Research Papers

- Li H, Zhao W, Dai W, Long J, Watanabe M, Meier S*, Saravanamurugan S,* Yang S*, Riisager A (2018) Noble metal-free upgrading of multi-unsaturated biomass derivatives at room temperature: Silyl species enable reactivity. Green Chemistry 20, 5327-5335.
- Govind K. S, He J, Schill L. Yang S, Riisager A*, Saravanamurugan S,* (2018) Selective hydrodeoxygenation of alkyl lactates to alkyl propionates with Fe-based bimetallic supported catalysts. ChemSusChem 11 681-687.
- Li H, Riisager A, S. Saravanamurugan,* Pandey A, Sangwan R. S, Yang S*, Luque R* (2018) Carbon-increasing catalytic strategies for upgrading biomass into energy-intensive fuels and chemicals. ACS Catalysis, 8, 148-187.
- Li H, Gui Z, Yang S, Qi Z, Saravanamurugan S*, Riisager A* (2018) Catalytic tandem reaction for the production of jet/diesel fuel range alkanes by alkylation of 2-methyl furan and hydrodeoxygenation. Energy Technology 6, 1060-1066.
- Kumar, S., Nepak, D., Kansal, S. K., & Elumalai, S. (2018). Expeditious isomerization of glucose to fructose in aqueous media over sodium titanate nanotubes. RSC Advances, 8, 30106-30114.
- Kumar, S., Ahluwalia, V., Kundu, P., Sangwan, R. S., Kansal, S. K., Runge, T. M., & Elumalai, S. (2018). Improved levulinic acid production from agri-residue biomass in biphasic solvent system through synergistic catalytic effect of acid and products. Bioresource Technology, 251, 143-150.

- Kundu, P., Kumar, S., Ahluwalia, V., Kansal, S. K., & Elumalai, S. (2018). Extraction of arabinoxylan from corn cob through modified alkaline protocol to improve xylooligosaccharides synthesis. Bioresource Technology Reports, 3, 51-58.
- Ahluwalia, V., Elumalai, S., Kumar, V., Kumar, S., & Sangwan, R. S. (2018). Nano silver particle synthesis using Swertia paniculata herbal extract and its antimicrobial activity. Microbial pathogenesis, 114, 402-408.
- Rai SK, Narnoliya LK, Sangwan RS, Yadav SK* (2018) Self-assembled hybrid nanoflowers of manganese phosphate and L-arabinose isomerase, A stable and recyclable nanobiocatalyst for equilibrium level conversion of D-galactose to D-tagatose. *ACS Sustainable Chemistry and Engineering*. 6, 6296-6304.
- Jatav S, Pandey N, Dwivedi P, Bansal R, Ahluwalia V, Tiwari VK, Mishra BB* (2018) Isolation of a new flavonoid and waste to wealth recovery of 6-O-ascorbyl esters from seeds of Aegle marmelos (family- Rutaceae). *Natural Product Research*. 1-7.
- Kaushal G, Kumar J, Sangwan RS, Singh SP* (2018) Metagenomic analysis of geothermal water reservoir sites exploring carbohydrate-related thermozymes. *International Journal of Biological Macromolecules*. 119, 882-895.
- Mehta D, Prasad P, Sangwan RS, Yadav SK* (2018) Tomato processing byproduct valorization in bread and muffin, improvement in physicochemical properties and shelf-life stability. *Journal of Food Science and Technology*. 55, 2560-2568.
- Kauldhar BS, Yadav SK* (2018) Turning waste to wealth, A direct process for recovery of nano-silica and lignin from paddy straw agro-waste. *Journal of Cleaner Production*. 194, 158-166.
- Kumar V, Krishania M, Sandhu PS, Ahluwalia V, Gnansouno E, Sangwan RS* (2018) Efficient detoxification of corn cob hydrolysate with ion-exchange resins for enhanced xylitol production by *Candida tropicalis* MTCC 6192. *Bioresource Technology*. 251, 416-419.

- Ahluwalia V, Elumalai S, Kumar V, Kumar S, Sangwan RS* (2018) Nano silver particle synthesis using *Swertia paniculata*herbal extract and its antimicrobial activity. *Microbial Pathogenesis*. 114, 402-408
- Singh V, Kaul S, Singh P, Kumar V, Sandhir R, Chung HJ, Garag P, Singhal NK (2018) Xylanase immobilization on magnetite and magnetite core/shell nanocomposites using two different flexible alkyl length organophosphonates, Linker length and shell effect on enzyme catalytic activity. *International Journal of Biological Macromolecules*. 115, 590-599.
- Sharma A, Mandal T, and Goswami S* (2018) Cellulose nanofibers from rice straw, Process development for improved delignification and better crystallinity index. *Trends In Carbohydrate Research*. 9, 4
- Uday USP, Goswami S, Gopikrishna K, Bandyopadhyay TK, and Bhunia B (2018) Identification of markers at various stages of batch fermentation and improved production of xylanase using *Aspergillus niger* (KP874102. 1). *3 Biotech*. 8, 8-337.
- Lata K, Sharma M, Patel SN, Sangwan RS, Singh SP* (2018) An integrated bio-process for production of functional biomolecules utilizing raw and by-products from dairy and sugarcane industries. *Bioprocess and Biosystems Engineering*. 41, 1121-1131.
- Narnoliya LK, Sangwan RS, Singh SP* (2018) Transcriptome mining and in silico structural and functional analysis of ascorbic acid and tartaric acid biosynthesis pathway enzymes in rose-scanted geranium. *Molecular Biology Reports*. 45, 315-326.
- Patel SN, Singh V, Sharma M, Sangwan RS, Singhal NK, Singh SP* (2018) Development of a thermo-stable and recyclable magnetic nanaobiocatalyst for bioprocessing of fruit processing residues and Dallulose synthesis. *Bioresource Technology*. 247, 633-639.
- Dwivedi P, Singh M, Singh U, Jatav S, Sangwan RS, Mishra BB* (2018) Iodosylbenzene (PhIO) mediated synthesis of rose oxide from β-citronellol and its application for in situ rose oxide enrichment led valorization of citronella essential oil. *Journal of Cleaner Production*. 172, 1765-1771.
- Dwivedi P, Singh M, Singh U, Jatav S, Sangwan RS, Mishra BB* (2018) Iodosylbenzene (PhIO) mediated synthesis of rose oxide from β -citronellol and its application for in situ rose oxide enrichment led

- valorization of citronella essential oil. *Journal of Cleaner Production*. 172, 1765-1771.
- Kumar J, Gunapati S, Kianian SF, Singh SP* (2018) Comparative analysis of transcriptome in two wheat genotypes with contrasting levels of drought tolerance. *Protoplasma* 255, 1487-1504.
- Dwivedi P, Singh M, Sehra N, Pandey N, Sangwan RS, Mishra BB* (2018)
 Processing of wet Kinnow mandarin (*Citrus reticulata*) fruit waste into novel Brønsted acidic ionic liquids and their application in hydrolysis of sucrose. *Bioresource Technology*. 250, 621-624.
- Kirar S, Thakur NS, Laha JK, Bhaumik J, Banerjee UC* (2018) Development of gelatin nanoparticle-based biodegradable phototheranostic agents: advanced system to treat infectious diseases. *ACS Biomaterial Science and Engineering*. 4, 473-482.
- Dwivedee BP, Sharma M, Soni S, Bhaumik J, Laha JK, Banerjee UC* (2018) Promiscuity of lipase-catalyzed reactions for organic synthesis: a recent update. *ChemistrySelect (Wiley)*. 3, 2441-2466.
- Krishania M*, Kumar V, Sangwan RS (2018) Integrated approach for extraction of xylose, cellulose, lignin and silica from rice straw. *Bioresource Technology Reports*. 1, 89-93.

- Saravanamurugan S, Tosi I, Rassmussen K. H, Jensen R. E, Taarning E, Meier S* Riisager A* (2017) Facile and benign conversion of sucrose to fructose using zeolites with balanced Brønsted and Lewis Acidity. Catalysis Science & Technology 7, 2782-2788.
- Li H, Zhao W, Riisager A, Saravanamurugan S,* Wang Z, Fang Z*, Yang S* (2017) A Pd-Catalyzed in situ domino process for mild and quantitative production of 2,5-dimethylfuran directly from carbohydrates. Green Chemistry 19, 2101-2106.
- Li H, Yang S, Saravanamurugan S*, Riisager A* (2017) Glucose isomerization by enzymes and Chemo-catalysts: Status and current advances. ACS Catalysis 7, 3010-3029.

- Li H, Yang T, Riisager A, Saravanamurugan S*, Yang S* (2017) Chemoselective synthesis of dithioacetals from bio-aldehydes with zeolites under ambient and solvent-free conditions. ChemCatChem 9, 1097-1104.
- Agarwal, B., Kailasam, K., Sangwan, R. S., & Elumalai, S. (2017).
 Traversing the history of solid catalysts for heterogeneous synthesis of 5-hydroxymethylfurfural from carbohydrate sugars: a review.
 Renewable and Sustainable Energy Reviews.
- Singh U, Dwivedi P, Sangwan RS, Mishra BB* (2017) In situ Rose oxide Enrichment led Valorization of Citronella (*Cymbopogon winterianus*) Essential oil. *Industrial Crops and Products*. 97, 567-573.
- Purohit A, Rai SK, Chownk M, Sangwan RS, Yadav SK* (2017) Xylanase from *Acinetobacter pitti* MASK 25 (MTCC 25132) and developed magnetic-xylanase CLEA produce predominantly xylopentose and xylohexose from agro biomass. *Bioresource Technology*. 244,793-799.
- Manish and Yadav SK* (2017) Technological advances and applications of hydrolytic enzymes for valorization of lignocellulosic biomass. *Bioresource Technology.* 8524, 30720-30724.
- Prasad U, Shankar U, Bandyopadhyay TK, Goswami S, and Bhunia B (2017) Optimization of physical and morphological regime for improved cellulase free xylanase production by fed batch fermentation using *Aspergillus niger* (KP874102. 1) and its application in bio-bleaching." Bioengineered 8, no. 2, 137-146.
- Sharma M, Patel SN, Sangwan RS, Singh SP* (2017) Biotransformation of banana pseudo-stem extract into a functional juice containing value-added biomolecules of potential health benefits. *Indian Journal of Experimental Biology*. 55, 453-462.
- Narnoliya LK, Kaushal G, Singh SP*, Sangwan RS (2017) *De novo* transcriptome analysis of rose-scented geranium provides insights into the metabolic specificity of terpene and tartaric acid biosynthesis. *BMC Genomics*. 18, 74.
- Salwan R, Sharma V, Pal M, Kasana RC, Yadav SK, Gulati A (2017) Heterologous expression and structure-function relationship of low-temperature and alkaline active protease from Acinetobacter sp. IHB B

5011(MN12). International Journal of Biological Macromolecules. 107,567-574.

- Singla R, Soni S, Patial V, Kulurkar PM, Kumari A, Mahesh S., Padwad YS, Yadav SK* (2017) Cytocompatible Anti-mircobial Dressings of Syzygium cumini cellulose nanocrystals decorated with silver nanoparticles accelerate acute and diabetic wound healing. Scientific Reports. 7,10457.
- Singla R, Soni S, Patial V, Kulurkar PM, Kumari A, Mahesh S, Padwad YS, Yadav SK* (2017) In vivo diabetic wound healing potential of nanobiocomposites containing bamboo cellulose nanocrystals impregnated with silver nanoparticles. *International Journal of Biological Macromolecules*. 105,45-55.
- Singla R, Soni S, Padwad YS, Acharya A, Yadav SK* (2017) Sustained delivery of BSA/HSA from biocompatible plant cellulose nanocrystals for in vitro cholesterol release from endothelial cells. *International Journal of Biological Macromolecules*. 104, 748-757.
- Shanmugam V, Sharma V, Bharti P, Jyoti P, Yadav SK, Aggarwal A, Jain S (2017) RNAi induced silencing of pathogenicity genes of *Fusarium* spp. for vascular wilt management in tomato. *Annals of Microbiology*. 67,359-369.
- Joshi R, Rana A, Kumar V, Kumar D, Padwad YS, Yadav SK, Gulati A (2017) Anthocyanins enriched purple tea exhibits antioxidant, immunostimulatory and anticancer activities. *Journal of Food Science Technology*. 54,1953-1963.
- Kumar V, Yadav SK* (2017) Pyramiding of tea dihydroflavonol reductase and anthocyanidin reductase increases flavan-3-ols and improves protective ability under stress conditions in tobacco. *3 Biotech.* 7,177.
- Bharti P, Jyoti P, Kapoor P, Sharma V, Shanmugam V, Yadav SK* (2017) Host-induced Silencing of Pathogenicity Genes Enhances Resistance to *Fusarium oxysporum* Wilt in Tomato. *Molecular Biotechnology*. 59, 343-352.
- Singla R, Soni S, Kulurkar PM, Kumari A, Mahesh S, Patial V, Padwad YS, Yadav SK* (2017) In situ functionalized nanobiocomposites dressings of bamboo cellulose nanocrystals and silver nanoparticles for accelerated wound healing. *Carbohydrate Polymer*. 155,152-162.

- Singh U, Dwivedi P, Sangwan RS, Mishra BB* (2017) In situ rose oxide enrichment led valorization of citronella (*Cymbopogon winterianus*) essential oil. *Industrial Crops and Products*. 97, 567-573.
- Dwivedi P, Mishra KB, Mishra BB* VK Tiwari (2017) Click inspired synthesis of triazole-linked vanillin glycoconjugates, Glycoconjugate Journal. 34, 61-70.
- Mantouvalou I, Lachmann T, Singh SP, Vogel-Mikus K, Kanngiesser B (2017) Advanced absorption correction for 3D elemental images applied to the analysis of pearl millet seeds obtained with a laboratory confocal micro X-ray fluorescence spectrometer. *Analytical Chemistry* 89, 5453-5460.
- Jadaun JS, Sangwan NS, Narnoliya LK, Tripathi S, Sangwan RS* (2017) Withania coagulans tryptophan decarboxylase gene cloning, heterologous expression, and catalytic characteristics of the recombinant enzyme. *Protoplasma*. 254(1), pp.181-192.
- Jadaun JS, Sangwan NS, Narnoliya LK, Singh N, Bansal S, Mishra B, Sangwan RS* (2017) Over-expression of DXS gene enhances terpenoidal secondary metabolite accumulation in rose-scented geranium and *Withania somnifera*: active involvement of plastid isoprenogenic pathway in their biosynthesis. *Physiologia plantarum*. 159, 381-400.
- Thakur NS, Bhaumik J*, Kirar S, Banerjee UC* (2017) Development of gold-based phototheranostic nanoagents through bioinspired route and their applications in photodynamic therapy'. *ACS Sustainable Chemistry and Engineering*. 5, 7950-7960.
- Dwivedee BP, Bhaumik J*, Rai SK, Laha JK, Banerjee UC* (2017) Development of nanobiocatalysts employing statistical design as an optimization tool for efficient immobilization of biocatalysts. *Bioresource Technology*. 239, 464-471.

- Li H, Yang S, Riisager A, Pandey A, Sangwan R. S, Saravanamurugan S,* Luque R (2016) Zeolite and zeotype-catalysed transformation of biofuranic compounds,' Green Chemistry 18, 5701-5735.
- Li H, He J, Riisager A, Saravanamurugan S,* Song B, Yang S*, 'Acidbase bifunctional N-alkylphosphate nanohybrid for efficient hydrogen transfer of biomass-derived carboxides. ACS Catalysis 6, 7722-7727.

- Saravanamurugan S, Meier S, Taarning E, Riisager A (2016) Mechanism and stereoselectivity of zeolite-catalysed sugar isomerisation in alcohols. Chemical Communications 52, 12773-12779.
- Saravanamurugan S, Meier S, Taarning E, Riisager A (2016) Combined function of Brønsted and Lewis acidity in the zeolite-catalysed isomerisation of glucose to fructose in alcohols. Chem. Cat. Chem. 8, 3107-3111.
- Elumalai, S., Agarwal, B., Runge, T. M., & Sangwan, R. S. (2016). Integrated two-stage chemically processing of rice straw cellulose to butyl levulinate. Carbohydrate polymers, 150, 286-298.
- Elumalai, S., Agarwal, B., & Sangwan, R. S. (2016). Thermo-chemical pretreatment of rice straw for further processing for levulinic acid production. Bioresource technology, 218, 232-246.
- Mishra BB,* Kishore N, Tiwari VK (2016) A new antifungal Eudesmanolide Glycoside Isolated from *Sphaeranthus indicus* Linn. (Family-Compositae). *Natural Product Research*. 30, 2770-2776.
- Patel SN, Sharma M, Lata K, Singh U, Kumar V, Sangwan RS, Singh SP* (2016) Improved operational stability of D-psicose 3-epimerase by a novel protein engineering strategy, and D-psicose production from fruit and vegetable residues. *Bioresource Technology*. 216, 121-127.
- Kumar A, Chawla V, Sharma E, Mahajan P, Shankar R, Yadav SK* (2016) Comparative transcriptome analysis of chinary, assamica and cambod tea (*Camellia sinensis*) types during development and seasonal variation using RNA-seq technology. *Scientific Reports*. 17, 37244.
- Bhardwaj J, Gangwar I, Panzade G, Shankar R, Yadav SK* (2016) Global de novo protein-protein interactome elucidates interactions of drought-responsive proteins in Horsegram (*Macrotyloma uniflorum*). *Journal of Proteome Research*. 15,1794-1809.
- Pathak AK, Singh SP, Gupta Y, Gurjar AK, Mantri SS, Tuli R* (2016) Transcriptional changes during ovule development in two genotypes of litchi (*Litchi chinensis* Sonn.) with contrast in seed size. *Scientific Reports* 8, 36304.

- Patel SN, Sharma M, Lata K, Singh U, Kumar V, Sangwan RS, Singh SP* (2016) Improved operational stability of D-psicose 3-epimerase by a novel protein engineering strategy, and D-psicose production from fruit and vegetable residues. *Bioresource Technology*. 216,121-27.
- Sharma M, Patel SN, Lata K, Singh U, Krishania M, Sangwan RS, Singh SP* (2016) A novel approach of integrated bioprocessing of cane molasses for production of prebiotic and functional bioproducts. *Bioresource Technology*. 219, 311-318.
- Mishra S, Bansal S, Mishra B, Sangwan RS, Jadaun JS, Sangwan NS* (2016) RNAi and homologous over-expression based functional approaches reveal triterpenoid synthase gene-cycloartenol synthase is involved in downstream withanolide biosynthesis in *Withania somnifera*. *PLoS One*. 11, p.e0149691.

- Srivastava S, Sangwan RS, Tripathi S, Mishra B, Narnoliya LK, Misra LN, Sangwan NS* (2015) Light and auxin responsive cytochrome P450s from *Withania somnifera* Dunal: cloning, expression and molecular modelling of two pairs of homologue genes with differential regulation. *Protoplasma*. 252, 1421-1437.
- Kumari A, Kaur B, Srivastava R, Sangwan RS* (2015) Isolation and immobilization of alkaline protease on mesoporous silica and mesoporous ZSM-5 zeolite materials for improved catalytic properties. *Biochemistry and biophysics reports.* 2, 108-114.