Stanford



Pritam Kumar Panda

Postdoctoral Scholar, Anesthesiology, Perioperative and Pain Medicine

Curriculum Vitae available Online

Bio

BIO

Dr. Pritam Kumar Panda is an accomplished bioinformatician and researcher specializing in drug design, molecular modeling, and AI-driven protein design. Originally from India and currently based in San Francisco, California, he holds a Ph.D. in Physics, specializing in Atomic, Molecular, and Condensed Matter Physics from Uppsala University in Sweden, where his research bridged quantum and biological phenomena, particularly in bio-inspired materials modeling. With a strong academic background that includes a Master of Science from Utkal University and a Master of Technology from D Y Patil University in India, Dr. Panda has honed his expertise in computational methods for drug design.

Throughout his career, Dr. Panda has held impactful roles in bioinformatics at institutions such as the University Medical Center Freiburg in Breisgau, Germany (2017), Karolinska Institute, Sweden (2021), and the German Cancer Research Center (DKFZ), Heidelberg, Germany (2023). His work in these roles includes developing advanced NGS data analysis pipelines using R, Bash, and Python and integrating cloud computing (AWS) with Nextflow, Docker, Singularity, and Snakemake for workflow automation, markedly enhancing data processing efficiency. His expertise spans molecular modeling, drug design, biophysics, multiomics data management, and high-performance computing, with notable contributions to predictive models in clinical genomics and data visualization.

In addition to his institutional roles, Dr. Panda founded and led Nerdalytics (2021-2023), a bioinformatics consultancy serving the pharmaceutical industry. Under his leadership, the firm focused on delivering cutting-edge solutions in drug design and molecular modeling. One of his significant achievements during this time was securing a research grant from Colgate-Palmolive to develop a pipeline for combinatorial synergy-based drug design targeting photoaging and hyperpigmentation.

An advocate for education and knowledge sharing, Dr. Panda is a recognized Nextflow ambassador and a member of Sigma Xi. He actively contributes to the bioinformatics community through publications, mentoring, and creating instructional content on platforms like YouTube. His excellence in the field has been acknowledged through multiple awards and grants from institutions like the Karolinska Institute and Uppsala University. He has also been featured in The Global Indian series "Indians in Europe" for his contributions to science and technology.

Currently, Dr. Panda serves as a Postdoctoral Scholar in the Department of Anesthesiology, Perioperative, and Pain Medicine at Stanford University School of Medicine. His current research is centered on the development of novel, battlefield-ready anesthetics to reduce injury-associated trauma and improve combat casualty outcomes. His research combines AI-driven protein design with high-throughput virtual screening to accelerate drug discovery

and design safer anesthetic agents. His work also aims to unravel the poorly understood neural and molecular mechanisms of anesthesia, with the ultimate goal of creating drugs that are significantly safer than current options, enabling unmonitored use in battlefield conditions.

HONORS AND AWARDS

- Computer-Aided Drug Design (CADD) Research Grant, Colgate & Palmolive, New York, USA (2021)
- Uppsala University Innovation Grant, ABB Power Grids, Hitachi, Sweden (2022)
- IMM Strategic Interdisciplinary Collaboration Grant, Karolinska Institute (2022)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Nextflow Ambassador, Seqera (2024 - present)
- SigmaXi Member, The Scientific Research Honor Society (2024 - present)

PROFESSIONAL EDUCATION

- Bachelor of Science, Utkal University, India , Bioinformatics (2012)
- Master of Science, Utkal University, India , Bioinformatics (2014)
- Master of Technology, D Y Patil University, India , Bioinformatics (2016)
- Doctor of Philosophy, Uppsala University, Sweden , Physics (Specialization in Atomic, Molecular and Condensed Matter Physics) (2023)

STANFORD ADVISORS

- Edward Bertaccini, Postdoctoral Faculty Sponsor

PATENTS

- Johan Frostegård MD, Shailesh Kumar Samal Ph.D., Pritam Kumar Panda Ph.D.. "Sweden Patent WO2023217787 (Patent Cooperation Treaty (PCT) COMPOSITION, METHODS AND USES FOR ANTI-VIRAL THERAPY", INFLAVONA AB, Nov 16, 2023

LINKS

- Google Scholar: https://scholar.google.com/citations?user=H2ggrzQAAAAJ&hl=en
- LinkedIn: https://www.linkedin.com/in/pritam-kumar-panda/
- GitHub: https://github.com/pritampanda15
- Portfolio: https://www.atomodyssey.com

Research & Scholarship

RESEARCH INTERESTS

- Brain and Learning Sciences
- Data Sciences
- Research Methods
- Technology and Education

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Dr. Panda’s current research at Stanford University School of Medicine centers on the innovative design of anesthetics optimized for battlefield application. His work integrates advanced methodologies such as AI-driven protein design, molecular dynamics simulations, and computational drug design to identify and model potential anesthetic compounds with precision and efficacy.

Leveraging AI protein design, Dr. Panda uses deep learning algorithms to explore and predict structural variations in proteins that can enhance the effectiveness of anesthetic agents, focusing on stability and adaptability in extreme conditions. Molecular dynamics simulations play a crucial role in this process, allowing Dr. Panda to observe the interactions of candidate compounds at the atomic level and simulate their behavior under diverse physiological scenarios. This approach provides a predictive framework to refine anesthetic agents for resilience and quick action.

His research also incorporates Quantitative Structure-Activity Relationship (QSAR) modeling, which enables him to quantitatively link molecular properties to the compounds' pharmacodynamic and pharmacokinetic attributes. This comprehensive QSAR analysis aids in predicting the efficacy and safety of novel anesthetic agents, reducing the need for preliminary testing. By combining these computational techniques, Dr. Panda's work aims to accelerate the development of anesthetics that meet the unique demands of military and field medicine.

Publications

PUBLICATIONS

- **Alchemical Free Energy Perturbation Predicts Relative Binding Affinities of Propofol Analogs and Etomidate Stereoisomers at the GABAAR.** *ACS omega*
  Panda, P. K., Bertaccini, E. J.
  2026; 11 (37): 56651-56663
- **Alchemical Free Energy Perturbation Predicts Relative Binding Affinities of Propofol Analogs and Etomidate Stereoisomers at the GABA_AR** *ACS OMEGA*
  Panda, P., Bertaccini, E. J.
  2026
- **An ATM-AMPK-Wip1 feedback loop governing DNA-damage signaling and tumor stress responses.** *Cell death & disease*
  Gupta, S., Panda, P. K.
  2026
- **Clinical evolution, genetic landscape and trajectories of clonal hematopoiesis in SAMD9/SAMD9L syndromes.** *Nature medicine*
  Sahoo, S. S., Pastor, V. B., Goodings, C., Voss, R. K., Kozyra, E. J., Szvetnik, A., Noellke, P., Dworzak, M., Starý, J., Locatelli, F., Masetti, R., Schmugge, M., De Moerloose, et al
  2021; 27 (10): 1806-1817
- **Degradation of Alzheimer's Amyloid-β by a Catalytically Inactive Insulin-Degrading Enzyme.** *Journal of molecular biology*
  Sahoo, B. R., Panda, P. K., Liang, W., Tang, W. J., Ahuja, R., Ramamoorthy, A.
  2021; 433 (13): 166993
- **Structure-based drug designing and immunoinformatics approach for SARS-CoV-2.** *Science advances*
  Panda, P. K., Arul, M. N., Patel, P., Verma, S. K., Luo, W., Rubahn, H. G., Mishra, Y. K., Suar, M., Ahuja, R.
  2020; 6 (28): eabb8097
- **Investigation of the Factors That Dictate the Preferred Orientation of Lexitropsins in the Minor Groove of DNA.** *Journal of medicinal chemistry*
  Alniss, H. Y., Witzel, I. I., Semreen, M. H., Panda, P. K., Mishra, Y. K., Ahuja, R., Parkinson, J. A.
  2019; 62 (22): 10423-10440
- **Azacitidine is effective for targeting leukemia-initiating cells in juvenile myelomonocytic leukemia.** *Leukemia*
  Krombholz, C. F., Gallego-Villar, L., Sahoo, S. S., Panda, P. K., Wlodarski, M. W., Aumann, K., Hartmann, M., Lipka, D. B., Daskalakis, M., Plass, C., Niemeyer, C. M., Erlacher, M., Flotho, et al
  2019; 33 (7): 1805-1810
- **Monosomy 7 As the Initial Hit Followed By Sequential Acquisition of SETBP1 and ASXL1 Driver Mutations in Childhood Myelodysplastic Syndromes**
  Loyola, V., Panda, P., Sahoo, S., Szvetnik, E., Kozyra, E. J., Voss, R. K., Lebrecht, D., Wehrle, J., Erlacher, M., Stary, J., Flotho, C., Goehring, G., Schlegelberger, et al
  AMER SOC HEMATOLOGY.2018

- **SAMD9 and SAMD9L Germline Disorders in Patients Enrolled in Studies of the European Working Group of MDS in Childhood (EWOG-MDS): Prevalence, Outcome, Phenotype and Functional Characterisation**
  Sahoo, S., Loyola, V., Panda, P., Szvetnik, E., Kozyra, E. J., Voss, R. K., Lebrecht, D., Barzilai, S., Buchner, J., Catala, A., De Moerloose, B., Dworzak, M., Fabri, et al
  AMER SOC HEMATOLOGY.2018

- **Molecular insights to in vitro biocompatibility of endodontic Pulpotec with macrophages determined by oxidative stress and apoptosis** *BIOMEDICINE & PHARMACOTHERAPY*
  Mohanty, A., Patro, S., Jha, E., Patel, P., Nandi, A., Sinha, A., Naser, S., Das, A., Panda, P., Rout, P., Mishra, R., Kaushik, N., Singh, et al
  2024; 176: 116921

- **Nanoparticle-mediated metronomic chemotherapy in cancer: A paradigm of precision and persistence** *CANCER LETTERS*
  Kirti, A., Simnani, F., Jena, S., Lenka, S. S., Kalalpitiya, C., Naser, S., Singh, D., Choudhury, A., Sahu, R., Yadav, A., Sinha, A., Nandi, A., Panda, et al
  2024; 594: 216990

- **A novel professional-use synergistic peel technology to reduce visible hyperpigmentation on face: Clinical evidence and mechanistic understanding by computational biology and optical biopsy.** *Experimental dermatology*
  Bhardwaj, V., Handler, M. Z., Mao, J., Azadegan, C., Panda, P. K., Breunig, H. G., Wenskus, I., Diaz, I., König, K.
  2024; 33 (4): e15069

- **The posterity of Zebrafish in paradigm of in vivo molecular toxicological profiling** *BIOMEDICINE & PHARMACOTHERAPY*
  Verma, S. K., Nandi, A., Sinha, A., Patel, P., Mohanty, S., Jha, E., Jena, S., Kumari, P., Ghosh, A., Jerman, I., Chouhan, R., Dutt, A., Samal, et al
  2024; 171: 116160

- **Proximal discrepancies in intrinsic atomic interaction determines comparative in vivo biotoxicity of Chlorpyrifos and 3,5,6-trichloro-2-pyridinol in embryonic zebrafish** *SCIENCE OF THE TOTAL ENVIRONMENT*
  Ghosh, A., Singh, S., Saha, U., Jena, S., Simnani, F., Singh, D., Gupta, A., Nandi, A., Sinha, A., Nayak, T., Rout, P., Panda, P., Singh, et al
  2024; 913: 169780

- **In silico nanotoxicology: The computational biology state of art for nanomaterial safety assessments** *MATERIALS & DESIGN*
  Verma, S. K., Nandi, A., Simnani, F., Singh, D., Sinha, A., Naser, S., Sahoo, J., Lenka, S. S., Panda, P., Dutt, A., Kaushik, N., Singh, D., Suar, et al
  2023; 235

- **In vivo molecular biocompatibility of Calotropis gigentea contrived smart Poly(N-isopropylacrylamide)-co-sulphonic-Silver microgel hybrid with embryonic Danio rerio inferred via intrinsic atomic physiological impacts** *JOURNAL OF ENVIRONMENTAL CHEMICAL ENGINEERING*
  Jha, E., Patel, P., Kumari, P., Verma, K., Panda, P., Mohanty, P. S., Patro, S., Varma, R. S., Mishra, Y., Kaushik, N., Suar, M., Verma, S. K.
  2023; 11 (6)

- **Boosting Copper Biocidal Activity by Silver Decoration and Few-Layer Graphene in Coatings on Textile Fibers** *GLOBAL CHALLENGES*
  Stular, D., Van de Velde, N., Drincic, A., Kogovsek, P., Filipic, A., Fric, K., Simoncic, B., Tomsic, B., Chouhan, R. S., Bohm, S., Verma, S., Panda, P., Jerman, et al
  2023; 7 (10): 2300113

- **Intrinsic insights to antimicrobial effects of Nitrofurantoin to multi drug resistant Salmonella enterica serovar Typhimurium ms202** *BIOMEDICINE & PHARMACOTHERAPY*
  Mohakud, N., Panda, R., Singh, D., Patra, S., Simnani, F., Sinha, A., Nandi, A., Jha, E., Singh, S., Kaushik, N., Panda, P., Singh, D., Verma, et al
  2023; 165: 115180

- **Network analysis of chromophore binding site in LOV domain.** *Computers in biology and medicine*
  Panda, R., Panda, P. K., Krishnamoorthy, J., Kar, R. K.
  2023; 161: 106996

- **Posterity of nanoscience as lipid nanosystems for Alzheimer's disease regression** *MATERIALS TODAY BIO*
  Naser, S., Singh, D., Preetam, S., Kishore, S., Kumar, L., Nandi, A., Simnani, F., Choudhury, A., Sinha, A., Mishra, Y., Suar, M., Panda, P., Malik, et al
  2023; 21: 100701

- **Chemistry of CO2-phillic materials in enzyme-based hybrid interfacial systems: Implications, strategies and applications** *FUEL PROCESSING TECHNOLOGY*
  Nadda, A., Dutta, D., Kumar, A., Sharma, K., Panda, P., Kundu, D., Yadav, D., Kumar, S., Lam, S.

2023; 250

- **Nanocarrier vaccine therapeutics for global infectious and chronic diseases** *MATERIALS TODAY*
  Simnani, F., Singh, D., Patel, P., Choudhury, A., Sinha, A., Nandi, A., Samal, S., Verma, S. K., Panda, P.
  2023; 66: 371-408

- **Biofilm modifiers: The disparity in paradigm of oral biofilm ecosystem** *BIOMEDICINE & PHARMACOTHERAPY*
  Das, A., Patro, S., Simnani, F., Singh, D., Sinha, A., Kumari, K., Rao, P., Singh, S., Kaushik, N., Panda, P., Suar, M., Verma, S. K.
  2023; 164: 114966

- **Synergistic degradation of Chlorpyrifos by modified solar Photo-Fenton process with bacterial metabolism reduces in vivo biotoxicity in zebrafish (Danio rerio)** *SCIENCE OF THE TOTAL ENVIRONMENT*
  Nayak, T., Patel, P., Ghosh, A., Simnani, F., Kumari, K., Das, S., Nandi, A., Ghosh, A., Panda, P., Kaushik, N., Raina, V., K.Verma, S.
  2023; 891: 164488

- **Biosurfactant-functionalized Silver nanoparticles infer intrinsic proximal interaction via Lysine and glutamic acid for reduced in vivo molecular biotoxicity with embryonic zebrafish through oxidative stress and apoptosis** *JOURNAL OF ENVIRONMENTAL CHEMICAL ENGINEERING*
  Kumari, K., Nandi, A., Sinha, A., Panda, P., Ghosh, A., Gouda, S. K., Suar, M., Verma, S. K., Raina, V.
  2023; 11 (3)

- **Atmospheric microplastic and nanoplastic: The toxicological paradigm on the cellular system** *ECOTOXICOLOGY AND ENVIRONMENTAL SAFETY*
  Choudhury, A., Simnani, F., Singh, D., Patel, P., Sinha, A., Nandi, A., Ghosh, A., Saha, U., Kumari, K., Jaganathan, S., Kaushik, N., Panda, P., Suar, et al
  2023; 259: 115018

- **Marine fucoidans: Structural, extraction, biological activities and their applications in the food industry** *FOOD HYDROCOLLOIDS*
  Mensah, E., Kanwugu, O., Panda, P., Adadi, P.
  2023; 142

- **Amelioration of lipopeptide biosurfactants for enhanced antibacterial and biocompatibility through molecular antioxidant property by methoxy and carboxyl moieties** *BIOMEDICINE & PHARMACOTHERAPY*
  Kumari, K., Behera, H., Nayak, P., Sinha, A., Nandi, A., Ghosh, A., Saha, U., Suar, M., Panda, P., Verma, S. K., Raina, V.
  2023; 161: 114493

- **The paradigm of prophylactic viral outbreaks measures by microbial biosurfactants** *JOURNAL OF INFECTION AND PUBLIC HEALTH*
  Kumari, K., Nandi, A., Sinha, A., Ghosh, A., Sengupta, S., Saha, U., Singh, P. K., Panda, P., Raina, V., Verma, S. K.
  2023; 16 (4): 575-587

- **The paradigm of miRNA and siRNA influence in Oral-biome** *BIOMEDICINE & PHARMACOTHERAPY*
  Sinha, A., Bhattacharjee, R., Bhattacharya, B., Nandi, A., Shekhar, R., Jana, A., Saha, K., Kumar, L., Patro, S., Panda, P., Kaushik, N., Suar, M., Verma, et al
  2023; 159: 114269

- **Gene Therapy for Neuropsychiatric Disorders: Potential Targets and Tools** *CNS & NEUROLOGICAL DISORDERS-DRUG TARGETS*
  Shahcheraghi, S. H., Ayatollahi, J., Lotfi, M., Aljabali, A. A. A., Al-Zoubi, M. S., Panda, P. K., Mishra, V., Satija, S., Charbe, N. B., Serrano-Aroca, A., Bahar, B., Takayama, K., Goyal, et al
  2023; 22 (1): 51-65

- **Emerging Trends in Advanced Translational Applications of Silver Nanoparticles: A Progressing Dawn of Nanotechnology** *JOURNAL OF FUNCTIONAL BIOMATERIALS*
  Husain, S., Nandi, A., Simnani, F., Saha, U., Ghosh, A., Sinha, A., Sahay, A., Samal, S., Panda, P., Verma, S. K. K.
  2023; 14 (1)

- **Putative targeting by BX795 causes decrease in protein kinase C protein levels and inhibition of HSV1 infection.** *Antiviral research*
  Suryawanshi, R. K., Patil, C. D., Wu, D., Panda, P. K., Singh, S. K., Volety, I., Ahuja, R., Mishra, Y. K., Shukla, D.
  2022; 208: 105454

- **Synergy of nanocarriers with CRISPR-Cas9 in an emerging technology platform for biomedical appliances: Current insights and perspectives** *MATERIALS & DESIGN*

Bhattacharjee, R., Jana, A., Nandi, A., Sinha, A., Bhattacharjee, A., Mitra, S., Kar, S., Dey, A., Singh, S., Varma, R. S., Panda, P., Suar, M., Verma, et al
2022; 224

- **Network analysis reveals that the tumor suppressor lncRNA GAS5 acts as a double-edged sword in response to DNA damage in gastric cancer** *SCIENTIFIC REPORTS*
  Gupta, S., Panda, P., Luo, W., Hashimoto, R. F., Ahuja, R.
  2022; 12 (1): 18312

- **The translational paradigm of nanobiomaterials: Biological chemistry to modern applications** *MATERIALS TODAY BIO*
  Sinha, A., Simnani, F., Singh, D., Nandi, A., Choudhury, A., Patel, P., Jha, E., Chouhan, R., Kaushik, N., Mishra, Y., Panda, P., Suar, M., Verma, et al
  2022; 17: 100463

- **Phage-tail-like bacteriocins as a biomedical platform to counter anti-microbial resistant pathogens** *BIOMEDICINE & PHARMACOTHERAPY*
  Bhattacharjee, R., Nandi, A., Sinha, A., Kumar, H., Mitra, D., Mojumdar, A., Patel, P., Jha, E., Mishra, S., Rout, P., Panda, P., Suar, M., Verma, et al
  2022; 155: 113720

- **Emerging trends in the nanomedicine applications of functionalized magnetic nanoparticles as novel therapies for acute and chronic diseases** *JOURNAL OF NANOBIOTECHNOLOGY*
  Dash, S., Das, T., Patel, P., Panda, P., Suar, M., Verma, S. K.
  2022; 20 (1): 393

- **Phage delivered CRISPR-Cas system to combat multidrug-resistant pathogens in gut microbiome.** *Biomedicine & pharmacotherapy = Biomedecine & pharmacotherapie*
  Nath, A., Bhattacharjee, R., Nandi, A., Sinha, A., Kar, S., Manoharan, N., Mitra, S., Mojumdar, A., Panda, P. K., Patro, S., Dutt, A., Ahuja, R., Verma, et al
  2022; 151: 113122

- **Analysis of molecular ligand functionalization process in nano-molecular electronic devices containing densely packed nano-particle functionalization shells** *NANOTECHNOLOGY*
  Sher, O., Han, Y., Xu, H., Li, H., Daun, T., Kumar, S., Grigoriev, A., Panda, P., Orthaber, A., Serein-Spirau, F., Jarrosson, T., Jafri, S. M., Leifer, et al
  2022; 33 (25)

- **Theragnostic application of nanoparticle and CRISPR against food-borne multi-drug resistant pathogens** *MATERIALS TODAY BIO*
  Bhattacharjee, R., Nandi, A., Mitra, P., Saha, K., Patel, P., Jha, E., Panda, P., Singh, S., Dutt, A., Mishra, Y., Verma, S. K.
  2022; 15: 100291

- **In vivo intrinsic atomic interaction infer molecular eco-toxicity of industrial TiO₂ nanoparticles via oxidative stress channelized steatosis and apoptosis in Paramecium caudatum** *ECOTOXICOLOGY AND ENVIRONMENTAL SAFETY*
  Mohanty, S., Patel, P., Jha, E., Panda, P., Kumari, P., Singh, S., Sinha, A., Saha, A., Kaushik, N., Raina, V., Verma, S. K., Suar, M.
  2022; 241: 113708

- **Hydoxylated β- and δ-Hexacholorocyclohexane metabolites infer influential intrinsic atomic pathways interaction to elicit oxidative stress-induced apoptosis for bio-toxicity** *ENVIRONMENTAL RESEARCH*
  Singh, K., Verma, S. K., Patel, P., Panda, P., Sinha, A., Das, B., Raina, V., Suar, M., Ray, L.
  2022; 212: 113496

- **Integrated bioinformatics-cheminformatics approach toward locating pseudo-potential antiviral marine alkaloids against SARS-CoV-2-Mpro** *PROTEINS-STRUCTURE FUNCTION AND BIOINFORMATICS*
  Swain, S. S., Singh, S. R., Sahoo, A., Panda, P., Hussain, T., Pati, S.
  2022; 90 (9): 1617-1633

- **Antibodies Against Phosphorylcholine Among 60-Year-Olds: Clinical Role and Simulated Interactions.** *Frontiers in cardiovascular medicine*
  Samal, S. K., Panda, P. K., Vikström, M., Leander, K., de Faire, U., Ahuja, R., Frostegård, J.
  2022; 9: 809007

- **Nanocarrier cancer therapeutics with functional stimuli-responsive mechanisms.** *Journal of nanobiotechnology*
  Kaushik, N., Borkar, S. B., Nandanwar, S. K., Panda, P. K., Choi, E. H., Kaushik, N. K.
  2022; 20 (1): 152

- **Dynamical modeling of miR-34a, miR-449a, and miR-16 reveals numerous DDR signaling pathways regulating senescence, autophagy, and apoptosis in HeLa cells.** *Scientific reports*

Gupta, S., Panda, P. K., Hashimoto, R. F., Samal, S. K., Mishra, S., Verma, S. K., Mishra, Y. K., Ahuja, R.
2022; 12 (1): 4911

- **Investigation of Nd³⁺ incorporation in Ce-rhabdophane: Insight from structural flexibility and occupation mechanism** *JOURNAL OF THE AMERICAN CERAMIC SOCIETY*
  Liu, H., Zhao, X., Teng, Y., Li, Y., Zheng, X., Wang, S., Wu, L., Panda, P., Ahuja, R.
  2022; 105 (7): 4974-4985
- **Two-Dimensional Bismuthene Nanosheets for Selective Detection of Toxic Gases** *ACS APPLIED NANO MATERIALS*
  Panigrahi, P., Panda, P., Pal, Y., Bae, H., Lee, H., Ahuja, R., Hussain, T.
  2022
- **Crystallinity modulation originates ferroelectricity like nature in piezoelectric selenium** *NANO ENERGY*
  Alluri, N., Raj, N., Khandelwal, G., Panda, P., Banerjee, A., Mishra, Y., Ahuja, R., Kim, S.
  2022; 95
- **The Hha-TomB toxin-antitoxin module in Salmonella enterica serovar Typhimurium limits its intracellular survival profile and regulates host immune response.** *Cell biology and toxicology*
  Paul, P., Patel, P., Verma, S. K., Mishra, P., Sahu, B. R., Panda, P. K., Kushwaha, G. S., Senapati, S., Misra, N., Suar, M.
  2022; 38 (1): 111-127
- **Aurora Borealis in dentistry: The applications of cold plasma in biomedicine** *MATERIALS TODAY BIO*
  Lata, S., Chakravorty, S., Mitra, T., Pradhan, P., Mohanty, S., Patel, P., Jha, E., Panda, P., Verma, S. K., Suar, M.
  2022; 13: 100200
- **Plasmodium falciparum HSP40 protein eCiJp traffics to the erythrocyte cytoskeleton and interacts with the human HSP70 chaperone HSPA1.** *FEBS letters*
  Sahu, W., Bai, T., Panda, P. K., Mazumder, A., Das, A., Ojha, D. K., Verma, S. K., Elangovan, S., Reddy, K. S.
  2022; 596 (1): 95-111
- **Molecular nanoinformatics approach assessing the biocompatibility of biogenic silver nanoparticles with channelized intrinsic steatosis and apoptosis** *GREEN CHEMISTRY*
  Panda, P., Kumari, P., Patel, P., Samal, S., Mishra, S., Tambuwala, M. M., Dutt, A., Hilscherova, K., Mishra, Y., Varma, R. S., Suar, M., Ahuja, R., Verma, et al
  2022; 24 (3): 1190-1210
- **Contact electrification through interfacial charge transfer: a mechanistic viewpoint on solid-liquid interfaces** *NANOSCALE ADVANCES*
  Panda, P., Singh, D., Kohler, M. H., de Vargas, D. D., Wang, Z., Ahuja, R.
  2022; 4 (3): 884-893
- **Publisher Correction: Clinical evolution, genetic landscape and trajectories of clonal hematopoiesis in SAMD9/SAMD9L syndromes.** *Nature medicine*
  Sahoo, S. S., Pastor, V. B., Goodings, C., Voss, R. K., Kozyra, E. J., Szvetnik, A., Noellke, P., Dworzak, M., Starý, J., Locatelli, F., Masetti, R., Schmugge, M., De Moerloose, et al
  2021; 27 (12): 2248
- **Autoimmunity roots of the thrombotic events after COVID-19 vaccination.** *Autoimmunity reviews*
  Elrashdy, F., Tambuwala, M. M., Hassan, S. S., Adadi, P., Seyran, M., Abd El-Aziz, T. M., Rezaei, N., Lal, A., Aljabali, A. A., Kandimalla, R., Bazan, N. G., Azad, G. K., Sherchan, et al
  2021; 20 (11): 102941
- **Bio-acceptable 0D and 1D ZnO nanostructures for cancer diagnostics and treatment** *MATERIALS TODAY*
  Ortiz-Casas, B., Galdamez-Martinez, A., Gutierrez-Flores, J., Baca Ibanez, A., Panda, P., Santana, G., Astudillo de la Vega, H., Suar, M., Gutierrez Rodelo, C., Kaushik, A., Mishra, Y., Dutt, A.
  2021; 50: 533-569
- **The mechanism behind flaring/triggering of autoimmunity disorders associated with COVID-19.** *Autoimmunity reviews*
  Redwan, E. M., Alghamdi, M. F., El-Aziz, T. M., Adadi, P., Aljabali, A. A., Attrish, D., Azad, G. K., Baetas-da-Cruz, W., Barh, D., Bazan, N. G., Brufsky, A. M., Chauhan, G., Hassan, et al
  2021; 20 (10): 102909

- **Altered electrochemical properties of iron oxide nanoparticles by carbon enhance molecular biocompatibility through discrepant atomic interaction** *MATERIALS TODAY BIO*
  Verma, S. K., Thirumurugan, A., Panda, P. K., Patel, P., Nandi, A., Jha, E., Prabakaran, K., Udayabhaskar, R., Mangalaraja, R. V., Mishra, Y. K., Akbari-Fakhrabadi, A., Morel, M. J., Suar, et al
  2021; 12: 100131

- **Nanoparticle-biological interactions: the renaissance of bionomics in the myriad nanomedical technologies** *NANOMEDICINE*
  Panda, P., Verma, S. K., Suar, M.
  2021; 16 (25): 2249-2254

- **Effects of Atorvastatin on T-Cell Activation and Apoptosis in Systemic Lupus Erythematosus and Novel Simulated Interactions With C-Reactive Protein and Interleukin 6.** *ACR open rheumatology*
  Sun, J., Kumar Panda, P., Kumar Samal, S., Ahuja, R., Ajeganova, S., Hafström, I., Liu, A., Frostegård, J.
  2021; 3 (9): 642-653

- **Targeting LIN28: a new hope in prostate cancer theranostics** *FUTURE ONCOLOGY*
  Shrivastava, G., Aljabali, A. A. A., Shahcheraghi, S., Lotfi, M., Shastri, M. D., Shukla, S. D., Chellappan, D. K., Jha, N., Anand, K., Dureja, H., Pabari, R. M., Mishra, V., Almutary, et al
  2021; 17 (29): 3873-3880

- **The viral capsid as novel nanomaterials for drug delivery** *FUTURE SCIENCE OA*
  Aljabali, A. A. A., Hassan, S., Pabari, R. M., Shahcheraghi, S. H., Mishra, V., Charbe, N. B., Chellappan, D. K., Dureja, H., Gupta, G., Almutary, A. G., Alnuqaydan, A. M., Verma, S. K., Panda, et al
  2021; 7 (9): FSO744

- **COVID-19 Vaccines and Thrombosis-Roadblock or Dead-End Street?** *BIOMOLECULES*
  Lundstrom, K., Barh, D., Uhal, B. D., Takayama, K., Aljabali, A. A. A., Abd El-Aziz, T., Lal, A., Redwan, E. M., Adadi, P., Chauhan, G., Sherchan, S. P., Azad, G., Rezaei, et al
  2021; 11 (7)

- **Molecular toxicity of Benzo(a)pyrene mediated by elicited oxidative stress infer skeletal deformities and apoptosis in embryonic zebrafish** *SCIENCE OF THE TOTAL ENVIRONMENT*
  Elfawy, H. A., Anupriya, S., Mohanty, S., Patel, P., Ghosal, S., Panda, P., Das, B., Verma, S. K., Patnaik, S.
  2021; 789: 147989

- **A unique view of SARS-CoV-2 through the lens of ORF8 protein.** *Computers in biology and medicine*
  Hassan, S. S., Aljabali, A. A., Panda, P. K., Ghosh, S., Attrish, D., Choudhury, P. P., Seyran, M., Pizzol, D., Adadi, P., Abd El-Aziz, T. M., Soares, A., Kandimalla, R., Lundstrom, et al
  2021; 133: 104380

- **Overview of key molecular and pharmacological targets for diabetes and associated diseases** *LIFE SCIENCES*
  Shahcheraghi, S., Aljabali, A. A. A., Al Zoubi, M. S., Mishra, V., Charbe, N. B., Haggag, Y. A., Shrivastava, G., Almutary, A. G., Alnuqaydan, A. M., Barh, D., Dua, K., Chellappan, D. K., Gupta, et al
  2021; 278: 119632

- **Determining factors for the nano-biocompatibility of cobalt oxide nanoparticles: proximal discrepancy in intrinsic atomic interactions at differential vicinage** *GREEN CHEMISTRY*
  Verma, S. K., Panda, P., Kumari, P., Patel, P., Arunima, A., Jha, E., Husain, S., Prakash, R., Hergenroder, R., Mishra, Y., Ahuja, R., Varma, R. S., Suar, et al
  2021; 23 (9): 3439-3458

- **One dimensional Au-ZnO hybrid nanostructures based CO₂ detection: Growth mechanism and role of the seed layer on sensing performance** *SENSORS AND ACTUATORS B-CHEMICAL*
  Gonzalez-Garnica, M., Galdamez-Martinez, A., Malagon, F., Ramos, C. D., Santana, G., Abolhassani, R., Panda, P., Kaushik, A., Mishra, Y., Karthik, T. V. K., Dutt, A.
  2021; 337

- **Intrinsic atomic interaction at molecular proximal vicinity infer cellular biocompatibility of antibacterial nanopepper** *NANOMEDICINE*
  Jha, E., Panda, P., Patel, P., Kumari, P., Mohanty, S., Parashar, S. S., Ahuja, R., Verma, S. K., Suar, M.
  2021; 16 (4): 307-322

- **Molecular intrinsic proximal interaction infer oxidative stress and apoptosis modulated in vivo biocompatibility of P.niruri contrived antibacterial iron oxide nanoparticles with zebra fish** *ENVIRONMENTAL POLLUTION*
  Sheel, R., Kumari, P., Panda, P., Ansari, M., Patel, P., Singh, S., Kumari, B., Sarkar, B., Mallick, M., Verma, S. K.
  2020; 267: 115482

- **2D g-C₃N₄ monolayer for amino acids sequencing** *APPLIED SURFACE SCIENCE*
  Zhao, X., Panda, P., Singh, D., Yang, X., Mishra, Y., Ahuja, R.
  2020; 528

- **Core-shell nanostructures: perspectives towards drug delivery applications** *JOURNAL OF MATERIALS CHEMISTRY B*
  Kumar, R., Mondal, K., Panda, P., Kaushik, A., Abolhassani, R., Ahuja, R., Rubahn, H., Mishra, Y.
  2020; 8 (39): 8992-9027

- **Biocompatible biogenic silver nanoparticles interact with caspases on an atomic level to elicit apoptosis** *NANOMEDICINE*
  Kumari, S., Kumari, P., Panda, P. K., Patel, P., Jha, E., Mallick, M., Suar, M., Verma, S. K.
  2020; 15 (22): 2119-2132

- **Hydrogen storage characteristics of Li and Na decorated 2D boron phosphide** *SUSTAINABLE ENERGY & FUELS*
  Khossossi, N., Benhouria, Y., Naqvi, S. R., Panda, P. K., Essaoudi, I., Ainane, A., Ahuja, R.
  2020; 4 (9): 4538-4546

- **Rational Design of 2D h-BAs Monolayer as Advanced Sulfur Host for High Energy Density Li-S Batteries** *ACS APPLIED ENERGY MATERIALS*
  Khossossi, N., Panda, P., Singh, D., Shukla, V., Mishra, Y., Essaoudi, I., Ainane, A., Ahuja, R.
  2020; 3 (8): 7306-7317

- **Molecules versus Nanoparticles: Identifying a Reactive Molecular Intermediate in the Synthesis of Ternary Coinage Metal Chalcogenides** *INORGANIC CHEMISTRY*
  Gahlot, S., Jeanneau, E., Singh, D., Panda, P., Mishra, Y., Ahuja, R., Ledoux, G., Mishra, S.
  2020; 59 (11): 7727-7738

- **Impact of edge structures on interfacial interactions and efficient visible-light photocatalytic activity of metal-semiconductor hybrid 2D materials** *CATALYSIS SCIENCE & TECHNOLOGY*
  Singh, D., Panda, P., Khossossi, N., Mishra, Y., Ainane, A., Ahuja, R.
  2020; 10 (10): 3279-3289

- **Green synthesized MgO nanoparticles infer biocompatibility by reducing in vivo molecular nanotoxicity in embryonic zebrafish through arginine interaction elicited apoptosis.** *The Science of the total environment*
  Verma, S. K., Nisha, K., Panda, P. K., Patel, P., Kumari, P., Mallick, M. A., Sarkar, B., Das, B.
  2020; 713: 136521

- **Strain-Engineered Metal-Free h-B₂O Monolayer as a Mechanocatalyst for Photocatalysis and Improved Hydrogen Evolution Reaction** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Zhao, X., Yang, X., Singh, D., Panda, P., Luo, W., Li, Y., Ahuja, R.
  2020; 124 (14): 7884-7892

- **Selective in vivo molecular and cellular biocompatibility of black peppercorns by piperine-protein intrinsic atomic interaction with elicited oxidative stress and apoptosis in zebrafish eleuthero embryos** *ECOTOXICOLOGY AND ENVIRONMENTAL SAFETY*
  Patel, P., Panda, P., Kumari, P., Singh, P., Nandi, A., Mallick, M. A., Das, B., Suar, M., Verma, S. K.
  2020; 192: 110321

- **Van der Waals induced molecular recognition of canonical DNA nucleobases on a 2D GaS monolayer** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
  Singh, D., Panda, P., Mishra, Y., Ahuja, R.
  2020; 22 (12): 6706-6715

- **Carbon-phosphide monolayer with high carrier mobility and perceptible I-V response for superior gas sensing** *NEW JOURNAL OF CHEMISTRY*
  Singh, D., Shukla, V., Panda, P., Mishra, Y., Rubahn, H., Ahuja, R.
  2020; 44 (9): 3777-3785

- **Necklace-like Nitrogen-Doped Tubular Carbon 3D Frameworks for Electrochemical Energy Storage** *ADVANCED FUNCTIONAL MATERIALS*
  Yuksel, R., Buyukcakir, O., Panda, P., Lee, S., Jiang, Y., Singh, D., Hansen, S., Adelung, R., Mishra, Y., Ahuja, R., Ruoff, R. S.
  2020; 30 (10)

- **Electronic and optical properties of a structural defect in 2D MgF₂ monolayer**
  Mahida, H. R., Singh, D., Panda, P., Sonvane, Y., Thakor, P. B., Ahuja, R.
  edited by Shekhawat, M. S., Bhardwaj, S., Suthar, B.
  AMER INST PHYSICS.2020

- **Progress in supercapacitors: roles of two dimensional nanotubular materials** *NANOSCALE ADVANCES*
  Panda, P., Grigoriev, A., Mishra, Y., Ahuja, R.
  2020; 2 (1): 70-108

- **Landscape of ROD9 Island: Functional annotations and biological network of hypothetical proteins in Salmonella enterica.** *Computational biology and chemistry*
  Soni, N., Swain, S. K., Kant, R., Singh, A., Ravichandran, R., Verma, S. K., Panda, P. K., Suar, M.
  2019; 83: 107110

- **Facile synthesized novel hybrid graphene oxide/cobalt ferrite magnetic nanoparticles based surface coating material inhibit bacterial secretion pathway for antibacterial effect** *MATERIALS SCIENCE AND ENGINEERING C-MATERIALS FOR BIOLOGICAL APPLICATIONS*
  Arun, T., Verma, S. K., Panda, P., Joseyphus, R., Jha, E., Akbari-Fakhrabadi, A., Sengupta, P., Ray, D. K., Benitha, V. S., Jeyasubramanyan, K., Satyam, P.
  2019; 104: 109932

- **Intrinsic molecular insights to enhancement of biogas production from kitchen refuse using alkaline-microwave pretreatment** *SCIENTIFIC REPORTS*
  Singh, P., Verma, S. K., Ojha, S., Panda, P., Srichandan, H., Jha, E., Mishra, S.
  2019; 9: 5968

- **Altered electrical properties with controlled copper doping in ZnO nanoparticles infers their cytotoxicity in macrophages by ROS induction and apoptosis** *CHEMICO-BIOLOGICAL INTERACTIONS*
  Das, B., Verma, S. K., Das, T., Panda, P., Parashar, K., Suar, M., Parashar, S. S.
  2019; 297: 141-154

- **Molecular insight to influential role of Hha-TomB toxin-antitoxin system for antibacterial activity of biogenic silver nanoparticles.** *Artificial cells, nanomedicine, and biotechnology*
  Paul, P., Verma, S., Kumar Panda, P., Jaiswal, S., Sahu, B. R., Suar, M.
  2018; 46 (sup3): S572-S584

- **Molecular insights to alkaline based bio-fabrication of silver nanoparticles for inverse cytotoxicity and enhanced antibacterial activity** *MATERIALS SCIENCE AND ENGINEERING C-MATERIALS FOR BIOLOGICAL APPLICATIONS*
  Verma, S. K., Jha, E., Panda, P., Thirumurugan, A., Patro, S., Parashar, S. S., Suar, M.
  2018; 92: 807-818

- **Molecular insight to in vitro biocompatibility of phytofabricated copper oxide nanoparticles with human embryonic kidney cells** *NANOMEDICINE*
  Kumari, P., Panda, P., Jha, E., Pramanik, N., Nisha, K., Kumari, K., Soni, N., Mallick, M., Verma, S. K.
  2018; 13 (19): 2415-2433

- **In Vivo Molecular Toxicity Profile of Dental Bioceramics in Embryonic Zebrafish (Danio rerio)** *CHEMICAL RESEARCH IN TOXICOLOGY*
  Makkar, H., Verma, S. K., Panda, P., Jha, E., Das, B., Mukherjee, K., Suar, M.
  2018; 31 (9): 914-923

- **Molecular aspect of silver nanoparticles regulated embryonic development in Zebrafish (Danio rerio) by Oct-4 expression** *CHEMOSPHERE*
  Sarkar, B., Verma, S. K., Akhtar, J., Netam, S., Gupta, S., Panda, P., Mukherjee, K.
  2018; 206: 560-567

- **Molecular insight to size and dose-dependent cellular toxicity exhibited by a green synthesized bioceramic nanohybrid with macrophages for dental applications** *TOXICOLOGY RESEARCH*

Makkar, H., Verma, S. K., Panda, P., Pramanik, N., Jha, E., Suar, M.
2018; 7 (5): 959-969

- **Structural discordance in HIV-1 Vpu from brain isolate alarms amyloid fibril forming behavior- a computational perspective.** *Journal of theoretical biology*
  Sneha, P., Panda, P. K., Gharemirshamlu, F. R., Bamdad, K., Balaji, S.
  2018; 451: 35-45
- **Identification of a new alanine racemase in Salmonella Enteritidis and its contribution to pathogenesis** *GUT PATHOGENS*
  Ray, S., Das, S., Panda, P., Suar, M.
  2018; 10: 30
- **Binding Patterns Associated Aβ-HSP60 p458 Conjugate to HLA-DR-DRB Allele of Human in Alzheimer's Disease: An In Silico Approach** *INTERDISCIPLINARY SCIENCES-COMPUTATIONAL LIFE SCIENCES*
  Padmadas, N., Panda, P., Durairaj, S.
  2018; 10 (1): 93-104
- **Mechanistic insight into ROS and neutral lipid alteration induced toxicity in the human model with fins (Danio rerio) by industrially synthesized titanium dioxide nanoparticles** *TOXICOLOGY RESEARCH*
  Verma, S. K., Jha, E., Panda, P., Mukherjee, M., Thirumurugan, A., Makkar, H., Das, B., Parashar, S. S., Suar, M.
  2018; 7 (2): 244-257
- **Molecular aspects of core-shell intrinsic defect induced enhanced antibacterial activity of ZnO nanocrystals.** *Nanomedicine (London, England)*
  Verma, S. K., Jha, E., Panda, P. K., Das, J. K., Thirumurugan, A., Suar, M., Parashar, S.
  2018; 13 (1): 43-68
- **Rapid Novel Facile Biosynthesized Silver Nanoparticles From Bacterial Release Induce Biogenicity and Concentration Dependent In Vivo Cytotoxicity With Embryonic Zebrafish-A Mechanistic Insight** *TOXICOLOGICAL SCIENCES*
  Verma, S. K., Jha, E., Panda, P., Mishra, A., Thirumurugan, A., Das, B., Parashar, S. S., Suar, M.
  2018; 161 (1): 125-138
- **Mechanistic Insight into Size-Dependent Enhanced Cytotoxicity of Industrial Antibacterial Titanium Oxide Nanoparticles on Colon Cells Because of Reactive Oxygen Species Quenching and Neutral Lipid Alteration** *ACS OMEGA*
  Verma, S. K., Jha, E., Panda, P., Thirumurugan, A., Parashar, S. S., Patro, S., Suar, M.
  2018; 3 (1): 1244-1262
- **Molecular investigation to RNA and protein based interaction induced in vivo biocompatibility of phytofabricated AuNP with embryonic zebrafish** *ARTIFICIAL CELLS NANOMEDICINE AND BIOTECHNOLOGY*
  Verma, S. K., Jha, E., Panda, P., Kumari, P., Pramanik, N., Kumari, S., Thirumurugan, A.
  2018; 46: S671-S684
- **Mechanistic insight to ROS and Apoptosis regulated cytotoxicity inferred by Green synthesized CuO nanoparticles from Calotropis gigantea to Embryonic Zebrafish** *SCIENTIFIC REPORTS*
  Kumari, P., Panda, P., Jha, E., Kumari, K., Nisha, K., Mallick, M., Verma, S. K.
  2017; 7: 16284
- **Altered physiochemical properties in industrially synthesized ZnO nanoparticles regulate oxidative stress; induce in vivo cytotoxicity in embryonic zebrafish by apoptosis** *SCIENTIFIC REPORTS*
  Verma, S. K., Panda, P., Jha, E., Suar, M., Parashar, S. S.
  2017; 7: 13909
- **Mechanistic insight into the rapid one-step facile biofabrication of antibacterial silver nanoparticles from bacterial release and their biogenicity and concentration-dependent in vitro cytotoxicity to colon cells** *RSC ADVANCES*
  Verma, S. K., Jha, E., Sahoo, B., Panda, P., Thirumurugan, A., Parashar, S. S., Suar, M.
  2017; 7 (64): 40034-40045
- **Genetics of PCOS: A systematic bioinformatics approach to unveil the proteins responsible for PCOS.** *Genomics data*
  Panda, P. K., Rane, R., Ravichandran, R., Singh, S., Panchal, H.
  2016; 8: 52-60

- **Mutation-based structural modification and dynamics study of amyloid beta peptide (1-42): An in-silico-based analysis to cognize the mechanism of aggregation.** *Genomics data*
  Panda, P. K., Patil, A. S., Patel, P., Panchal, H.
  2016; 7: 189-94