



Department of Chemistry & Chemical Biology
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Publications

- “Four Component Selenoazaindolylolation-Alkoxylation of Styrenes for the Synthesis of Azaindolyl Alkoxyalkyl Selenoethers” Rajib Bera, Arup Bairagi, Arunava Sengupta, Sachchida Nand Pandey, Rintu Sk., **Somnath Yadav*** *Organic Letters*, 2025, DOI: [10.1021/acs.orglett.5c02278](https://doi.org/10.1021/acs.orglett.5c02278)
- “Cascade C–H-Alkenylation-Intramolecular Aminative Cyclization of Benzylsulfonamides for Synthesis of Isoindoline Cores” Arup Bairagi, Dr. Arunava Sengupta, Sohel Ali, Aditya Paul, **Somnath Yadav*** *Asian Journal of Organic Chemistry*, 2025, 11, Accepted Article. DOI: [10.1002/ajoc.202500379](https://doi.org/10.1002/ajoc.202500379)
- “Chemical synthesis of conjugation-ready tetrasaccharide repeating unit of *Escherichia coli* O50 O-antigen” Sunil K. Yadav, **Somnath Yadav*** *Carbohydrate Research*, 2025, Article no. 109485. DOI: [10.1016/j.carres.2025.109485](https://doi.org/10.1016/j.carres.2025.109485)
- “Step-wise and one-pot syntheses of the trisaccharide repeating unit of *Proteus penneri* 71 O-antigen” Tanmoy Halder, Sunil K. Yadav, **Somnath Yadav*** *Carbohydrate Research*, 2025, Article no. 109581. DOI: [10.1016/j.carres.2025.109581](https://doi.org/10.1016/j.carres.2025.109581)
- “Total synthesis of conjugation ready repeating unit of *Acinetobacter baumannii* strain K141 capsular polysaccharide via a [2 + 2] convergent approach” Sunil K. Yadav, **Somnath Yadav*** *Carbohydrate Research*, 2025, Article no. 109478. DOI: [10.1016/j.carres.2025.109478](https://doi.org/10.1016/j.carres.2025.109478)
- “Total Synthesis of the Repeating Unit of the O-antigen from *Proteus mirabilis* OC (CCUG 10702) Serogroup O75: Step-wise and One-pot Approaches” Sunil K. Yadav, **Somnath Yadav*** *European Journal of Organic Chemistry*, 2024, Article no. e202400718. DOI: [10.1002/ejoc.202400718](https://doi.org/10.1002/ejoc.202400718)
- “A sugar-derived ligand for room temperature aerial oxidation or non-aqueous Markovnikov hydration of styrenes using a preformed or in situ generated Co complex” Sachchida Nand Pandey, Arunava Sengupta, Rajib Bera, Sohel Ali and **Somnath Yadav*** *Catalysis Science & Technology*, 2024, 14, 4487-4495. DOI: [10.1039/D4CY00522H](https://doi.org/10.1039/D4CY00522H)
- “Understanding the gelation properties of fluorophenyl glycosides of arabinoside gelators: Experimental and theoretical studies” S. N. Pandey, N. P. Pathak, Arunava Sengupta* and **Somnath Yadav*** *Soft Matter*, 2024, DOI: [10.1039/D4SM00521J](https://doi.org/10.1039/D4SM00521J)



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- “Acetoxy group directed regioselective C2-alkenylation of indoles via Pd-Ag bimetallic catalysis” Aditya Paul, Arunava Sengupta, Bijan Sarkar and **Somnath Yadav*** *J. Org. Chem.* **2023**, 88, 14413-14422. [DOI: 10.1021/acs.joc.3c01442](https://doi.org/10.1021/acs.joc.3c01442).
- “Visible-Light Driven Acetoxylation and Dioxygenation of Indoles via Electron Donor-Acceptor Complexes” Aditya Paul, Arunava Sengupta and **Somnath Yadav*** *Chemical Communications*, **2023**, 59, 7455-7458. [DOI: 10.1039/D3CC01683H](https://doi.org/10.1039/D3CC01683H)
- “Organophotoredox catalyzed cross-dehydrogenative sulfonamidation of indoles and other heterocycles” Aditya Paul, Arunava Sengupta and **Somnath Yadav*** *J. Org. Chem.* **2023**, 88, 9599-9614. [DOI: 10.1021/acs.joc.2c02022](https://doi.org/10.1021/acs.joc.2c02022).
- “Chemical synthesis of the O-antigen repeating unit of *Actinobacillus actinomycetemcomitans* serotype f” Tanmoy Halder, Sunil K. Yadav and **Somnath Yadav*** *Carbohydrate Research*, **2023**, 534, 108977. [DOI: 10.1016/j.carres.2023.108977](https://doi.org/10.1016/j.carres.2023.108977)
- “Stereoselective synthesis of glycosyl azides from anomeric hydroxides via protecting group manipulations” Sourav Nayak and **Somnath Yadav*** *Carbohydrate Research*, **2023**, 523, Article No. 108739. [DOI: 10.1016/j.carres.2023.108739](https://doi.org/10.1016/j.carres.2023.108739)
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- “Visible light mediated synthesis of 3-sulfonylquinolines: Mechanistic insights into the photoredox catalysis” Aditya Paul, S. Banerjee and **Somnath Yadav***, *Asian Journal of Chemistry*, *Asian Journal of Organic Chemistry*, **2022**, 11, Article No. e202100629. [DOI: 10.1002/ajoc.202100629](https://doi.org/10.1002/ajoc.202100629)



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- “Total synthesis of the O-antigen repeating unit of *Providencia stuartii* O49 serotype through linear and one-pot assemblies” Tanmoy Halder and **Somnath Yadav***, *Beilstein Journal of Organic Chemistry*, **2021**, 17, 2915-2921. [DOI: 10.3762/bjoc.17.199](https://doi.org/10.3762/bjoc.17.199)
- “Short synthesis of molnupiravir (EIDD-2801) via a thionated uridine intermediate” Raghunath Dey, Sourav Nayak, Parthasarathi Das and **Somnath Yadav*** *ACS Omega*, **2021**, 6, 28366-28372. [DOI: 10.1021/acsomega.1c04550](https://doi.org/10.1021/acsomega.1c04550)
- “A gelator-starch blend for dry powder based instant solidification of crude oil at room temperature” Navendu P. Pathak, Rajkamal and **Somnath Yadav*** *Chemical Communications*, **2020**, 56, 2999-3002. [DOI: 10.1039/C9CC09943C](https://doi.org/10.1039/C9CC09943C)
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- “Direct Synthesis of 3-Arylquinolines by a Nano Pd-Catalyzed Regioselective C3-H Arylation of Quinolines” Abhijit Paul, Aditya Paul and **Somnath Yadav*** *Tetrahedron Letters*, **2020**, 51, 151364. [DOI: 10.1016/j.tetlet.2019.151364](https://doi.org/10.1016/j.tetlet.2019.151364)
- “Syntheses of Orthogonally Protected D-Galactosamine, D-Allosamine and D-Gulosamine Thioglycoside Building Blocks with N-phthalimido Groups” Debnath Chatterjee, Sourav Nayak, Abhijit Paul and **Somnath Yadav*** *Asian Journal of Organic Chemistry*, **2019**, 8, 2065-2072. [DOI: 10.1002/ajoc.201900397](https://doi.org/10.1002/ajoc.201900397).
- “Partially acetylated or benzoylated arabinose derivatives as structurally simple gelators: Effect of the ester protecting group on gel properties” Rajkamal, Navendu P. Pathak, Tanmoy, Halder, Shubhajit Dhara and **Somnath Yadav*** *Chemistry – A European Journal*, **2017**, 23, 11323-11329. [DOI: 10.1002/chem.201701669](https://doi.org/10.1002/chem.201701669)



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- “DAIB/TEMPO mediated synthesis of anomeric lactones from anomeric hydroxides” Debnath Chatterjee, Tanmoy Halder, Navendu P. Pathak, Abhijit Paul, Rajkamal and **Somnath Yadav*** *Tetrahedron Letters*, **2017**, 58, 1943-1946. DOI: [10.1016/j.tetlet.2017.04.019](https://doi.org/10.1016/j.tetlet.2017.04.019)
- “Arabinose based gelators: Rheological Characterization of the gels and phase selective organogelation of crude-oil” Rajkamal, Navendu P. Pathak, D. Chatterjee, A. Paul and **Somnath Yadav***, *RSC Advances*, **2016**, 6, 92225-92234. DOI: [10.1039/C6RA21109G](https://doi.org/10.1039/C6RA21109G)
- “Time resolved spectroscopic investigation to compare the photophysical properties of a short chain dyad when combined with silver and gold nanoparticles to form nanocomposite systems” G. Dutta (Pal), P. Chakraborty, **Somnath Yadav**, A. De. M. Bardhan, P. Kumbhakar, S. Biswas, H. S. DeSarkar, T. Ganguly*, *J. Nanoscience and Nanotechnology*, **2016**, 16, 7411-7419.
- “Photochemically synthesized palladium nanoparticles with catalytic activity at ppb levels for C-C coupling reactions” Abhijit Paul, Debnath Chatterjee, Rajkamal, Srirupa Banerjee and **Somnath Yadav*** *RSC Advances*, **2015**, 5, 71253-71258. DOI: [10.1039/C5RA14995A](https://doi.org/10.1039/C5RA14995A)
- “Cu(ClO₄)₂.6H₂O catalyzed solvent free per-O-acetylation and sequential one-pot conversions of sugars to thioglycosides” Debnath Chatterjee, Abhijit Paul, Rajkamal and **Somnath Yadav*** *RSC Advances*, **2015**, 5, 29669-29674. DOI: [10.1039/C5RA03461B](https://doi.org/10.1039/C5RA03461B)
- “Metal free visible light photoredox activation of PhI(OAc)₂ for the conversion of arylboronic acids to phenols” Abhijit Paul, Debnath Chatterjee, Rajkamal, Tanmoy Halder, Srirupa Banerjee and **Somnath Yadav*** *Tetrahedron Letters*, **2015**, 56, 2496-2499. DOI: [10.1016/j.tetlet.2015.03.107](https://doi.org/10.1016/j.tetlet.2015.03.107)
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- “Enantiomeric organogelators from D-/L- arabinose for phase selective gelation of crude oil and their gel as a photochemical micro reactor” Rajkamal, Debnath Chatterjee, Abhijit Paul, Srirupa Banerjee and **Somnath Yadav*** *Chemical Communications*, **2014**, 50, 12131-12134. DOI: [10.1039/C4CC05950F](https://doi.org/10.1039/C4CC05950F)



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- “Photoinduced Electron Transfer (PET) reactions of cis-dibenzoylalkenes with amines: An efficient reduction of the C=C bond” S. Banerjee, **S. Yadav**, S. Lahiri *Organic Letters*, **2009**, 11, 3494-3497. [DOI: 10.1021/ol901307v](https://doi.org/10.1021/ol901307v)
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- “Synthesis of bicyclo[3.2.1]octanones via ketyl radical promoted rearrangements under reductive PET conditions” **S. Yadav**, S. Banerjee, D. Maji, S. Lahiri *Tetrahedron*, **2007**, 63, 10979-10990. [DOI: 10.1016/j.tet.2007.08.054](https://doi.org/10.1016/j.tet.2007.08.054)
- “Importance of steric factors in face-selective cycloadditions: 1,6-annulated cyclohexa-1,3-dienes” S. Lahiri, **S. Yadav**, M. Chanda, I. Chakraborty, K. Chowdhury, M. Banerjee, A. Roy Choudhury, T. N. Guru Row *Tetrahedron Letters*, **2005**, 46, 8133-8136. [DOI: 10.1016/j.tetlet.2005.09.129](https://doi.org/10.1016/j.tetlet.2005.09.129)

Patents

- “A Process for the Preparation of Molnupiravir (EIDD-2801)” **Indian Patent Application No. 202131023578, 2021.**
- “Monosaccharide derived ligands and their metal complexes for the hydration and oxidation of 1-arylethenes, and a process for the manufacture thereof” **Indian Patent Application No. 202431016821, 2024.**
- “Process for the synthesis of novel organoselenium compounds” **Indian Patent Application No. 202531043581, 2025**

Lectures in Conferences/Seminars

- “Supramolecular gelators from arabinose” **CARBO XXXIII, Sweet ‘18 – Glycochemistry, Biology and Technology (SGBT ‘18)** Organized by IISER Kolkata & Association of Carbohydrates Chemists & Technologists of India (ACCTI), 19-21 December, 2018.