

Dr Jyotirmayee Dash

Senior Professor

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Degree	University/Board	Year of passing	Thesis topic/ Subjects studied
M.Sc.	Ravenshaw University, Odisha	1997	Organic Chemistry
Ph.D.	Indian Institute of Technology, Kanpur	2003	Organic Chemistry

Details of professional training and research experience

Institution, Place	Position	Advisor	Period
University of Bristol, UK	Visiting Fellow	Prof. Stephen Mann (FRS)	May-July 2010
University of Cambridge, UK	Marie-Curie Fellow	Professor Sir Shankar Balasubramanian (FRS)	2007-2009
ESPCI, Paris, France	Postdoctoral Fellow	Professor Janine Cossy	2006-2007
Freie University Berlin, Germany	Alexander von Humboldt Fellow	Natural product Synthesis Professor Hans-Ulrich Reissig	2004-2006

Professional recognition, awards, fellowships received

- Attended the prestigious 'At Home Reception' at Rashtrapati Bhavan on 75th Republic Day, 2024
- OPPI Scientist of the Year, 2023
- Prof. K. N. Ganesh Endowment Lecture, KNG Trust, 2023
- Featured in Vigyan Vidushi, 75 Women Trailblazers of Science, a Brochure on Indian Women Scientists by Vigyan Prasara, 2023
- Professor P K Bose Memorial Award Lecture, Indian Chemical Society, 2022
- Featured in the 75 under 50: Scientists Shaping Today's India, 2022
A compendium released by the Department of Science and Technology, Ministry of Science and Technology
- Fellow of the Indian Academy of Sciences (FASc), Bangalore, 2021
- Shanti Swarup Bhatnagar Prize, 2020
- Fellow of the Royal Society of Chemistry, FRSC, 2020
- CRSI Bronze Medal, 2020
- Awarded Wellcome Trust DBT Senior Fellowship for the year 2019.
- Second Charusita Chakravarty Memorial Lecture, February 2019, CRSI India
- Awarded SwarnaJayanti Fellowship for the year 2015-2016.

- Awarded Marie-Curie Fellowship; February 2007–January 2009; Advisor: Professor Sir Shankar Balasubramanian, FRS, University of Cambridge, UK.
- Awarded Alexander von Humboldt Fellowship; August 2004–January 2006; Advisor: Professor Hans-Ulrich Reissig, F. U. Berlin.

Editorial board:

- 1) Editorial Advisory Board Member of Journals: *ACS Bioconjugate Chemistry*, 2022; *ACS Omega*, 2021; *Asian JOC*, 2021; *Chemical Communications*, 2020
- 2) Sectional editor (*Organic and Biomolecular Chemistry*): **Journal of the Indian Chemical Society**

Other Recognition:

- 1) Selected for the 2021 edition of the Asian Scientist 100 list.
- 2) Listed in “50 Scientists under 50” as a part of the DST Golden Jubilee Celebrations Scheme.
- 3) Listed in Vigyan Vidushi- 75 women trailblazers of Science, by Vigyan Prasara.

Details of employment

- a) Assistant Professor, Indian Institute of Science Education and Research, Kolkata, February 2009-July 2012.
- b) Assistant Professor, Indian Association for Cultivation of Science, August 2012-July 2014
- c) Associate Professor, Indian Association for Cultivation of Science, August 2014-July 2018
- d) Professor, Indian Association for Cultivation of Science, August 2018-Sept 2021
- e) Senior Professor, Indian Association for Cultivation of Science, Since Sept 2021

Mentorship

Mentored 20 PhD Scholars, 10 Ongoing PhD Scholars
10 Postdoctoral researchers, 50 Masters Students

List of Publications

>135 publications; Total citations 4824, h-index = 43, i10-index 106

Reviews:

139) “Bioorthogonal Chemistry in Translational Research: Advances and Opportunities,” R. Chaudhuri, S. Bhattacharya, J. Dash*, *ChemBioChem*, 2023, 24, e20230047

138) "Nucleic Acids as Templates and Catalysts in Chemical Reactions: Target-guided Dynamic Combinatorial Chemistry and In situ Click Chemistry and DNA/RNA Induced Enantioselective Reactions," P. Saha, D. Panda, J. Dash*, *Chem. Soc. Rev.*, 2023, 52, 4248-4291.

137) Ring closing metathesis for the construction of carbazole and indole-fused natural products T. Mandal, **J. Dash***, *Organic & Biomolecular Chemistry*, 2021, 19, 9797-9808 (perspective).

136) “Binding Insights into Quadruplex Selective Carbazole Ligands” D Müller, P Saha, D. Panda, **J. Dash***, H Schwalbe*, *Chemistry–A European Journal*, 2021, 27, 12726-12736.

135) S. Bhattacharya, **J. Dash***, Nucleic acid secondary structures for therapeutic and biomolecular device applications." *Chemical Society Reporter*, **2021**.

134) R Chaudhuri, K Fatma, J Dash, "Regulation of gene expression by targeting DNA secondary structures." *J. Chem. Sci.* **2021**, 133, 1-17.

- 133) "Recent Update on Targeting c-MYC G-Quadruplexes by Small Molecules for Anticancer Therapeutics" R. Chaudhuri, S. Bhattacharya, **J. Dash***, S. Bhattacharya*, *J. Med. Chem.* **2021**, 64, 42–70. (perspective).
- 132) Chemical Regulation of DNA i-Motifs for Nanobiotechnology and Therapeutics" M. Debnath, K. Fatma, **J. Dash***, *Angew. Chem. Int. Ed.* **2019**, 57, 2942-2957.
- 131) "The application of click chemistry for targeting quadruplex nucleic acids" P. Saha, D. Panda, **J. Dash***, *Chem. Commun.* **2019**, 55, 731-750.
- 130) "Guanosine derived supramolecular hydrogels: Recent developments and future opportunities" T. Bhattacharyya, P. Saha, **J. Dash***, *ACS Omega*, **2018**, 3, 2230–2241.
- 129) "Functional architectures derived from guanine quartet" **J. Dash***, P. Saha, *Organic & Biomolecular Chemistry* **2016**, 14, 2157-2163.

Book Chapters

- 128) **J. Dash**, P. Saha, K. Fatma. "Click and combinatorial approaches to quadruplex ligand discovery." *Quadruplex Nucleic Acids as Targets for Medicinal Chemistry* Book Chapter, (2020): 287.
- 127) "Targeting G-quadruplex with small molecules: An NMR view" I. Bessi, J. Wirmer-Bartoschek, **J. Dash**, H. Schwalbe, *Modern Magnetic Resonance: 2nd edition*, **2017**, 1-22. doi:10.1007/978-3-319-28275-6_126-1.

Publications

- 126) "Self-assembled lipophilic guanosine derivatives modulate membrane transport across lipid bilayer," Y.P. Kumar, M. Debnath, T. Das, R. Paul, **J. Dash***, *Cell Rep. Phys. Sci.*, **2024** (under revision)
- 125) "Template-Directed in Situ Synthesis of an RNA Quadruplex-Binding Small Molecule to Regulate Nsp10 expression in SARS-CoV-2 Genome", R. Paul, D. Dutta, T. Bhattacharyya, R. Paul, **J. Dash***, *ACS Chem. Biol.* **2024** (under revision)
- 124) "Synthesis of triazole fused tetracyclic spirooxindole derivatives via metal-free Huisgen cycloaddition," S. Maiti, N. Parui, J. Halder, **J. Dash***, *ChemComm*, **2024**, (accepted).
- 123) "Synthesis of Phenanthrenes and 1-Hydroxyphenanthrenes via Aromatization-Assisted Ring-Closing Metathesis: Towards Polynuclear Aromatic Hydrocarbons," C. P. Roy, S. Karmakar, **J. Dash***, *J. Org. Chem.*, **2024**, 89, 15, 10511–10523.
- 122) "Transition-Metal Catalyzed Rapid Synthesis of Imidazo[2,1-b] thiazoles: Access to Aza-Fused Heterocycles via Aerobic Oxidative Coupling of 2-Aminothiazoles and Acetophenones," S. Basak, P. Paul, **J. Dash***, *Synthesis*, **2024**, DOI: 10.1055/a-2369-3893.
- 121) "A non-B DNA binding peptidomimetic channel alters cellular functions," R. Paul, D. Dutta, T. K. Mukhopadhyay, D. Müller, B. Lala, A. Datta, H. Schwalbe, **J. Dash***, *Nat. Commun.*, **2024**, 15, 5275.
- 120) "Efficient Synthesis of Cyclohepta[b]indoles and Cyclohepta[b]indole-Indoline Conjugates via RCM, Hydrogenation, and Acid-Catalyzed Ring Expansion: A Biomimetic Approach," N. Parui, T. Mandal, S. Maiti, **J. Dash***, *Chem. Eur. J.*, **2024**, 30, e202401059.
- 119) "Combating Multidrug-Resistance in *S. pneumoniae*: A G-quadruplex Binding Inhibitor of Efflux Pump and its Bio-Orthogonal Assembly," R. Chaudhuri, P. Thumapati, D. Biswas, S. Mandal, **J. Dash***, *NAR Mol. Med.*, **2024**, 1, ugae005.
- 118) "Guanosine-Based Hydrogel as a Supramolecular Scaffold for Template-Assisted Macrocyclization," B. Lala, R. Chaudhuri, T. Prasanth, I. Burkhardt, H. Schwalbe, **J. Dash***, *ChemComm*, **2024**, 60, 3433-3436.

- 117) "pH-Dependent Complex Formation with TAR RNA and DNA: Application Towards Logic Gates," R. Paul, R. Paul, D. Dutta, **J. Dash***, *Analyst*, **2024**, 149, 1976-1980.
- 116) "Selective Recognition of c-KIT 1 G-quadruplex by Structural Tuning of Heteroaromatic Scaffolds and Side Chains," K. Fatma, P. Thumpati, D. Panda, V. Ravichandiran, **J. Dash***, *ACS Med. Chem. Lett.*, **2024**, 15, 388–395.
- 115) "Total Synthesis of Racemic Benzomalvin E, a Quinazolinone Isolated from *Penicillium* sp. FN070315 and Exploration to the Direct Synthesis of (E)-Benzomalvin B," S. Basak, **J. Dash***, *J. Org. Chem.*, **2024**, 89, 3612-3617.
- 114) "Potassium tert-Butoxide Mediated Cascade Synthesis of Rutaecarpine Alkaloid Analogs: Access to Molecular Complexity on Multigram Scales," S. Basak, **J. Dash***, *J. Org. Chem.*, **2024**, 89, 233–244.
- 113) "KOtBu-Mediated Regioselective Hydroxymethylation of Thiazoles and Benzothiazoles: Synthesis of Biologically Active Heteroaromatic Compounds," S. Karmakar, D. Yadav, **J. Dash***, *Asian J. Org. Chem.* **2023**, 12, e2023003.
- 112) "Nucleoside Derived Metallo-hydrogel Induces Cell Death in *Leishmania* Parasites", S. Bhattacharya, T. Bhattacharyya, S. Khanra, R. Banerjee, Rahul; **J. Dash***, *ACS Infect. Dis.*, **2023**, 9, 1676–1684.
- 111) "Bisindole Enyne as a New Pharmacophore with Anticancer Properties," G. C. Midya, S. Mandal, **J. Dash***, *J. Indian Chem. Soc.*, **2023**, 100, 101028 (invited article).
- 110) "Rapid Access to Substituted Indenones via Grignard Reaction and its Application in the Synthesis of Fluorenones using Ring Closing Metathesis" N. Parui, T. Mandal, **J. Dash***, *Eur. J. Org. Chem.*, **2023**, 26, e202201285.
- 109) "Expanding the Toolbox of Target Directed Bio-Orthogonal Synthesis: In Situ Direct Macrocyclization by DNA Templates" R. Chaudhuri, P. Thumpati, **J. Dash***, *Angew. Chem. Int. Ed.* **2023**, 62, e202215245.
- 108) "Diastereoselective Reversible C-C Bond Exchange of Oxindole-Thiazolidinediones for Dynamic Combinatorial Chemistry" A. Gorai, G. Chakraborti, S. Basak, **J. Dash***, *Organic & Biomolecular Chemistry*, **2022**, 20, 9307-9312.
- 107) "Thiazole Containing PNA Mimic Regulates c-MYC Gene Expression through DNA G-quadruplex" A. Gorai, R. Chaudhuri, T. K. Mukhopadhyay, A. Datta, **J. Dash***, *Bioconjugate Chemistry* **2022**,
- 106) Cycloaddition of N-sulfonyl and N-sulfamoyl azides with alkynes in aqueous media for the selective synthesis of 1,2,3-triazoles, P. Thumpati, G. Chakraborti, T. Mandal, V. Ravichandiran, **J. Dash***, *Green Chemistry*, **2022**, 24, 911-915.
- 105). "Triazolyl Dibenzo[a,c]phenazines Stabilize Telomeric G-quadruplex and Inhibit Telomerase", S. Pal, K. Fatma, V. Ravichandiran, **J. Dash***, *Asian J. Org. Chem.* **2021**, 10, 2921-2926.
104. T. Bhattacharyya, D. Panda, J. Dash. "Supramolecular Template-Directed In Situ Click Chemistry: A Bioinspired Approach to Synthesize G-Quadruplex DNA Ligands." *Org. Lett.* **2021**, 23, 3004–3009.
- 104) "Studies Directed towards the Synthesis of Acridone Family of Natural Products: Total Synthesis of Acronycines and Atalaphyllidines" T. Mandal, S. Karmakar, A. Kapat, **J. Dash***, *ACS Omega*, **2021**, 6, 27062-27069.
- 103) "Potassium tert-Butoxide Promoted Synthesis of Dihydroquinazolinones", T. Ghosh, I. MANDAL, S. Basak, **J. Dash***, *J. Org. Chem.* **2021**, 86, 14695-14704.

102) A [3+2] Cycloaddition-1,2-Acyl Migration-Hydrolysis Cascade for Regioselective Synthesis of 1,2,3-Triazoles in Water, G. Chakraborti, T. Mandal, C. P. Roy, **J. Dash***, *Chemical Communications*, **2021**, 57, 7970-7973.

100) "Prolinamide plays a key role in promoting copper-catalyzed cycloaddition of azides and alkynes in aqueous media via unprecedented metallacycle intermediates." Gargi, R. Jana, T. Mandal, A. Datta, **J. Dash***, *Org. Chem. Frontiers* **2021**, 8, 2434-2441.

99) "A DNA nanosensor for monitoring ligand-induced i-motif formation." P. Saha, D. Panda, R. Paul, and **J. Dash***, *Org. & Biomol. Chem.* **2021**, 9, 1965-1969.

98) "Site-Selective Aerobic C–H Monoacylation of Carbazoles Using Palladium Catalysis." S. Maiti, T. Mandal, B. P. Dash, and **J. Dash***, *J. Org. Chem.* **2021**, 86, 1396–1407.

97) "Domino Relay Olefin Metathesis of Triallyl Oxindole and Indole Precursors to Access Cyclic Indoxyls and Carbazoles" T. Mandal, K. Dhar, N. Parui, **J. Dash***, *ChemCatChem*, **2020**, 12, 4754-4759.

96) "Carbon dot cross-linked gelatin nanocomposite hydrogel for pH-sensing and pH-responsive drug delivery" S. K Bhattacharyya, M Dule, R Paul, **J Dash***, M Anas, TK Mandal, P Das, *ACS Biomaterials Science & Engineering*, **2020**, 6 5662-5674.

95) In vivo experiments demonstrate the potent antileishmanial efficacy of repurposed suramin in visceral leishmaniasis, S. Khanra, S. Kumar Jain, J. J. Jawed, S. Ghosh, S. Dutta, S. A. Nabi, **J. Dash***, D. Dasgupta, S. Majumdar, R. Banerjee, *PLOS Neglected Tropical Diseases*, **2020**, 14, e0008575.

94) "Target Directed Azide-Alkyne Cycloaddition for Assembling HIV-1 TAR RNA Binding Ligands" R. Paul, D. Dutta, R. Paul, **J. Dash***, *Angew. Chem. Int. Ed.* **2020**,

93) "Reductive aromatization of oxindoles to 3-substituted indoles" T. Mandal, G. Chakraborti, **J. Dash***, *Tetrahedron Letters*, **2020**, 61, 152109.

92) "In situ Formation of Transcriptional Modulators using Non-canonical DNA i-Motifs" P. Saha, D. Panda, D. Müller, A. Maity, H. Schwalbe, **J. Dash***, *Chemical Science* **2020**, 11, 2058-2067.

91) "Ionophore constructed from non-covalent assembly of a G-quadruplex and liponucleoside transports K⁺-ion across biological membranes" M. Debnath, S. Chakraborty, Y. P. Kumar, R. Chaudhuri, B. Jana, **J. Dash***, *Nature Communications*, **2020**, 11, Article number: 469.

90) "Ring Closing Metathesis Approach for the Synthesis of o-Terphenyl Derivatives" S Karmakar, T Mandal, **J. Dash***, *European Journal of Organic Chemistry* 2019, 5916-5924.

89) "A G-quadruplex Specific Cell-Permeable Guanosine-Anthracene Conjugate Inhibits Telomere Elongation and Induces Apoptosis by Repressing c-MYC Gene" P. Saha, Y. P. Kumar, T. Das, D. Müller, I. Bessi, H. Schwalbe, **J. Dash***, *Bioconjugate Chemistry* **2019**, 30, 3038-3045.

88) "G-quadruplex Binding Small Molecule Induces Synthetic Lethality in Breast Cancer Cells by Inhibiting c-MYC and BCL2 Expression" R. Paul, T. Das, M. Debnath, A. Chauhan, **J. Dash***, *ChemBioChem*, **2019**.

87) "Domino Grignard Addition and Oxidation for the One-Pot Synthesis of C2-Quaternary 2-Hydroxyindoxyls" T. Mandal, G. Chakraborti, S. Maiti, **J. Dash***, *Organic letters*, **2019**, 21, 8044-8048.

86) "KOTBu-Promoted Transition-Metal-Free Transamidation of Primary and Tertiary Amides with Amines" T Ghosh, S Jana, **J. Dash***, *Organic letters*, **2019**, 21, 6690-6694.

85) "Cytidine-Derived Hydrogels with Tunable Antibacterial Activities" T Bhattacharyya, R Chaudhuri, KS Das, R Mondal, S Mandal, **J. Dash***, *ACS Applied Bio Materials*, **2019**, 2, 3171-3177

- 84) A Competitive Pull-down Assay Using G-quadruplex DNA Linked Magnetic Nanoparticles to Determine Specificity of G-quadruplex Ligands, D. Panda, P. Saha, R. Chaudhuri, P., Thumpati, Y. Ravichandiran, **J. Dash***, *Analytical Chemistry*, **2019** (accepted).
- 83) "Dynamic Generation of G-quadruplex DNA Ligands by Target-Guided Combinatorial Chemistry on a Magnetic Nano-platform" S.Jana, D. Panda, P. Saha, D. Pantos, **J. Dash***, *J. Med. Chem.* **2019**, 62, 762-773.
- 82) Microwave assisted cross-coupling reactions using palladium nanoparticles in aqueous media, K. Dhara, B. Parasar, A. J. Patil, **J. Dash***, *Synthetic Communications*, **2019**, 1-10. (IF: 1.38)
- 81) "Divergent and Orthogonal Approach to Carbazoles and Pyridoindoles from Oxindoles via Indole Intermediates" T. Mandal, G. Chakraborti, S. Karmakar, **J. Dash***, *Org. Lett.* **2018**, 20, 4759–4763.
- 80) "Small Molecule Driven Stabilization of Promoter G-quadruplexes and Transcriptional Regulation of c-MYC", T. Das, D. Panda, P. Saha, **J. Dash*** *Bioconjugate Chemistry* **2018**, 29, 2636.
- 79) "Cell Penetrating Thiazole Peptides Inhibit c-MYC Expression via Site-Specific Targeting of c-MYC G-quadruplex" D. Dutta, M. Debnath, D. Müller, R. Paul, T. Das, I. Bessi, H. Schwalbe, **J. Dash*** *Nucleic Acids Research* **2018**, 46, 5355-5365.
- 78) "In vitro screening of known drugs identified by scaffold hopping techniques shows promising leishmanicidal activity for suramin and netilmicin" S Khanra, YP Kumar, **J Dash**, R Banerjee, *BMC research notes* **2018**, 11, 319.
- 77) "Enzyme-regulated DNA-based logic device" M. Debnath, R. Paul, D. Panda, **J. Dash*** *ACS Synthetic Biology* **2018**, 7, 1456-1464
- 76) "Design and synthesis of novel polyamine collector to recover iron values from iron ore slimes" A. S. Patra, N. V. R. Nulakani, Y. P. Kumar, V. Subramanian, **J Dash**, A. K. Mukherjee, *Powder Technology*, **2018**, 325, 180-191.
- 75) "Human telomeric G-quadruplex selective fluoro-isoquinolines induce apoptosis in cancer cells" S. Maiti, P. Saha, T. Das, I. Bessi, H. Schwalbe, **J. Dash***, *Bioconjugate Chemistry*, **2018**, 29, 1141-1154.
- 74) "Self-assembly of a Guanosine Derivative to Form Nanostructures and Transmembrane Channels" R. N. Das, Y. P. Kumar, S. A. Kumar, O. M. Schütte, C. Steinem, **J. Dash*** *Chemistry-A European Journal*, **2018**, 24, 4002-4005.
- 73) "On Water" promoted Ullmann type C-N bond forming reactions: Application to carbazole alkaloids by selective N-arylation of aminophenols, G. Chakraborti, S. Paladhi, T. Mandal, **J. Dash***, *Journal of Organic Chemistry*, **2018**, 83, 7347-7359
- 72) "Supramolecular hydrogel inspired from DNA structures mimics peroxidase activity" T. Bhattacharyya, Y. P. Kumar, **J. Dash***, *ACS Biomaterials Science & Engineering*, **2017**, 3, 2358-2365.
- 71) "Preferential targeting of i-motifs and G-quadruplexes by small molecules", M. Debnath, S. Ghosh, A. Chauhan, R. Paul, K. Bhattacharyya, **J. Dash***, *Chemical Science* **2017**, 8, 7448-7456.

- 70) "Zinc-mediated efficient and selective reduction of carbonyl compounds", T. Mandal, S. Jana, **J. Dash***, *European Journal of Organic Chemistry*, **2017**, 4972-4983.
- 69) "Target guided synthesis using DNA nano-templates for selectively assembling a G-quadruplex binding *c-MYC* inhibitor", D. Panda, P. Saha, T. Das, **J. Dash***, *Nature communications*, **2017**, 8, 16103.
- 68) "Bipyridine facilitates regioselective dimerization of alkynes in the absence of transition metal", G. C. Midya, B. Parasar, S. Maiti, **J. Dash*** *ChemistrySelect*, **2017**, 2, 5032-5037.
- 67) "Amino acid derived naphthalenediimides as versatile G-quadruplex binders", D. M. Rasadean, B. Sheng, **J. Dash**, G. D. Pantos*, *Chemistry-A European Journal*, **2017**, 23, 8491-8499.
- 66) "Palladium-catalyzed pyridine-directed regioselective oxidative C–H acylation of carbazoles by using aldehydes as the acyl source", S. Maiti, L. Burgula, G. Chakraborti, **J. Dash***, *European Journal of Organic Chemistry*, **2017**, 332-340.
- 65) Chiral carbon dots derived from guanosine 5'-monophosphate form supramolecular hydrogels", A. Ghosh, B. Parasar, T. Bhattacharyya, **J. Dash***, *Chemical Communications* **2016**, 52, 11159-11162.
- 64) "Synthesis of magnetic nanoparticles and polymer supported imidazolidinone catalysts for enantioselective Friedel-Crafts Alkylation of Indoles", S. Pagoti, T. Ghosh, **J. Dash***, *ChemistrySelect*, **2016**, 1, 4386-4391.
- 63) "Synthesis of fluorescent binaphthyl amines that bind *c-MYC* G-quadruplex DNA and repress *c-MYC* expression," A. Chauhan, R. Paul, M. Debnath, I. Bessi, S. Mandal, H. Schwalbe, **J. Dash***, *Journal of Medicinal Chemistry*, **2016**, 59, 7275-7181.
- 62) "Transition metal-free terminal alkyne addition to isatins", K. Dhara, A. Kapat, T. Ghosh, **J. Dash***, *Synthesis*, **2016**, 48, 4260-4268.
- 61) "Small molecule regulated dynamic structural changes of human G-quadruplexes" M. Debnath, S. Ghosh, D. Panda, I. Bessi, H. Schwalbe, K. Bhattacharyya, **J. Dash***, *Chemical Science*, **2016**, 7, 3279-3285.
- 60) "Bis-triazolyl diguanosine derivatives as synthetic transmembrane ion channels" Y. P. Kumar, R. Nath Das, O. M. Schütte, C. Steinem*, **J. Dash***, *Nature Protocols*, **2016**, 11, 1039-1056
- 59) "Selective recognition of *c-MYC* G-quadruplex DNA using prolinamide derivatives" A. Chauhan, S. Paladhi, M. Debnath, **J. Dash***, *Organic & Biomolecular Chemistry*, **2016**, 14, 5761-5767. (Invited article for New Talent Themed Issue).
- 58) "Fluorescent dansyl-guanosine conjugates that bind *c-MYC* promoter G-quadruplex and downregulate *c-MYC* expression" Y. P. Kumar, P. Saha, D. Saha, I. Bessi, H. Schwalbe, S. Chowdhury, **J. Dash***, *ChemBioChem*. **2016**, 17, 388-393.
- 57) "Synthesis of carbazole alkaloids by ring-closing metathesis and ring rearrangement–aromatization", K. Dhara, T. Mandal, J. Das, **J. Dash*** *Angewandte Chemie International Edition*, **2015**, 54, 15831-15835.

56) "A nucleus-imaging probe that selectively stabilizes a minor conformation of *c-MYC* G-quadruplex and down-regulates *c-MYC* transcription in human cancer cells." D. Panda, M. Debnath, S. Mandal, I. Bessi, H. Schwalbe, **J. Dash***, *Scientific Reports*, **2015**, 5, 13183.

55) "A DNA-inspired synthetic ion channel based on G–C base pairing", R. N. Das, Y. P. Kumar, O. M. Schütte, C. Steinem,* **J. Dash***, *Journal of the American Chemical Society*, **2015**, 137, 34–37

54) "Transition-metal free hydration of nitriles using potassium *tert*-butoxide under anhydrous conditions" G. C. Midya, A. Kapat, S. Maiti, **J. Dash***, *Journal of Organic Chemistry*, **2015**, 80, 4148–4151. (

53) "C₃-Symmetric pyridine and bipyridine derivatives: Simple preparation by cyclocondensation and 2D self-assembly at a solution-graphite interface" **J. Dash**, D. Trawny, J. P. Rabe, H.-U. Reissig,* *Synlett*, **2015**, 26, 1486–1489.

52) "Environment-sensitive probes containing a 2,6-diethynylpyridine motif for fluorescence turn-on detection and induction of nanoarchitectures of human telomeric quadruplex" R. N. Das, M. Debnath, A. Gaurav, **J. Dash***, *Chemistry-A European Journal*, **2014**, 20, 16688–16693.

51) "Asymmetric aldol reaction of thiazole carbaldehydes: Regio and stereoselective synthesis of tubuvalin analogues" S. Paladhi, J. Das, M. Samanta, **J. Dash***, *Advanced Synthesis & Catalysis*, **2014**, 356, 3370–3376.

50) "A small molecule peptidomimetic that binds to *c-KIT1* G-quadruplex and exhibits antiproliferative properties in cancer cells" A. Chauhan, S. Paladhi, M. Debnath, S. Mandal, R. Nath Das, S. Bhowmick, **J. Dash***, *Bioorganic & Medicinal Chemistry*, **2014**, 22, 4422–4429.

49) "Triazole tailored guanosine dinucleosides as biomimetic ion channels to modulate transmembrane potential" Y. P. Kumar, R. Nath Das, S. Kumar, O. M. Schütte, C. Steinem,* **J. Dash*** *Chemistry-A European Journal*, **2014**, 20, 3023–3028.

48) "Thiazolidinedione-isatin conjugates via an uncatalyzed diastereoselective aldol reaction on-water" S. Paladhi, M. Bhati, D. Panda, **J. Dash***, *Journal of Organic Chemistry*, **2014**, 79, 1473–1480.

47) "Ligand mediated facile iron catalyzed dimerization of terminal aryl alkynes" G. C. Midya, B. Parasar, K. Dhara, **J. Dash***, *Organic & Biomolecular Chemistry*, **2014**, 12, 1812–1822.

46) "A magnetoclick imidazolidinone nanocatalyst for asymmetric 1,3-dipolar cycloaddition" S. Pagoti, D. Dutta, **J. Dash***, *Advanced Synthesis & Catalysis* **2013**, 355, 3532–3538.

45) A fluorescent guanosine dinucleoside as a selective switch-on sensor for c-myc G-quadruplex DNA with potent anticancer activities" Y. P. Kumar, S. Bhowmik, R. N. Das, I. Bessi, S. Paladhi, R. Ghosh, H. Schwalbe, **J. Dash***, *Chemistry-A European Journal*, **2013**, 19, 11502–11506. (appeared as inside cover page).

44) "Design and synthesis of an ON-OFF "click" fluorophore that executes a logic operation and detects heavy and transition metal ions in water and living Cell" G. C. Midya, S. Paladhi, S. Bhowmick, S. Saha, **J. Dash***, *Organic & Biomolecular Chemistry*, **2013**, 11, 3057–3063.

- 43) "pH Dependent multifunctional and multiply-configurable logic gate systems based on small molecule G-quadruplex DNA recognition" S. Bhowmik, R. N. Das, B. Parasar, **J. Dash*** *Chemical Communications*, **2013**, 49, 1817-1819.
- 42) "Reduction of organic azides to amines using reusable Fe₃O₄ nanoparticles in aqueous medium" S. Pagoti, S. Surana, A. Chauhan, B. Parasar, **J. Dash***, *Catalysis Science & Technology*, **2013**, 3, 584-588.
- 41) "Multifunctional "click" prolinamides: A new platform for asymmetric Aldol reaction in the presence of water with catalyst recycling" S. Paladhi, J. Das, P. K. Mishra, **J. Dash***, *Advanced Synthesis & Catalysis*, **2013**, 355, 274-280.
- 40) "An Uncatalyzed Aldol Reaction of Thiazolidinediones" S. Paladhi, A. Chauhan, K. Dhara, A. K. Tiwari, **J. Dash***, *Green Chemistry*, **2012**, 14, 2990-2995.
- 39) "A diversity oriented approach to spirocyclic and fused hydantoins via olefin metathesis" K. Dhara, G. C. Midya, **J. Dash***, *Journal of Organic Chemistry*, **2012**, 77, 8071-8082.
- 38) "Diffusion and Birefringence of Bioactive Dyes in a Guanosine Supramolecular Hydrogel" R. N. Das, Y. P. Kumar, S. Pagoti, A. J. Patil, **J. Dash***, *Chemistry-A European Journal*, **2012**, 18, 6008-6014.
- 37) "Synthesis of Bis-indole Carboxamides as G-quadruplex Stabilizing and Inducing Ligands" **J. Dash***, R. N. Das, N. Hegde, G. D. Pantos, P. S. Shirude, S. Balasubramanian,* *Chemistry-A European Journal*, **2012**, 18, 554-564.
- 36) "Catalysis-based enantioselective total synthesis of myxothiazole Z, (14S)- melithiazole G and (14S) cystothiazole" A. Colon, T. J. Hoffman, J. Gebauer, **J. Dash**, J. H. Rigby, S. Arseniyadis, J. Cossy, *Chemical Communications*, **2012**, 48, 10508-10510.
- 35) "A supported palladium nanocatalyst for copper free acyl Sonogashira reactions: One-pot multicomponent synthesis of N-containing heterocycles" S. Santra, K. Dhara, P. Ranjan, P. Bera, **J. Dash***, S. Mandal,* *Green Chemistry*, **2011**, 14, 3238-3247.
- 34) "Modulation of small molecule induced architecture of cyclodextrin aggregation by guest structure and host size" P. Ghosh, A. Maity, T. Das, **J. Dash***, P. Purkayastha,* *J. Phys. Chem. C*, **2011**, 115, 20970-20977.
- 33) "Interaction of a new surface sensitive probe compound with anionic surfactants of varying hydrophobic chain length" A. Maity, P. Ghosh, T. Das, **J. Dash***, P. Purkayastha,* *J. Colloids Interface Sci.* **2011**, 364, 395-399.
- 32) "Supramolecular hydrogels derived from silver ion-mediated self-assembly of 5'-guanosine monophosphate" **J. Dash**, A. J. Patil, R. N. Das, F. L. Dowdall, S. Mann,* *Soft Matter*, **2011**, 7, 8120-8126.
- 31) "Iron catalyzed highly regioselective dimerization of terminal aryl alkynes" G. C. Midya, S. Paladhi, K. Dhara, **J. Dash***, *Chemical Communications*, **2011**, 47, 6698-6700.
- 30) "Synthesis of spirocyclic thiazolidinedione derivatives using ring-closing metathesis and one pot sequential ring-closing/cross metathesis" K. Dhara, S. Paladhi, G. C. Midya, **J. Dash***, *Organic & Biomolecular Chemistry*, **2011**, 9, 3801-3807.

- 29) "Synthesis and binding studies of novel diethynyl-pyridine amides with genomic promoter DNA G-quadruplexes" **J. Dash**,* Z. A. E. Waller, G. Dan Pantos, S. Balasubramanian,* *Chemistry-A European Journal*, **2011**, *17*, 4571-4581.
- 28) "G-quadruplex-binding benzo[a]phenoxazines down-regulate c-KIT expression in human gastric carcinoma cells" K. I. E. McLuckie, Z. A. E. Waller, D. A. Sanders, D. Alves, R. Rodriguez, **J. Dash**, G. J. McKenzie, A. R. Venkitaraman, S. Balasubramanian,* *Journal of the American Chemical Society*, **2011**, *133*, 2658-2663.
- 27) "A concise approach towards the synthesis of WS75624 A and WS75624 B via the cross-metathesis of vinyl-functionalized thiazoles" **J. Dash**, B. Melillo, S. Arseniyadis, J. Cossy,* *Tetrahedron Letters*, **2011**, *52*, 2246-2249.
- 26) "A three-component synthesis of β -alkoxy β -keto-enamides—flexible precursors for 4-hydroxypyridine derivatives and their palladium-catalysed reactions"; T. Lechel, **J. Dash**, C. Eidamshausa, I. Brüdgam, D. Lentza, H.-U. Reissig,* *Organic & Biomolecular Chemistry*, **2010**, *8*, 3007-3014.
- 25) "Three-component synthesis of perfluoroalkyl- or perfluoroaryl-substituted 4-hydroxypyridine derivatives and their palladium-catalyzed coupling reactions" T. Lechel, **J. Dash**, P. Hommes, D. Lentz, H.-U. Reissig,* *Journal of Organic Chemistry* **2010**, *75*, 726-732.
- 24) "A new and flexible synthesis of 4-hydroxypyridines: Rapid access to Caerulomycins A, E and functionalized terpyridines" **J. Dash**, H.-U. Reissig,* *Chemistry-A European Journal* **2009**, *15*, 6811-6814.
- 23) "Enantioselective organocatalytic conjugate reduction of β -azole α,β -unsaturated aldehydes" T. J. Hoffman, **J. Dash**, J. H. Rigby, S. Arseniyadis, J. Cossy,* *Organic letters*, **2009**, *11*, 2756-2759.
- 22) "Diarylethynyl amides that recognize the parallel conformation of genomic promoter DNA G-quadruplexes" **J. Dash**, P.S. Shirude, S.-T.D. Hsu, S. Balasubramanian,* *Journal of the American Chemical Society* **2008**, *130*, 15950-15956.
- 21) "G-Quadruplex recognition by bis-indole carboxamides" **J. Dash**, P.S. Shirude, S. Balasubramanian,* *Chemical Communications*, **2008**, 3055-3057.
- 20) "Novel furopyridine derivatives via Sonogashira reactions of functionalized pyridines" T. Lechel, **J. Dash**, I. Brüdgam, H.-U. Reissig,* *European Journal of Organic Chemistry*, **2008**, *21*, 3647-3655.
- 19) "Crystal structure of 1,4-bis[3-methoxy-4-(4-methoxyphenyl)-6-(trifluoromethyl)pyridin-2-yl]benzene, C₃₄H₂₆F₆N₂O₄" **J. Dash**, I. Brüdgam, H. Hartl, H.-U. Reissig,* *Z. Kristallogr. NCS* **2008**, *223*, 347-348.
- 18) "Synthesis of vinyl-functionalized thiazoles by cross-metathesis and tandem Stille coupling/cross-metathesis" **J. Dash**, S. Arseniyadis, J. Cossy,* *Advanced Synthesis & Catalysis*, **2007**, *349*, 152-156.
- 17) "Scope of a novel three-component synthesis of highly functionalized pyridines" **J. Dash**, T. Lechel, H.-U. Reissig,* *Organic Letters*, **2007**, *9*, 5541-5544.
- 16) "Concise synthesis of novel oxa-bridged compounds" F. A. Khan,* **J. Dash**, Ch. Sudheer, N. Sahu, P. Karuppasamy, *Journal of Organic Chemistry*, **2005**, *70*, 7565-7577.

- 15) "A new color of the synthetic chameleon methoxyallene: A novel synthesis of trifluoromethyl-substituted pyridinol derivatives—an unusual reaction mechanism, a remarkable crystal packing and first palladium-catalyzed coupling reactions" O. Flögel, **J. Dash**, I. Brüdgam, H. Hartl, H.-U. Reissig,* *Chemistry-A European Journal*, **2004**, 10, 4283–4290.
- 14) "Hydrotalcite catalysis in ionic liquid medium: A recyclable reaction system for heterogeneous Knoevenagel and nitroaldol condensation" F.A. Khan,* **J. Dash**, R. Satapathy, S. K. Upadhyay, *Tetrahedron Letters*, **2004**, 45, 3055–3058.
- 13) "Indium-mediated regio- and diastereoselective reduction of norbornyl α -diketones" F. A. Khan, **J. Dash**, Ch. Sudheer, *Chemistry-A European Journal* **2004**, 10, 2507–2519.
- 12) "Diastereoselection during allylindium addition to norbornyl α -diketones" F. A. Khan,* **J. Dash**, *European Journal of Organic Chemistry* **2004**, 12, 2692–2700.
- 11) "A rapid and stereoselective route to trans-hydrindane ring system" F. A. Khan,* R. Satapathy, **J. Dash**, G. Savitha, *Journal of Organic Chemistry* **2004**, 69, 5295–5301.
- 10) "A short and stereoselective synthesis of functionalized pentenomycin derivatives" F.A. Khan,* **J. Dash**, B. Rout, *Tetrahedron Letters*, **2004**, 45, 9285–9288.
- 9) "A novel and expeditious approach to unusual spiro lactam building blocks" F. A. Khan,* **J. Dash**, *Journal of Organic Chemistry*, **2003**, 68, 4556–4559.
- 8) "Chemoselective reduction of aromatic nitro compounds in ionic liquids using zinc and ammonium salts; F. A. Khan,* **J. Dash**, Ch. Sudheer, R. K. Gupta, *Tetrahedron Letters*, **2003**, 44, 7783–7789.
- 7) An easy access to γ -lactone-fused cyclopentanoids; F. A. Khan,* **J. Dash**, N. Sahu, Ch. Sudheer, *Journal of Organic Chemistry*, **2002**, 67, 3783–3787.
- 6) Regio- and diastereoselective reduction of non-enolizable α -diketones to acyloins mediated by indium metal; F. A. Khan,* **J. Dash**, N. Sahu, S. Gupta, *Organic Letters*, **2002**, 4, 1015–1018.
- 5) Synthesis of a novel, highly symmetric bis-oxa-bridged compound; F.A. Khan,* **J. Dash**, *Journal of the American Chemical Society* **2002**, 124, 2424–2425.
- 4) Synthesis of novel caged bis-hemiacetals and their facile conversion to symmetric bis- α -halo- γ -lactones; F. A. Khan,* N. Sahu, **J. Dash**, and B. Prabhudas, *Journal of the Indian Institute of Sciences* **2001**, 81, 325–331.
- 3) Rearrangement of 1,4,5,6-tetrahalo-7,7-dimethoxybicyclo[2.2.1]hept-5-ene-2-one to phenolic derivatives; F. A. Khan,* **J. Dash**, D. Jain, and B. Prabhudas, *J. Chem. Soc., Perkin Trans. 1*, **2001**, 3132–3134.
- 2) "1,2,3,4-tetrachloro-5,5-dimethoxy-cyclopenta-1,3-diene: Diels-Alder reactions and applications of the products formed" F. A. Khan,* B. Prabhudas, **J. Dash**, *Advanced Synthesis & Catalysis* **2001**, 342, 512–517.

1) A ruthenium catalyzed, novel and facile procedure for the conversion of vicinal dihaloalkenes to α -diketones; F. A. Khan,* B. Prabhudas, **J. Dash**, N. Sahu, *Journal of the American Chemical Society* **2000**, 122, 9558–9559.

List of patents:

- 9) 'Ultra-small drug nano-conjugates (MTC-AUNPS) and process of its synthesis' J. Dash, D. Panda, P. Saha, S. Jana, T. Das, Indian Patent Application No. 202231064387 dated 10.11.2022 in India Our Ref: PP-3692/IACS (SRC)
- 8) 'Coumarin conjugated thiazole peptide that binds to SARS-CoV-2 RNA G-quadruplex' J. Dash, R. Paul, D. Dutta, T. Bhattacharyya, R. Paul, Indian Patent Application No. 202231052854 in India Our Ref: PP-3685/IACS (DJB)
- 7) Diaguanosine derivatives as synthetic membrane channels for drug delivery applications, Applied for patent. T.I(05)/TIFA/2019. Patent no. 408183 J. Dash, Y. P. Kumar, M. Debnath, T. Das, R. Paul.
- 6) Nucleoside hydrogels with antibacterial properties, Applied for patent, T.I (04)/TIFA/2019.
- 5) "Compounds, preparation of compounds and application thereof" D. Nag,, P. S. Dash, S. GHORAI, J. Dash, S. Karmakar, IN Patent Application No. 201731039496; dated: November 06, 2017; International PCT Application No. PCT/IB2018/05866 (Jointly with Tata Steel) **2019**.
- 4) "Peptidomimetic ligands regulate BCL-2 expression by stabilizing DNA secondary structures" J. Dash*, M. Debnath, A Chauhan, R. Paul, Indian Patent Application No. 2017/31028836 dated 14-08-2017. Patent no. 370710
- 3) "A guanidine-based reagent and method of its synthesis for enhanced iron ore-gangue separation" P. Baskar, A. S. Patra, A. K. Mukherjee, J. Dash, Y. P. Kumar, Patent application no. 336/KOL/2015 of 26.3.2015 (Jointly with Tata Steel).
- 2) "Anticancer activities of a heterocyclic molecule that selectively stabilizes G-quadruplex DNA" J. Dash*, D. Panda, M. Debnath, S. Mandal, Indian Patent, Patent application no. 1136/2014 dated 5th November 2014.' Patent No. 362703
- 1) Substituted 4-hydroxypyridine, H.-U. Reissig, J. Dash, WO Patent 2,008,074,474.

Selected Lectures Delivered

Delivered several online and offline seminars, popular talks and attended conferences

1) *Poster presentation at 1st Commonwealth Chemistry Congress, August 2020.*

2) *Poster and Flash talk presentation, Commonwealth Chemistry Congress, May 2021 on Nucleic Acid Secondary Structures for Therapeutics and Bio-inspired Devices*

Delivered online talks on 1) 18) NCNST 2021, IIMT Bhubaneswar, 10 August 2021, 5th November 2020, CRSI Darjeeling Chapter; 2) 6th November 2020, CRSI Kolkata Chapter; 3) 7th November 2020; CSIR popular talk; 4) 23rd November: Popular talk in Odisha; 5) 25th November 2020; TIFR colloquium; 6) 26th November 2020; JNCASR annual meeting; 7) AMU Centenary Webinar on "Prospects of STEM Education in 21st century and contribution of women scientists in STEM", AMU-OSU, on 13th-14th Oct 2020; 8) Odisha Chemical Society on 19th January, 9) School of Chemical Science conference at IACS Kolkata on 16th January; 10) 4th December: IISF Curtain Raiser at ILS Bhubneswar; 11) 5th December, IISF Curtain Raiser at IACS Kolkata; 12) 14th December; IISER Pune 13) 22nd December, CLRI-CSIR; 14) RTCS-OBC Symposium of Indian Chemical Society (ICS) on 27-28 December 2020; 15) March 24, 2021, Fifth Lecture Workshop (Online) on Trans-disciplinary Areas of Research and Teaching by Shanti Swarup Bhatnagar Awardees; Deen Dayal Upadhyaya College, University of Delhi

Notable talks:

- 18) 59th Annual Convention of Chemists and International Conference on Recent Trends in Chemical Sciences, 17th December 2022, Department of Chemistry & Chemical Biology, IIT (ISM) Dhanbad, Professor P K Bose Memorial Award Lecture.
- 19) Mid-year meeting of the Indian Academy of Science, Bangalore 8-9 July 2022
- 18) Department of Chemistry, St. Xavier's College, Kolkata, 16th August 2022
- 17) 27th CRSI-NSC meeting, September 26-30, 2021, IISER Kolkata
- 16) XXI NOST-OCC conference, Chennai, 25-28 November, 2021.
- 15) Prof. Asima Chatterjee Scientific Special Session' in ACC-2021, 21 December 2021
- 14) Laying the Foundation for a Career in Research India Alliance 19th January 2022
- 13) Departmental talk, Indian Institute of Science Education & Research (IISER) Tirupati, 4th February 2022, IISER Kolkata
- 12) "Dynamic Template-assisted Synthesis of ligands for DNA Secondary Structures" Chemical Sciences: Today and Tomorrow, organized by the Department of Chemistry, Jadavpur University, Kolkata, 14th March 2019.
- 11) Second Charusita Chakravarty Memorial Lecture, 24th CRSI, Chennai, 8-10th February, 2019.
- 10) Women Scientists and Entrepreneurs: Contributing towards transforming India, Ministry of Sciences, MARS Auditorium, Indira Gandhi Pratisthan, Lucknow, 07th October 2018
- 9) "Self-Assembly of Nucleobases in Biomimetic Materials and Biological Systems", Indo German Conference, Institute of Nano Science and Technology, Indo German Meeting IGM-2018 conference, 4th October 2018.
- 8) Symposium on Life and Works of Professor Asima Chatterjee: A Centenary Tribute, Scottish Church College, Kolkata in collaboration with The Royal Society of Chemistry, Eastern India, 29th August 2018.
- 7) "Four stranded DNA Targets to synthesize their own selective ligands": 23rd CRSI National Symposium in Chemistry (CRSI-NSC-23)" IISER Bhopal, 13-15 July, 2018.
- 6) "Regulation of Gene Expression by Targeting DNA Secondary Structures", 37th Annual Conference of the Indian Association for Cancer Research (IACR), "From Cancer Biology to Precision Oncology: Challenges And Considerations." Bose Institute, Kolkata-700045 on February 23 to 25, 2018.
- 5) "Target Guided Synthesis of Selective Ligands for DNA Secondary Structures", International Conference in Chemistry, IISER Tirupati; 24-26 May, 2018
- 4) "Target Guided Synthesis of Selective Ligands for DNA Secondary Structures" "International Conference on Chemistry for Human Development (ICCHD-2018)", Heritage Institute of Technology, Kolkata (HITK), January 8-10, 2018.
- 3) "DNA Guided Synthesis of Ligands for Gene Regulation" Symposium on Chemical Biology and Drug Discovery (SCBDD-2017), Bose Institute, Kolkata-700045 on October 30-31, 2017.
- 2) "Small molecules for preferential targeting of DNA structures" RSC-NOST Symposium on Organic & Biomolecular Chemistry, Leeds Beckett University, UK, 03/10/2017 to 06/10/2017.
- 1) "Small Molecule Regulators of G-quadruplex DNA" Annual Meeting of Indian Biophysical Society: Molecules in living cells: Mechanistic basis of function, Indian Institute of Science, Bangalore, 8-10 February, 2016.

Particulars of the projects as a Principal Investigator

S. No.	Title	Received amount (Rs.)	Duration	Agency
1	Design and Construction of Nucleic Acid Based Transmembrane Nanopores	80 lakhs	2022-2025 (ongoing)	DST-SERB (CRG)
2	Regulation of Non-canonical Nucleic Acids Structure and Function by Molecular Probes	4.25 Crores	2020-till date (ongoing)	DBT-Wellcome Trust Senior fellowship
3	Regulation of Telomere by Targeting Telomeric repeat containing RNA with small molecules	59 lakhs	2018-2021	DBT
4	Targeting and mimicking nucleic acid quadruplexes: A synthetic organic chemistry Paradigm	3.08 Crores	2017-2019	DST Swarnajayanti Project

5	Design and synthesis of triazole tailored macrocyclic azole amides for G-quadruplex DNA Recognition	51 Lakhs	2014-2017 (completed)	DST Organic Chemistry
6	Recyclable magnetic nanoparticle-supported catalysis for enantioselective synthesis	44 Lakhs	2014-2018 (Completed)	DST Nanomission
7	Differential recognition of G-quadruplex DNA binding small molecules using Dynamic Combinatorial Chemistry	67 Lakhs	2011-2015 (Completed)	DBT, India
8	Biomimetic ion transport systems based on nucleoside derivatives	25 Lakhs	2014-2017 (Completed)	DAE-BRNS
9	Development of green protocols for the synthesis of biologically important molecules	27 Lakhs	2013-2015 (Completed)	DST Green Chemistry
10	Proline containing chiral dendritic molecules as novel G-quadruplex binding ligands	17 Lakhs	2012-2015 (Completed)	CSIR India