheb Waghire College, Otur, Pune, 22nd-23rd January 2016, ISBN:978-93-5158-581-7, A-231.
 14. Solar Green Synthesis of Zirconium Nanoparticles Using *Ravenala Madagascariensis*. Amol V. Pansare, Daniel L. Coutinho, **Dnyaeshwar K. Kulal**, Vishwanath R. Patil, "National Seminar on Nanotechnology: Environmental, Economic, Social and Health Perspectives" (NEESH2016), 22-23 January 2016 at Annasaheb Waghire College, Otur, Pune, 22nd-23rd January 2016, ISBN:978-93-5158-581-7, A-232.
 15. Anticancer activity of green Synthesized TiNPs with its complex of Capecitabine. Amol A. Shedge, Amol V. Pansare, **Dnyaneshwar K. Kulal** and Vishwanath R.

- Patil, "Green Technology & Sustainable Development: Indigenous practices". 26th and 27th Feb. 2016.
16. Solid Phase Extraction of Pb(II) using Biomass Immobilized on Silica gel. **Dnyaeshwar K. Kulal**, Amol V. Pansare, Amol A. Shedge and Vishwananth R. Patil, Green Technology & Sustainable Development: Indigenous practices". 26th and 27th Feb. 2016.
 17. Greener Approach of Quercetin and its Gold Nanocomposite to Carcinomas Activity. Amol V. Pansare, **Dnyaeshwar K. Kulal**, Amol A. Shedge and Vishwananth R. Patil, Green Technology & Sustainable Development: Indigenous practices". 26th and 27th Feb. 2016.
 18. Non- toxic Cost Effective Chitosan- Starch based Bio Composite for Water Treatment. Mohmad Vasim Sheikh, Santosh Zote, Dinesh Navale, Prasanna Ranade, Apeksha Nagvekar, Dnyaneshwar Kulal" International Conference on Emerging Novel Trends in Science for Human Welfare 2021 (ICENTSHW-2021) 15-02-2021 To 16-02-2021
 19. Synthesis and Investigation of 2,2,2- Trifluoro-N- hexadecylacetamide and 2,2,2- Trifluoro-N- octadecylacetamide for their Mesomorphic properties. Mohmad Vasim Sheikh, Santosh Zote, Dinesh Navale, Prasanna Ranade, Dnyaneshwar Kulal. International Conference on Emerging Novel Trends in Science for Human Welfare 2021 (ICENTSHW-2021) 15-02-2021 To 16-02-2021

Patents

1. **IN 2014MU01580 A 20151127**
Isolation of (4,4,6a,6b,8a,11,12,14b-Octamethyl-2,3,4a,5,6,7,8,9,10, 11,12,12a, 14,14a-tetradecahydro-1H-picen-3-yl) acetate from *ficus arnottiana* leaves using ultrasonication method at ambient temperature.
2. **IN 2014MU02086 A 20160101**
Isolation of (4,4,6a,6b,8a,11,12,14b-Octamethyl-2,3,4a,5,6,7,8, 9,10,11,12, 12a, 14,14a-tetradecahydro-1H-picen-3-yl) acetate from *ficus arnottiana* leaves using circularly spread silica gel and ultrasonication at ambient temperature.
3. **IN 2014MU03806 A 20160603**
Green synthesis of platinum nanoparticles using *Ravenala madagascariensis* leaves extract and their vitro anticancer activity (Human Breast Cancer Cell Line MDA-MB-468), alteration of bovine serum albumin environment.
4. **IN 2014MU04249 A 20160701**
Biosynthesis of platinum nanoparticles by a process of reduction using a fungal strain of *Aspergillus oryzae* and their vitro anticancer activity (Human Breast Cancer Cell Line MDA-MB-468), alteration of bovine serum albumin environment.
5. **IN 2014MU04249 A 20160701**

- Green synthesis of gold nanoparticles using *Colocasia esculenta* leaves extract and their vitro anticancer activity (Human Breast Cancer Cell Line MDA-MB-468), alteration of bovine serum albumin environment.
6. **IN 2014MU03996 A 20160617**
Green synthesis of vanadium nanoparticles using mixtures of three *herbal* plants leaves extract and their vitro anticancer activity (Human Breast Cancer Cell Line MDA-MB-468), alteration of bovine serum albumin environment.
 7. **IN 2014MU03995 A 20160617**
Green synthesis of combined copper-nickel nanoparticles using mixtures of two *herbal* plants leaves extract and their vitro anticancer activity (Human Breast Cancer Cell Line MDA-MB-468), alteration of bovine serum albumin environment.
 8. **IN 2014MU04095 A 20160624**
Green synthesis of silver nanoparticles using *Carica papaya* leaves extract and there in vitro anticancer activity (Human Breast Cancer Cell Line MCF-7) as well as alteration of bovine serum albumin environment.
 9. **IN 2014MU04247 A 20160701**
Green synthesis of palladium nanoparticles using *Carica papaya* leaves extract and there in vitro anticancer activity (Human Breast Cancer Cell Line MCF-7) as well as alteration of bovine serum albumin environment.
 10. **IN 2014MU04248 A 20160701**
Biosynthesis of palladium nanoparticles by a process of reduction using a fungal strain of *Aspergillus oryzae* and their vitro anticancer activity (Human Breast Cancer Cell Line MCF-7) as well as alteration of bovine serum albumin environment.
 11. **IN 2015MU00164 A 20160722**
Green synthesis of selenium nanoparticles using *Trigonella foenum graecum* extract and there in vitro anticancer activity (Human Breast Cancer Cell Line MDA MB-435) as well as alteration of bovine serum albumin environment
 12. **IN 2015MU03633 A 20170331**
Green synthesis of chromium nanoparticles using mixtures of three *herbal* plants leaves extract and there in vitro anticancer activity (Human Breast Cancer Cell Line MDA-MB-435) as well as alteration of bovine serum albumin environment.
 13. **IN 2015MU03632 A 20170331**
Green synthesis of combined platinum-palladium nanoparticles using mixtures of two *herbal* plants leaves extract and there in vitro anticancer activity (Human Breast Cancer Cell Line MDA MB-435) as well as alteration of bovine serum albumin environment.
 14. **IN 2015MU03822 A 20170414**

Biosynthesis of selenium nanoparticles by a process of reduction using a fungal strain of *Aspergillus oryzae* and their vitro anticancer activity (Human Breast Cancer Cell Line MDA MB-435) as well as alteration of bovine serum albumin environment.

15. **IN 2015MU03823 A 20170414**

Biosynthesis of chromium nanoparticles by a process of reduction using a fungal strain of *Aspergillus oryzae* and their vitro anticancer activity (Human Breast Cancer Cell Line MDA MB-435) as well as alteration of bovine serum albumin environment.

16. **IN 201621044816 A 20170421**

Green synthesis of gold nanoparticles using *crinum asiaticum* leaf extract and their application in size dependent catalytic activity.

Publications

1. Lokhande, Kshama; Pethsangave, Dattatray; Kulal, Dnyaneshwar, S. Some "Remediation of toxic dye pollutants by using graphene-based adsorbents." *Environmental Science & Technology, ChemistrySelect*, 2020, 27(5), 8062-8073.
2. D. A. Pethsangave, D. K. Kulal, R. V. Khose, P. H. Wadekar, S. Some "One-Pot Synthetic Approach for Magnetically Separable Graphene Nanocomposite for Dye Degradation" *ChemistrySelect*, 2020, 5(4), 15116-1525.
3. D. K. Kulal, R. V. Khose, D. A. Pethsangave, P. H. Wadekar, S. Some, *Biomass Derived Lignocellulosic Graphene Composite: Novel approach for Removal of Oil and Organic Solvent. ChemistrySelect*, 2019, 4, 4568-4574.
4. DN Navale, P Kalambate, PB Ranade, DK Kulal, SW Zote, Green synthesis of gold nanoparticles using *Crinum asiaticum* leaf extract and their application in size dependent catalytic activity, *Journal of Applicable Chemistry*, 2018, 7 (5), 1285-1290.
5. A. V. Pansare, D. K. Kulal, A. A. Shedge and V. R. Patil. *Green synthesis of anticancerous honeycomb PtNPs clusters: Their alteration effect on BSA and HsDNA using fluorescence probe.* *Journal of Photochemistry and Photobiology, B: Biology* (2016), 162, 473-485.
6. D. K. Kulal, A. V. Pansare, S. R. Tetgure, M. Karve, V. R. Patil. *Determination of uranium(VI) using Penicillium Chrysogenum immobilized on silica gel and spectrophotometer.* *Journal of Radioanalytical and Nuclear Chemistry*, 2016, 307(2), 1253-1263
7. D. K. Kulal, A. V. Pansare, A. A. Shedge and V. R. Patil. *Fungal strain of aspergillus oryzae immobilized on silica gel for Au(III) sorption.* *Eur. Chem. Bull.*, 2016, 5(6), 225-231

8. A. V. Pansare, D. K. Kulal, A. A. Shedge and V. R. Patil. *hsDNA groove binding, photocatalytic activity, and in vitro breast and colon cancer cell reducing function of greener SeNPs*. Dalton Transactions (2016), 45(30), 12144-12155.
9. Dnyaneshwar K. Kulal, Amol Vasanttrao Pansare, Mohmad Vasim Sheikh, Shubham V. Pansare; Amol A. Shedge; Shyam Khairkar; Shraddha Y. Chhatre; Vishwanath R. Patil. "One Pot Bio-Synthesis of Palladium Nanoneedles and Its Bioavailability" Applied Biochemistry and Biotechnology. Communicated.
10. S. Pansare, S. Chakrabarti, A. Pansare, A. Shedge, D. Kulal and V. R. Patil, *Ultra sonic assisted Curcumin-Silver Nanocomposite As A Bioenhancer*, Ultrasonics Sonochemistry, Communicated.
11. Amol V Pansare, Amol A Shedge, Maryappa C Sonawale, Shubham V Pansare, Akshay D Mahakal, Shyam R Khairkar, Shraddha Y Chhatre, Dnyaneshwar K Kulal, Vishwanath R Patil, *Deciphering the sensing of α -amyrin acetate with hs-DNA: a multipronged biological probe*. RSC Advances, 2022,12(3),1238-1243.
12. Shyam R Khairkar, Shubham V Pansare, Amol A Shedge, Shraddha Chhatre, Dnyaneshwar K Kulal, Vishwanath R Patil, Amol V Pansare., *Biological macromolecule chitosan grafted co-polymeric composite: bio-adsorption probe on cationic dyes*. Polymer Bulletin. 2021, 1-15.
13. PB Ranade, DN Navale, SW Zote, DK Kulal, MV Sheikh, MMV Ramana, *Synthesis and spectroscopic investigation of binding of novel Thiazolo [2, 3-a] isoquinoline analog with bovine serum albumin*, IJC-A , 2021, 60A(08), 1081-1085.

Book chapter

1. P. K. Kalambate, S. W. Zote, Y. Shen, D. N. Navale, D. K. Kulal, J. Wu, P. B. Ranade, R. Pothu, R. Bodulla, Y. Huang*, "MXenes: Fundamental and Applications" Published by Materials Research Forum LLC, USA, 51, 204-215. 2019.
2. Dnyaneshwar K. Kulal, Prakash C. Loni, Criss Dcosta, Surajit Some, Pramod K. Kalambate, "Advances in Cyanobacterial Biology" published by Elsevier, Academic Press, USA. 291-297, 2020.
3. D. N. Navale, S. W. Zote, P. B. Ranade, D. K. Kulal, R. Pothu, R. Bodulla, P. K. Kalambate*, *Heterocyclics Synthesis in Water*, A book chapter in the book 'Sonochemical Organic Synthesis' Published by Elsevier, 2019. **Accepted.**
4. Dnyaneshwar K. Kulal, D. N. Navale, S. W. Zote, P. B. Ranade, Pramod K. Kalambate. "Cyanobacteria: as a promising candidate for synthesis of nanoparticles: Advances in Cyanobacterial Biology" published by Elsevier, Academic Press, USA. **Accepted.**

Project Sanctioned

- “Eco-friendly, Cost- effective and sustainable Bio-Composite for wastewater Treatment” CoPI, University of Mumbai. AY 2019-2020

Area of Research

- Water treatment (Oil-water separation and Dye degradation) using Graphene composite.
- Green synthesis of metal nanoparticles & their biological applications including anticancer activity, BSA - DNA interaction.
- Developed water treatment methods using fungal biomass (*Aspergillus Oryzae* and *Penicillium Chrysogenum*) for Gold, Silver & Uranium separation.

Extra-curricular activity

- Worked as a General Secretary in chemistry premier league -2016.
- Worked as a Volunteer for International conference ICSMS- 2015 held at Department of Chemistry, University of Mumbai
- Winner in chemistry premier league - 2014
- Volunteer for 102th Indian science congress held at university of Mumbai.
- Winner in box cricket competition held by K.B.P. boys hostel Nakshatra-2013
- Stood fifth Rank in Intercollegiate Aptitude Test at Ramnarain Ruia College held on 17th January- 2008.
- Completed certificate course conducted by V. G. Vaze College on Plant Tissue Culture Training. 19th May 2010-30th Nov. 2010.
- Completed Maharashtra State certificate in information Technology (MS- CIT) certificate course on computer applications.

Awards and Honors

- CSIR Research Associate (RA) fellow from on 11th December 2017 to 31st Aug 2019.
- UGC- BSR fellowship awarded with reference no. F.7-194/2007 (BSR) (SRF) on 2015
- UGC- BSR fellowship awarded with reference no. F.7-194/2007 (BSR) (JRF) on 2013

Area of Interest

Green chemistry, Nanocomposite synthesis using biomaterials, Development of separation method by using Biomass, Nanoparticles synthesis and its application in biomedicine field, oil- water separation, dye degradation, Waste Water treatment.

Lab skills

- Well trained in handling AAS (Atomic Absorption Spectroscopy), Lyophilizer / Freeze dryer, Spectrofluorimeter, XRD, FT-IR, GC- MS, Polarizing optical microscope, Circular Dichroism, AAS, BET, SEM, UV –Visible Spectrophotometer and Contact angle.
- Good skill in Water analysis parameters like BOD, COD, Sediment analysis.
- Knowledge of NMR, FT-IR and mass spectroscopy for structure elucidation.
- Experience in interaction of small molecules with hs- DNA, BSA.
- Adequate experience in handling instruments like.
- Analyzed data XRD, FT-IR, AAS, TEM, EDAX, XPS, TG-DSC techniques for characterization of Samples.
- Basic knowledge of computer skills such as Chemdraw, Origin, Sci-finder, Adobe Photoshop CS6, Coral Draw, MS office.
- PF4 for XPS Data Plotting.
- Contact angle instruments.
- Rota evaporator.

Date:

Place: Mumbai (Maharashtra)

DNYANESHWAR KISAN KULAL