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- M.K. Shanmugam and **S.N. Gummadi** (2020) Degradation of synthetic coffee wastewater using induced cells of *Pseudomonas* sp. NCIM 5235, International Journal of Environmental Science and Technology (in press). Impact factor: 2.54
- S. Malla and **S.N. Gummadi** (2020) Simultaneous optimization of activity and stability of xylose reductase from *D. nepalensis* NCYC 3413 using statistical experimental design, Protein and Peptide Letters (in press). Impact factor: 1.168
- M.K. Shanmugam, S. Sriman and **S.N. Gummadi** (2020) Online measurement of dissolved oxygen in shake flask to elucidate its role on caffeine degradation, Indian Chemical Engineer,
- S.K. Palanirajan, G. Punitha and **S.N. Gummadi** (2020) Polystyrene adsorbents: Rapid and efficient surrogate to dialysis in membrane protein purification. Scientific reports, 10:16334. <https://doi.org/10.1038/s41598-020-73522-1> IF: 4.12
- S. Chakraborty, G. Suresh Kumar and **S. N. Gummadi** (2020) Influence of crucial reservoir properties and microbial kinetic parameters on enhanced oil recovery by microbial flooding under nonisothermal conditions: Mathematical modelling and numerical simulation. Journal of Petroleum Science and Engineering, 195, 107831. <https://doi.org/10.1016/j.petrol.2020.107831>. IF: 3.706
- K. Jagadeeshwar, V. Gayathri, Abhijit P. Deshpande and **S.N. Gummadi** (2020) Molecular association and gelling characteristics of curdlan. Current Science, 118: 1436-1442.
- S. Boddapati, Randhir Rai and **S. N. Gummadi** (2020) Structural analysis and antioxidative properties of mutan (water-insoluble glucan) and carboxymethyl mutan from *Streptococcus mutans*. Process Biochemistry, 97: 130-139. [Doi.org/10.1016/j.procbio.2020.07.006](https://doi.org/10.1016/j.procbio.2020.07.006). IF: 2.95
- S. Chakraborty, G. Suresh Kumar and **S. N. Gummadi** (2020) Numerical modeling on the influence of effective porosity, microbial kinetics and operational parameters on enhanced oil recovery by microbial flooding within sandstone formation. Society for Petroleum Engineering Journal, doi:10.2118/200639-MS. IF: 3.1
- A. Senthilkumar, Swati S. Dash, Kartik Mitra, M. Doble and **S.N. Gummadi** (2020) Potential of *Terminalia arjuna* as a promising phytoremediation against COVID19: DDPH Scavenging, Catalase Inhibition and Docking studies. ChemRxiv. doi.org/10.26434/chemrxiv.12600587.v1
- H. Muthukumar, M.K. Shanmugam and **S.N. Gummadi** (2020) Caffeine degradation in synthetic wastewater using silver ferrite nanoparticles fabricated via green route using

Amaranthus blitum leaf extract, Journal of Water Processing, 36, 101382. doi:10.1016/j.jwpe.2020.101382. IF:3.47

- H. Muthukumar, S.K. Palanirajan, M.K. Shanmugam and **S.N. Gummadi** (2020) Plant extract mediated synthesis enhanced the functional properties of silver ferrite nanoparticles over chemical synthesis, Biotechnology Reports, 26, e00469. doi: 10.1016/j.btre.2020e00469
- S. Malla and **S.N. Gummadi** (2020) Counteraction of osmolytes on pH induced unfolding of xylose reductase from *Debaryomyces nepalensis*, European Biophysics Journal, 49: 267-277. doi: 10.1007/s00249-020-01432-1. Impact factor: 2.527
- R. Radha and **S.N. Gummadi** (2020) Optimization of physical parameters pH and temperature for maximized activity and stability of *Vibrio cholera* L-asparaginase by statistical experimental design, Indian Chemical Engineer, 62: 1-10. doi:10.1080/00194506.2020.1758224.
- S.K. Palanirajan and **S.N. Gummadi** (2020) Heavy metals mediated phospholipids scrambling by human phospholipid scramblase 3: a probable role in mitochondrial apoptosis, Chemical Research in Toxicology, 33: 553-564. doi: 10.1021/acs.chemrestox.9b00406. Impact factor: 3.274
- M. Koyiloth and **S.N. Gummadi** (2020) Molecular cloning and biochemical characterization of the phospholipid scramblase SCRM-1 from *Caenorhabditis elegans*, European Biophysics Journal, 49: 163-173. <https://doi.org/10.1007/s00249-020-01423-2>. Impact factor: 2.527
- V. Nagaroor and **S.N. Gummadi** (2020) Biochemical characterization of an esterase from *Clostridium acetobutylicum* with novel GYSMG pentapeptide motif at the catalytic domain, Journal of Industrial Microbiology and Biotechnology, 47: 169-181. doi: 10.1007/s10295-019-02253-8. Impact factor: 2.993
- H. Muthukumar, S. Malla, M. Matheswaran and **S.N. Gummadi** (2020) Immobilization of xylose reductase enzyme on cysteine-functionalized *Murrayakoenigii* mediated magnetite nanoparticles, Materials Letters, 261, 127125. <https://doi.org/10.1016/j.matlet.2019.127125> Impact factor: 3.019
- R. Rai, **S.N. Gummadi** and D. Chand (2019) Cuprous Oxide or copper coated jute stick pieces at air-water interface for prevention of aerial contamination in potable water, ACS OMEGA, 4, 27, 22514-22520. doi: 10.1021/acs.omega.9b03184. Impact factor: 2.58
- J. Satya, Eswari, P. Sankar, **S.N. Gummadi**, T. Panda and Ch. Venkateswarlu (2019) Metabolic pathway analysis and dynamic macroscopic model development for lovastatin production by *Monascus purpureus* using metabolic foot printing concept, Biochemical Engineering Journal, 154: 107437. <https://doi.org/10.1016/j.bej.2019.107437>. Impact factor: 3.371

- Y. Deepthi, S.M. Shiva Nagendra and **S.N. Gummadi** (2019) Characterization and health risk assessment of indoor dust in biomass and LPG based households of rural Telangana, India, *Journal of Air and Waste Management Association*, 69,1438-145.<https://doi.org/10.1080/10962247.2019.166887>. Impact factor: 1.858
- R. Radha and **S.N Gummadi** (2019) pH-dependent thermal stability of *Vibrio cholerae* L-asparaginase, *Protein and Peptide Letters*,26(10):743-750.[doi: 10.2174/0929866526666190617092944](https://doi.org/10.2174/0929866526666190617092944). Impact factor: 1.168
- B. Sundaramoorthy and **S.N. Gummadi** (2019) Screening of new yeast *Pichia manchurica* for arabitol production, *Journal of Basic Microbiology*, 59:256-266.<https://doi.org/10.1002/jobm.201800366>. Impact factor:1.580
- H.A Antony, N.S.Topno, **S.N. Gummadi**, D. Siva Sankar, R. Krishna and S.C.Parija (2019) In silico modeling of *Plasmodium falciparum* chloroquine resistance transporter protein and biochemical studies suggest its key contribution to chloroquine resistance, *Acta Tropica*, **189**: 84-93.<https://doi.org/10.1016/j.actatropica.2018.10.001>. Impact factor:2.50.
- B. Paidimuddala, S.B. Mohapatra, **S.N. Gummadi** and N.Manoj (2018) Crystal structure of yeast xylose reductase in complex with a novel NADP-DTT adduct provides insights into substrate recognition and catalysis. *Federation of European Biochemical Societies Journal*, 285(23):4445-4464.[doi:10.1111/febs.14667](https://doi.org/10.1111/febs.14667). Impact factor: 4.530.
- Y. Deepthi, S.M. Shiva Nagendra and **S.N. Gummadi** (2018) Characteristics of indoor air pollution and estimation of respiratory dosage under varied fuel-type and kitchen-type in the rural areas of Telangana state in India, *Science of the Total Environment*,650(1):616-625.<https://doi.org/10.1016/j.scitotenv.2018.08.381>.**Impact** factor: 4.61
- S.Retnadhas and **S.N. Gummadi** (2018) Identification and characterization of oxidoreductase component (NdmD) of methylxanthine oxygenase system in *Pseudomonas* sp. NCIM 5235, *AppliedMicrobiologyandBiotechnology*, 102:7913–7926, [doi:10.1007/s00253-018-9224-x](https://doi.org/10.1007/s00253-018-9224-x) Impact factor: 3.420
- S.K. Palanirajan and **S.N. Gummadi** (2018) Rapid method for an enhanced recovery of biologically active human phospholipid scramblase 1 from inclusion bodies, *Analytical Biochemistry*, 556: 104-111. [doi:10.1016/j.ab.2018.06.028](https://doi.org/10.1016/j.ab.2018.06.028). Impact Factor:2.275.
- S.M. Pappu and **S.N. Gummadi**. (2018) Effect of cosubstrate on xylitol production by *Debaryomycesnepalensis* NCYC 3413: a cybernetic modelling approach, *Process Biochemistry*, 69:12-21. [doi:org/10.1016/j.procbio.2018.03.023](https://doi.org/10.1016/j.procbio.2018.03.023), Impact Factor: 2.616.
- S. Malla and **S.N. Gummadi** (2018) Thermal stability of xylose reductase from *Debaryomycesnepalensis* NCYC 3413: deactivation kinetics and structural studies, *Process Biochemistry* 67:71-79.<https://doi.org/10.1016/j.procbio.2018.01.010>. Impact factor: 2.616

- R. Radha, N. Arumugam and **S.N. Gummadi** (2018) Glutaminase free L-asparaginase from *Vibrio cholerae*: Heterologous expression, purification and biochemical characterization. *International Journal of Biological Macromolecules*, 111: 129-138.
- S.K.Palanirajan, U.Sivagnanam, S. Muruganand S.N. Gummadi (2017) In vitro reconstitution and biochemical characterization of human phospholipid scramblase 3: phospholipid specificity and metal ion binding studies. *Biological Chemistry*, 399(4):361-374.doi: 10.1515/hsz-2017-0309. Impact Factor:3.022.
- M.K Singh, S. Shivakumaraswamyand S.N. Gummadi and Manoj N (2017) Role of an N-terminal extension in stability and catalytic activity of a hyperthermostable α/β hydrolase fold esterase, *Protein Engineering, Design and Selection*, 30(8): 559–570.doi:10.1093/protein/gzx049. Impact factor: 1.881.
- S. Ayothiraman, **S.N. Gummadi** and T. Panda (2017) Comparison of the elution characteristics of individual forms of lovastatin in both isocratic and gradient modes and HPLC-PDA method development for pure and fermentation derived lovastatin, *Preparative Biochemistry and Biotechnology* 47(9):901-908.doi: 10.1080/10826068.2017.1365239. Impact factor: 1.241
- B.Paidimuddala, G.K. Aradhyam and **S.N. Gummadi** (2017) A halotolerant aldose reductase from *Debaryomycesnepalensis*: gene isolation, overexpression and biochemical characterization, *Royal Society of Chemistry Advances*, 7: 20384-20393. doi:10.1039/C7RA01697B. Impact Factor: 2.936.
- B.Paidimuddala, A.Rathod and **S.N.Gummadi** (2017) Inhibition of *Debaryomycesnepalensis*xylose reductase by lignocellulose derived by-products, *Biochemical Engineering Journal* 121: 73-82.https://doi.org/10.1016/j.bej.2017.01.019. Impact Factor:3.226.
- S.M. Pappu and **S.N. Gummadi** (2017) Artificial neural network and regression coupled genetic algorithm to optimize parameters for enhanced xylitol production by *Debaryomycesnepalensis* in bioreactor, *Biochemical Engineering Journal* 120: 136-145. https://doi.org/10.1016/j.bej.2017.01.010.Impact factor: 3.226.
- S.M. Pappu and **S.N. Gummadi** (2016) Modelling and simulation of xylitol production in bioreactor by *Debaromycesnepalensis* NCYC3413 using unstructured and artificial neural network models, *Bioresource Technology* 220: 490-499. doi:10.1016/j.biortech.2016.08.097. Impact factor: 5.807
- S.M. Pappu and **S.N. Gummadi** (2016) Multi response optimization for enhanced xylitol production by *Debaryomyces nepalensis* in bioreactor 6: 151.
- J.M. Vinnakota and **S.N. Gummadi** (2016) Snail represses the expression of human phospholipid scramblase 4 gene, *Gene* S0378-1119(16)30513-3.

- A.V. Nair, **S.N. Gummadi** and M. Doble (2016) Characterization and biological activities of cyclic (1 → 3, 1 → 6)-β-glucans from *Bradyrhizobium japonicum*, *Biotechnology Letters* (in press).
- A.V. Nair, **S.N. Gummadi** and M. Doble (2016) Process optimization and kinetic modelling of cyclic (1→3, 1→6)-β-glucans production from *Bradyrhizobium japonicum* MTCC120, *Journal of Biotechnology* 226:35-43.
- U. Sivagnanam, S.N. Murthy and **S.N. Gummadi** (2016) Identification and characterization of a novel nuclease activity of human phospholipid scramblase 1, *BMC Biochemistry* 17:10.
- P. Sivasankar, A.R. Kanna, G. S. Kumar and **S.N. Gummadi** (2016) Numerical modelling of biophysicochemical effects on multispecies reactive transport in porous media involving *Pseudomonas putida* for potential microbial enhanced oil recovery application, *Bioresource Technology* 211: 348-359.
- V. Poondla, S.K. Yannam, **S.N. Gummadi**, R. Subramanyam and V.S.O. Reddy (2016) Enhanced production of pectinase by *Saccharomyces cerevisiae* isolate using fruit and agro-industrial wastes: Its application in fruit and fiber processing, *Biocatalysis and Agricultural Biotechnology* 6: 40-50.
- J.M. Vinnakota and **S.N. Gummadi** (2016) Two c-Myc binding sites are crucial in upregulating the expression of human phospholipid scramblase 1 gene, *Biochemical and Biophysical Research Communication* 469: 412-417.