University of Calcutta
Faculty academic profile/CV

Name: **Dr. Susanta Sekhar Adhikari, *M. Sc, Ph.D***

Designation: Professor of Chemistry

Specialisation: Organic Chemistry

Mailing address: Department of Chemistry, University of Calcutta
92, A.P.C. Road, Kolkata-700009

Telephone: +91-9433352273 (cell)

E-Mail: **adhikarisusanta@yahoo.com**
ssachem@caluniv.com

Education:

Jun'2003-Jul'2004: Post-doctoral fellow, **Univ. of California, Irvine**, **USA**.
Mentor: **Professor Larry E. Overman**
Worked in the area of design and synthesis of bio-active Natural product

July 2001-May 2003: Post-doctoral fellow, **Univ. of Montreal**, **Montreal**, **Canada**
Mentor: **Professor Stephen Hanessian**
Worked in the area of medicinal chemistry comprising structure-based pharmaceutical drug design and synthesis (aminoglycoside antibiotics).

Mar'2000-June 2001: Honorary research associate in the Department of Organic Chemistry, **Indian Association for the Cultivation of Science, Jadavpur**.
Mentor: **Professor Subrata Ghosh**
Studies on the synthesis of Mispyric Acid, a novel triterpene with potential utility against DNA polymerase β

Nov'2000: Received Doctoral degree from **National Chemical Laboratory** Pune-411008, India.
Supervisor: **Dr. Mukund K. Gurjar**
Thesis Title: "Syntheses of Some Novel Anti-asthmatic Agents and Lipooligosaccharide of *Mycobacterium gordonae* Strain 990"

Jul'1994-May 1995: Junior Research Fellow-GATE, India Institute of Technology, Kharagpur, India
Mentor: Prof. Dipakranjan Mal
Pursued research in the area of angucyclines. **Refs: *Tetrahedron,* 1997,** 53, 2177. Completed graduate level courses on Rheology of polymer, Principles of polymer systems and German Language-each are for four credits.

Jun'1994: Received **M.Sc.** (Master of Science) Degree in Chemistry (Organic Chemistry Major). Graduated with First Class from Indian Institute of Technology (IIT), Kharagpur-721302, India.

May 1992: Received **B.Sc.** (Honors) Degree in Chemistry from Ramkrishna Mission Vivekananda Centenary College, Rahara, 24-NPGs, under Calcutta University, India.

Award and Fellowships:
Awarded Graduate Aptitude Test in Engineering (**GATE-94**) Fellowship in IIT Kharagpur. Qualified **SLET-94** conducted by W.B. College Service Commission

Awarded Doctoral Research Fellowship from Council of Scientific and Industrial Research (**CSIR**), Govt. of India

Meritorious certificate from Cytomed, Inc., USA (Millennium pharmaceuticals, Inc., at present) for development of CMI-977 bulk drugs

Position held/holding:

Professor, Dept. of Chemistry, University of Calcutta 10.7.2014 - present
Associate Professor, Dept. of Chemistry, University of Calcutta 10.7.2011 – 09.07.2014.
Reader, Dept. of Chemistry, University of Calcutta 10.02.2010 – 09.07.2011
Reader, Dept. of Chemistry, University of Burdwan 10.07.2008– 09.02.2010
Scientist 'C', Division of Medicinal Chemistry, CSIR-CDRI, Lucknow 30.01.2006 – 01.02.2007
Lecturer & Sr. Lecturer, Dept. of Chemistry, Shyampur College, affiliated to University of Calcutta, 07.03.2000–29.01.2006

Research Interest:

Synthetic organic chemistry, bio-organic chemistry, medicinal chemistry

a. Design and Development of Target Based New Chemical Entities for Breast-Prostate-ovarian Cancer and Malaria, Leishmania; Structure-based pharmaceutical drug design and synthesis.

b. Design and development of receptor targeted (estrogen receptor, folate receptor) anticancer therapeutics

c. Development of novel synthetic procedures and its application towards synthesis of various bio-active compounds.

d. Design and Development of fluorescent probes with nitrogen, oxygen and/or sulfur donor sites for detection of cancer, bio-analytes etc.

Experience: (a) Research: 22 years (b) Teaching: 16 years

Ph.D. alumni:

(a) Doctoral degree (Ph.D) awarded: 05

(b) Research scholars working for Ph.D degree: 05

(c) Number of postdoctoral fellows: 02

(d) M.Phil thesis awarded: 01

(e) Number of M.Sc project students supervised: 20 (till 2020)

Membership of Learned Societies:

1. Life member Indian Chemical Society, Kolkata, India

2. Life member Indian Association for the Cultivation of Science, Jadavpur, Kolkata, India

Extramural Research Grants:

Sl. No.	Name of the faculty	Projects Running (Title, Funding agency, Amount, Duration)
1	Susanta Sekhar Adhikari (PI)	Synthetic modification of fluorescent probe, NAP-RD for selective detection of stannus ion in biological system Funding agency: Colgate-Palmolive Company, USA, 2018-2019 Amount: 48000 USD Duration: 1 yr
2	Susanta Sekhar Adhikari (PI)	Development of oxindole based fluorescent, cell imager and its folate derivative as anticancer agents File No.: EMR/2017/002140, Oct.15, 2018 Funding agency: SERB-DST Amount: Rs. 42 Lakhs Duration: 3 yrs
3	Susanta Sekhar Adhikari (PI)	Design, synthesis and biological evaluation of novel estrogenic and kinase modulator against breast cancer File No.: SR/S1/OC-101/2012, Nov.9, 2013 Funding agency: SERB-DST Amount: Rs. 47 Lakhs Duration: 3 yrs

Books/ book chapters:

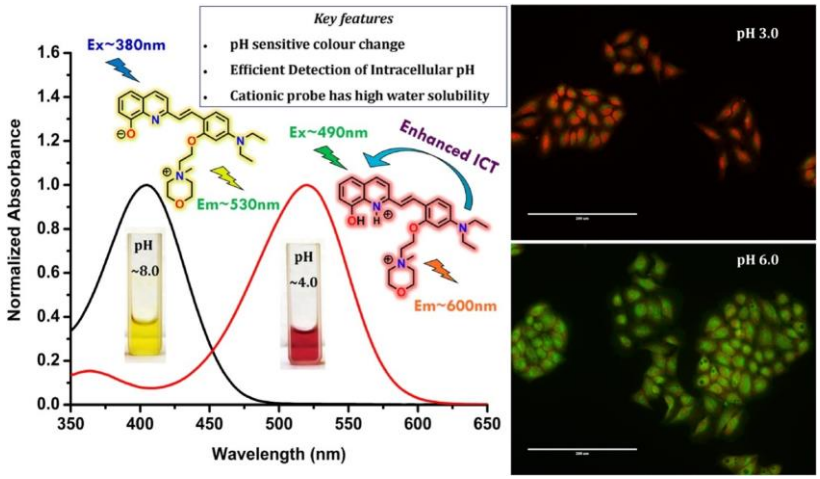
Gene therapy against Hsp90: Glucocorticoid receptor-assisted cancer treatment

Adhikari, S.; Mondal, S.; Banerjee, R. Heat Shock Protein-based Therapies, Springer International Publishing Switzerland 2015, Vol 8, Chap. 12, p219-256. ISSN 1877-1246

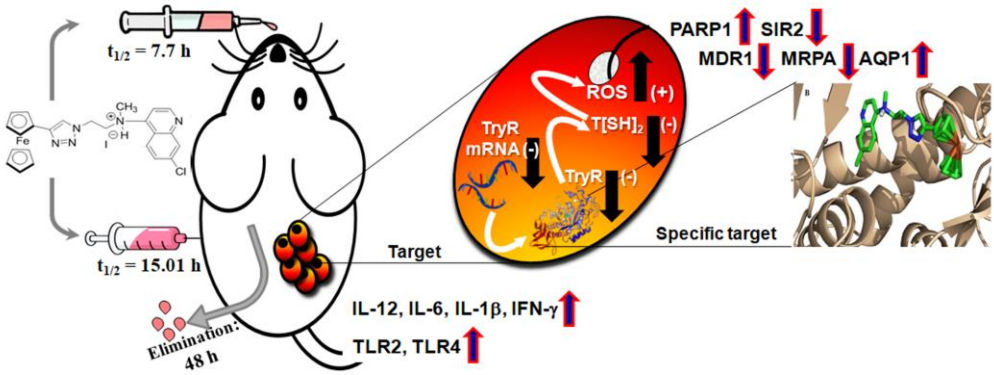
Publications (47) and Patents (07): next page continued….

Publications (47) and Patents (07):

1. X-ray structurally characterized quinoline based fluorescent probes for pH sensing: Application in intracellular pH imaging; DFT calculations and fluorescent labeling
   Guria, S.; Ghosh, A.; Mishra, T.; Das, M. k.; Adhikary, A.; **Adhikari, S**.* J. Photochem. Photobiol. A., 2021, 407, 113074.
   DOI: https://doi.org/10.1016/j.jphotochem.2020.113074

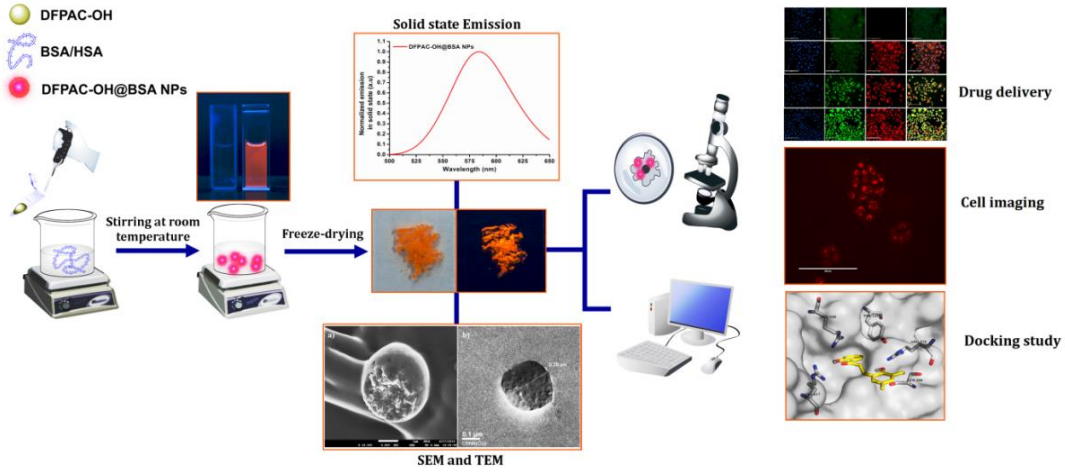


2. Targeting the trypanothione reductase of tissue-residing Leismania in hosts' reticuloendothelial system:Flexible water-soluble ferrocenylquinoline-based preclinical drug candidate
   Mukherjee, D.; Yousuf, Md.; Dey, S.; Chakraborty, S.; Kumar, V.; Chaudhuri, A.; Sarkar, B.; Nath, S.; Hussain, A.; Dutta, A.; Mishra, T.; Chakraborty, S.; Singh, S.; **Adhikari, S.***; Pal, C.* J. Med. Chem. 2020, 63, 24, 15621–15638
   DOI: https://doi.org/10.1021/acs.jmedchem.0c00690



3. Small-molecule probe for sensing serum albumin with consequential self-assembly as a fluorescent organic nanoparticle for bio-Imaging and drug delivery applications

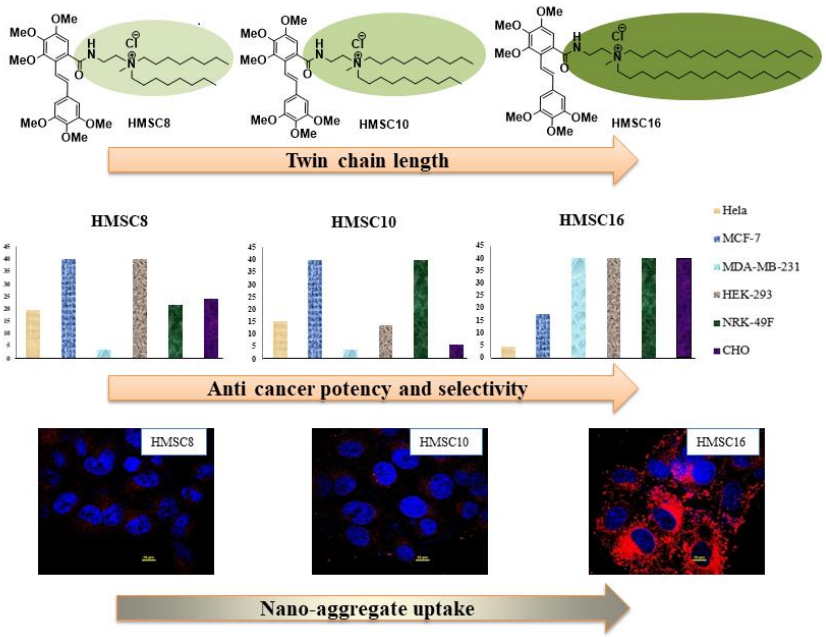
   Guria, S.; Ghosh, A.; Upadhyay, P.; Das, M. K.; Mishra, M.; Adhikary, A.; **Adhikari, S.*** ACS Appl. Bio Mater. **2020**, 3, 3099-3113. DOI: https://doi.org/10.1021/acsabm.0c00146



4. Methoxy-enriched cationic stilbenes as anticancer therapeutics

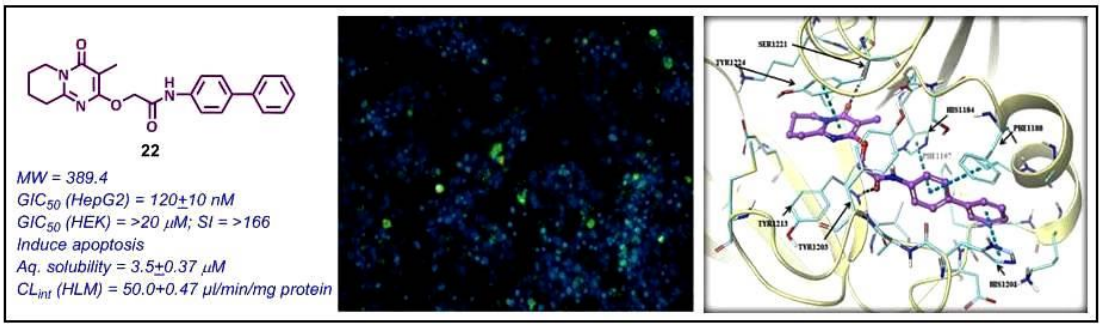
   Yousuf, Md.; Jinka, S.; **Adhikari, S**.; Banerjee, R.* Bioorg, Chem., **2020**, 98, 103719

   DOI: https://doi.org/10.1016/j.bioorg.2020.103719



5. Novel Pyrimidinone Derivatives Show Anticancer Activity and Induce Apoptosis: Synthesis, SAR and Putative Binding Mode

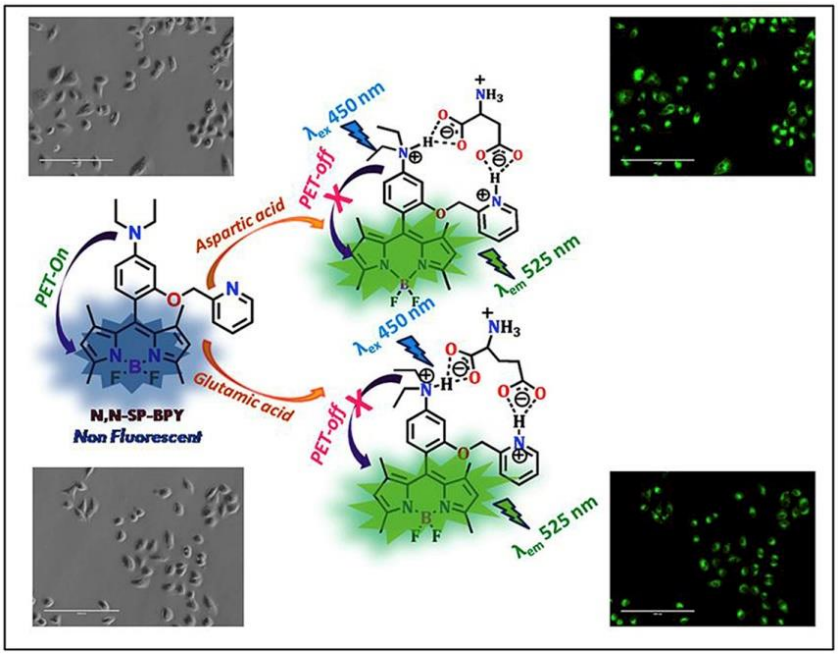
   Roy, A.; Kundu, M.*; Dhar, P.; Chakraborty, A.; Mukherjee, S.; Naskar, J.; Rarhi, C.; Barik, R.; Mondal, S.; Wani, M.; Gajbhiye, R.; Roy, K.; Maiti, A.; Manna, P.; **Adhikari, S.*** Chem. Select., **2020**, 5, 4559-4566. DOI: https://doi.org/10.1002/slct.202000208



6. Rapid detection of aspartic acid and glutamic acid in water by BODIPY based fluorescent probe: Live-cell imaging and DFT studies:

   Guria, S.; Ghosh, A.; Manna, K.; Pal, A.; Adhikary, A.; **Adhikari, S.*** Dyes Pigm., **2019**, 168, 111–122.

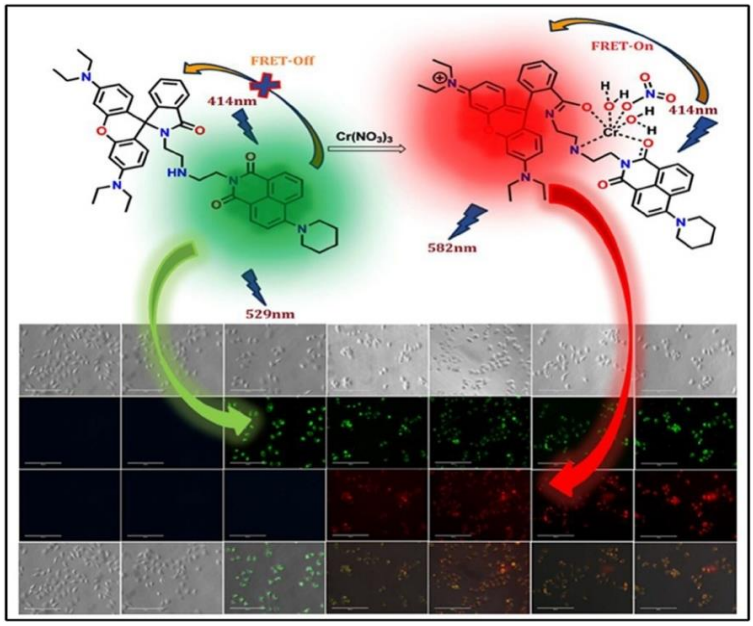
   DOI: https://doi.org/10.1016/j.dyepig.2019.04.052



7. A 1,8 naphthalimide anchor rhodamine B based FRET probe for ratiometric detection of Cr^{3+} ion in living cells

   Adhikari, S.*; Ta, S.; Ghosh, A.; Guria, S.; Pal, A.; Ahir, M.; Adhikary, A.; Hira, S.; Manna, P.; Das, D. J. Photochem. Photobiol. A., **2019**, 372, 49-58.

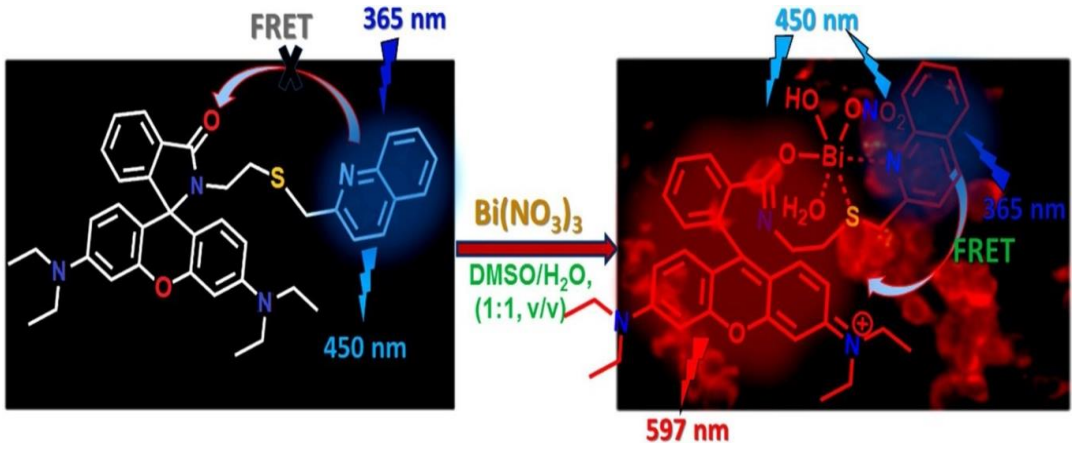
   DOI: https://doi.org/10.1016/j.jphotochem.2018.12.010



8. A FRET based colorimetric and fluorescence probe for selective detection of Bi^{3+} ion and live cell imaging

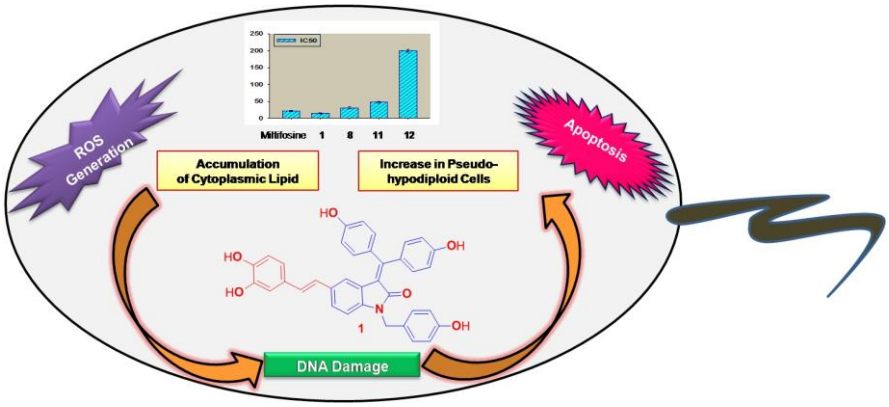
   Adhikari, S.*; Mandal, S.; Ghosh, A.; Guria, S.; Pal, A.; Adhikary, A.; Das, D. J. Photochem. Photobiol. A. **2018**, 360, 26-33.

   DOI: https://doi.org/10.1016/j.jphotochem.2018.04.005



9. Synthesis and biological evaluation of polyhydroxylated oxindole derivatives as potential antileishmanial agent

   Yousuf, Md.; Mukherjee, D.; Dey, S.; Chatterjee, S.; Pal, A.; Pal, C.; **Adhikari, S.*** Bioorg. Med. Chem. Lett. **2018**, 28, 1056-1062. DOI: https://doi.org/10.1016/j.bmcl.2018.02.023



10. Oestrogen receptor-mediated liposomal drug delivery for treating melanoma

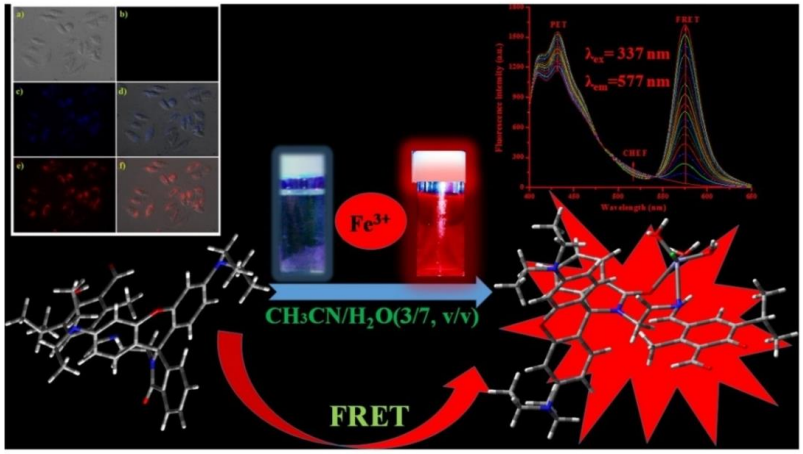
    Ganguly, A.; Rachamalla, H.K.R.; Bhattacharya, D.; Bhamidipati, K.; Pal, P.; Ravuri, G.; Chakravarty, S.; **Adhikari S.;** Banerjee, R.* J. Drug Target. **2018**, 26, 481-493.

    DOI: https://doi.org/10.1080/1061186X.2018.1433679

11. Ratiometric sensing of Fe^{3+} through PET-CHEF-FRET processes: Live cell imaging, speciation and DFT studies

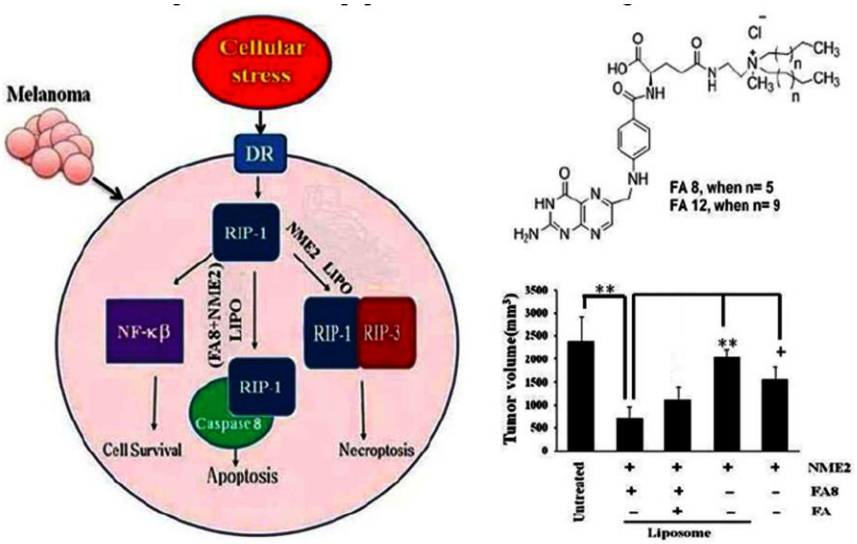
    Adhikari, S.*; Ghosh, A.; Ghosh, M.; Guria, S.; Das, D*. Sensors & Actuators B 2017, 251, 942-950.

    DOI: https://doi.org/10.1016/j.snb.2017.05.135



12. Cationic Folate-Mediated Liposomal Delivery of Bis-Arylidene Oxindole Induces Efficient Melanoma Tumor Regression

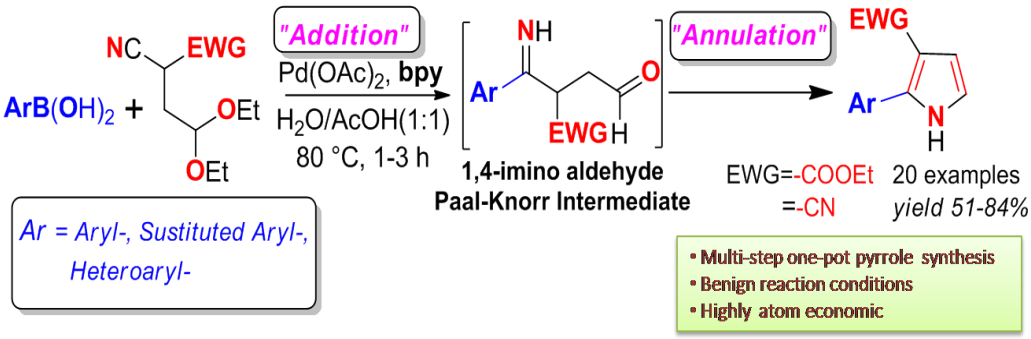
    Elechalawar, C. K.; Sridharan, K.; Pal, A.; Ahmed, M. T.; Yousuf, Md.; **Adhikari, S.;** Banerjee, R* Biomater. Sci. **2017**, 5, 1898-1909. DOI: https://doi.org/10.1039/C7BM00405B



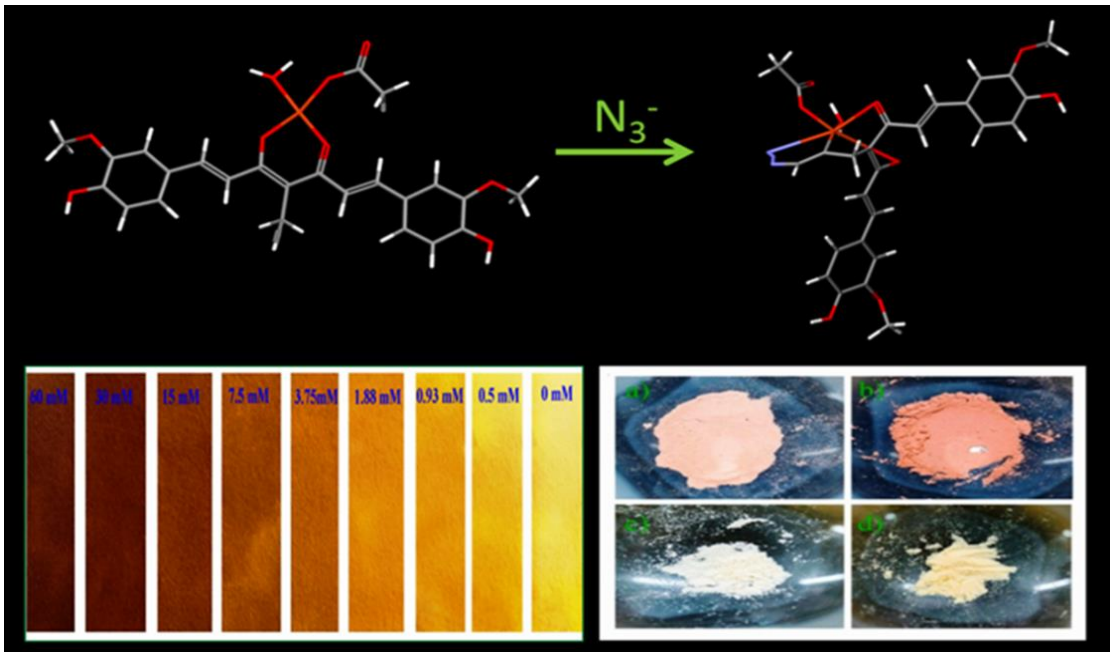
13. One-Pot Synthesis of 3-Substituted 2-Arylpyrrole in Aqueous Media via Addition−Annulation of Arylboronic Acid and Substituted Aliphatic Nitriles

    Yousuf, Md.; **Adhikari, S *** Org. Lett. **2017,** 19, 2214-2217.

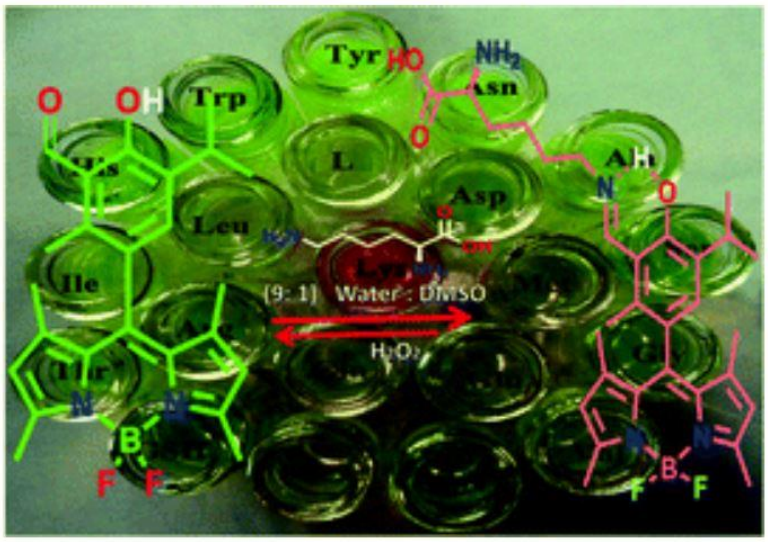
    DOI: https://doi.org/10.1021/acs.orglett.7b00490



14. A curcumin derived probe for colorimetric detection of azide ions in water
Adhikari, S.*; Subhajit Guria, S.; Ghosh, A.; Pal, A.; Das, D.
New J. Chem., **2017**, 41, 15368-15372. DOI:
https://doi.org/10.1039/C7NJ03266H



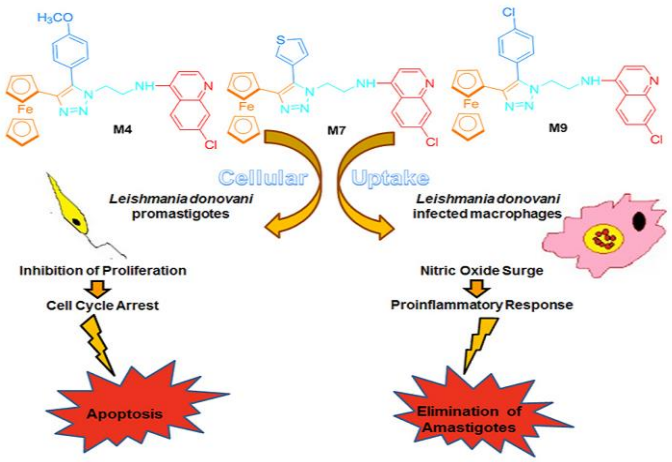
15. Colorimetric and fluorescence probe for detection of nano molar lysine in aqueous medium
Adhikari, S*.; Ghosh, A.; Guria, S.; Banerjee, P. P.; Chatterjee, A.; Das, D.*
Org. Biomol.Chem. **2016**, 14, 10688-10694. DOI:
https://doi.org/10.1039/C6OB01704E



16. Antileishmanial ferrocenylquinoline derivatives: synthesis and biological evaluation against *Leishmania donovani*

    Yousuf, Md.; Mukherjee, D.; Dey, S.; Pal, C.; **Adhikari, S*.** Eur.J.Med.Chem. **2016**, 124, 468-479.

    DOI: https://doi.org/10.1016/j.ejmech.2016.08.049



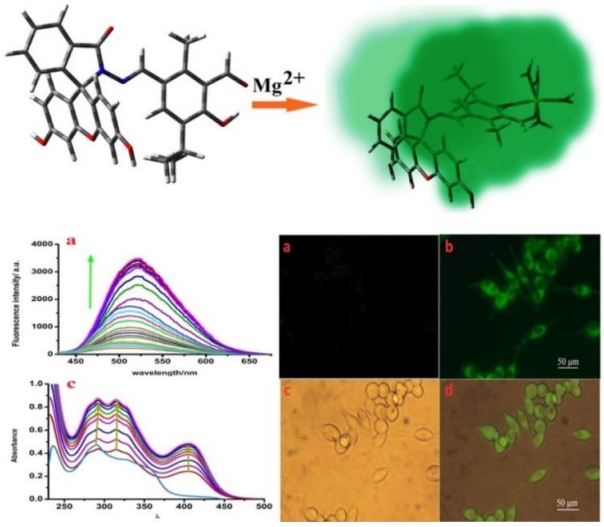
17. Antimalarial Activity of Small-Molecule Benzothiazole Hydrazones

    Sarkar, S.; Siddiqui, A. A.; Saha, S. J.; De, R.; Mazumder, S.; Nag, S.; **Adhikari, S**.; Bandyopadhyay, U.* Antimicrob Agents Chemother. **2016,** 60, 4217-4228.

    DOI: https://doi.org/10.1128/AAC.01575-15

18. Naturally occurring thymol based fluorescent probes for detection of intracellular free Mg^{2+} ion

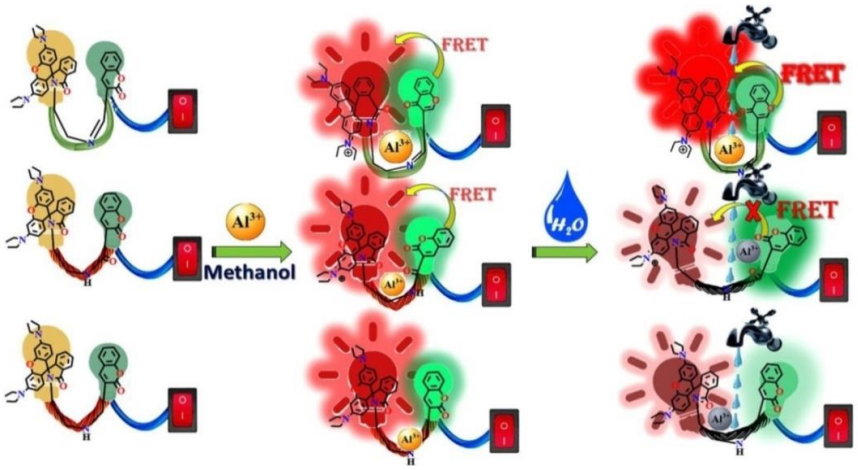
    Adhikari, S*; Ghosh, A.; Guria, S.; Sarkar, S.; Sahana, A. Sensors & Actuators B: Chem. **2016**, 236, 512-519. DOI: https://doi.org/10.1016/j.snb.2016.05.145



19. Tuning of donor-acceptor linker in rhodamine-coumarin conjugates leads remarkable solvent dependent FRET efficiency for Al^{3+} imaging in HeLa cells

    Adhikari, S.*; Mandal,S.; Ghosh,A.; Guria, S.; and Das, D*. Sensors & Actuators B **2016**, 234, 222-230.

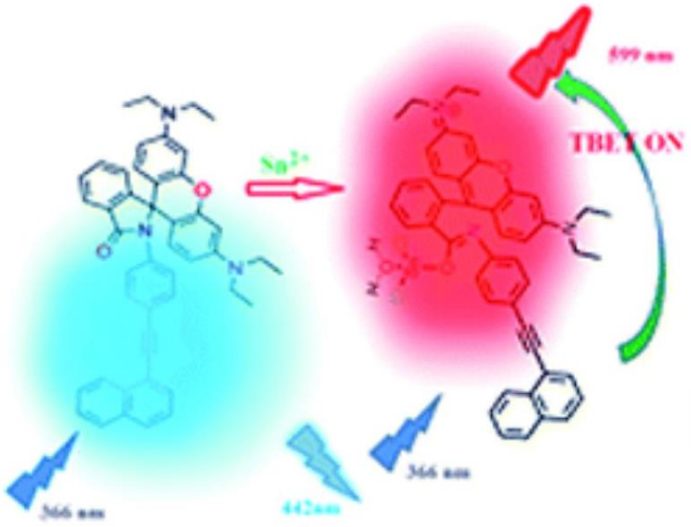
    DOI: https://doi.org/10.1016/j.snb.2016.04.135



20. A through bond energy transfer based ratiometric probe for fluorescent imaging of Sn^{2+} ions in living cells

    Adhikari, S*; Ghosh, A.; Guria, S.; Sahana, A. RSC Adv. **2016**, 6, 39657-39662.

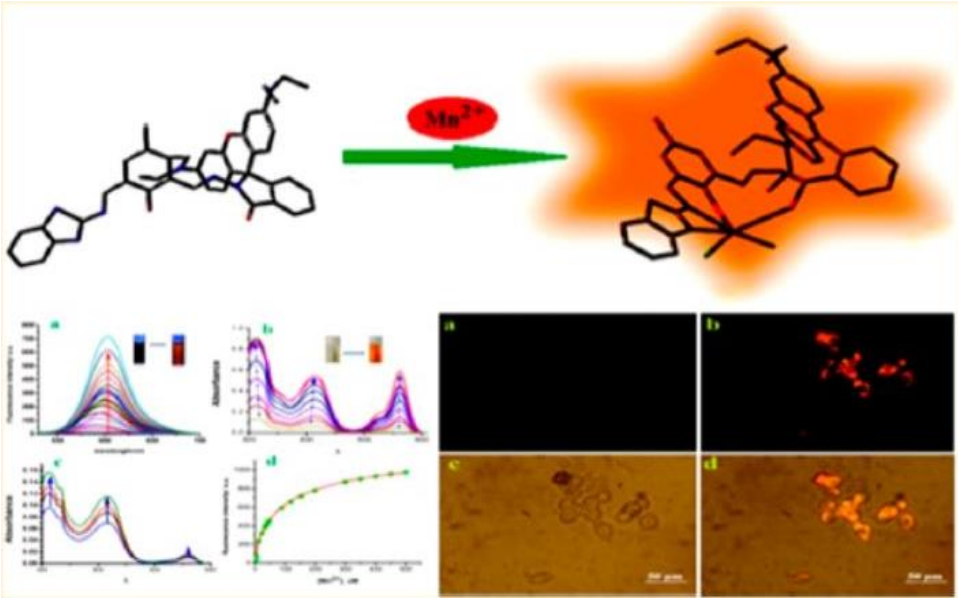
    DOI: https://doi.org/10.1039/C6RA05650D



21. Tailoring Ligand Environment toward Development of Colorimetric and Fluorescence Indicator for Biological Mn(II) Imaging

    Adhikari, S*; Ghosh, A.; Sahana, A.; Guria, S.; Das, D. Anal. Chem. **2016**, 88, 1106-1110.

    DOI: https://doi.org/10.1021/acs.analchem.5b03551



22. Zn^{2+} mediated solvent free solid state red emitting fluorescent complex formation in a mortor-pestle along with living cell imaging studies

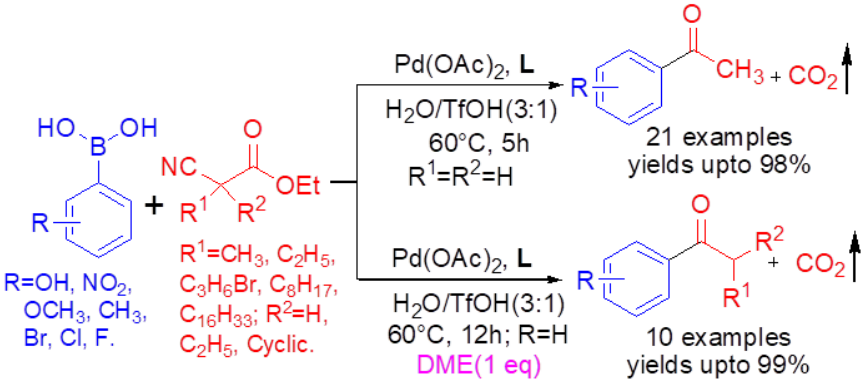
    Adhikari, S*; Ghosh, A.; Mandal, S.; Sahana, A.; Das, D. RSC Adv. **2015**, 5, 33878-33884.

    DOI: https://doi.org/10.1039/C5RA01059D

23. Palladium catalysed decarboxylative acylation of arylboronic acid with ethyl cyanoacetate as a new acylating agent: synthesis of alkylaryl ketones

    Yousuf, Md.; Das, T.; **Adhikari, S***. New J. Chem. **2015**, 39, 8763-8770.

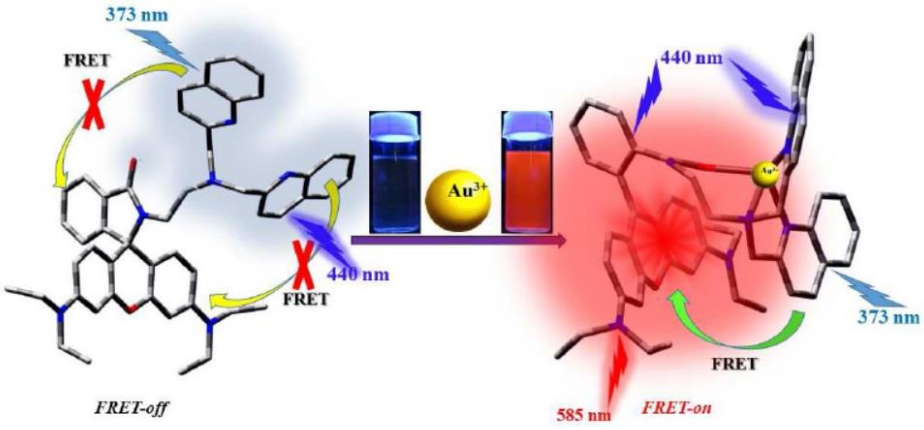
    DOI: https://doi.org/10.1039/C5NJ01597A



24. Strategically Modified Rhodamine–Quinoline Conjugate as a CHEF-Assisted FRET Probe for Au^{3+}: DFT and Living Cell Imaging Studies

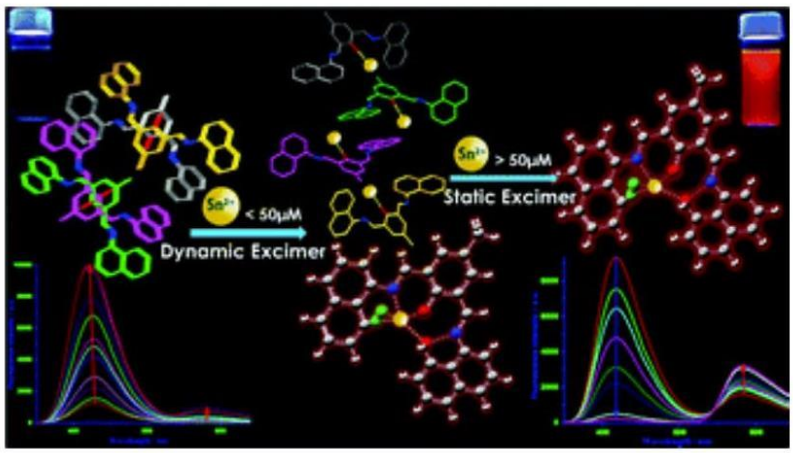
    Adhikari, S*; Mandal, S.; Ghosh, A.; Das, P.; Das, D. J. Org. Chem. **2015**, 80, 8530-8538.

    DOI: https://doi.org/10.1021/acs.joc.5b01141



25. Sn(II) induced concentration dependent dynamic to static excimer conversion of a conjugated naphthalene derivative

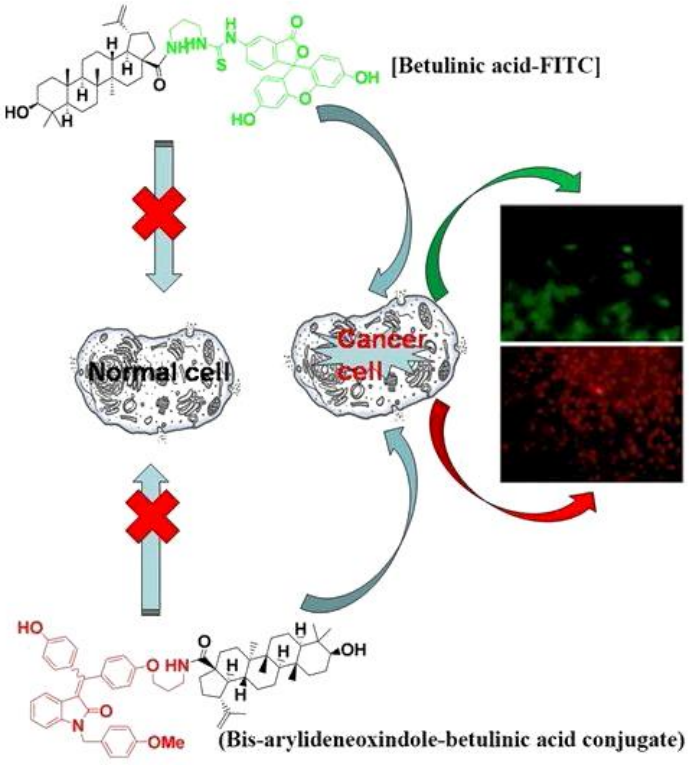
    Adhikari, S.*; Mandal, S.; Ghosh, A.; Guria, S.; and Das, D*. Dalton Trans., **2015**, 44, 14388-14393. DOI: https://doi.org/10.1039/C5DT02146D



26. Bis-arylidine oxindole-conjugated betulinic acid as a unique fluorescent indicator for cancer cell detection, reactive oxygen species generation and cytotoxicity

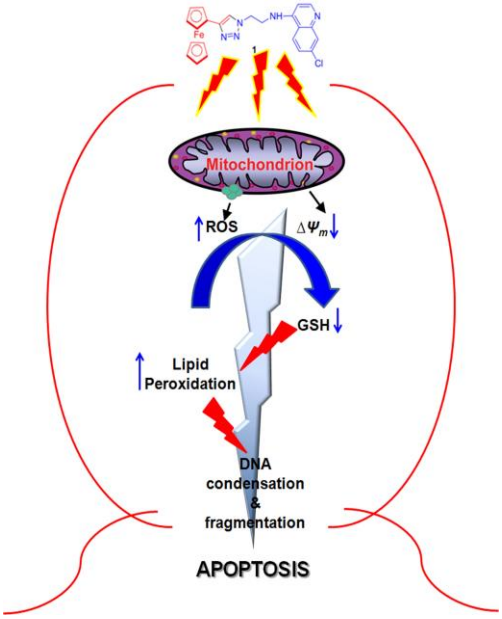
    Pal, A.; Ganguly, A.; Chowdhuri, S.; Yousuf, Md.; Ghosh, A.; Barui, A. K.; Kotcherlakota, R.; **Adhikari, S***.; Banerjee, R*. ACS Med Chem Lett. **2015**, 6, 612-616.

    DOI: https://doi.org/10.1021/acsmedchemlett.5b00095



27. Synthesis and Biological Evaluation of Small Molecule Ferrocenylquinoline as a Potential Antileishmanial Agent

    Yousuf, Md.; Mukherjee, D.; Pal, A.; Dey, S.; Mandal, S.; Pal, C.; **Adhikari, S*.** ChemMedChem **2015**, 10, 546-554. DOI: https://doi.org/10.1002/cmdc.201402537



28. Ellagic Acid, a Dietary Polyphenol, Inhibits Tautomerase Activity of Human Macrophage Migration Inhibitory Factor and Its Pro-inflammatory Responses in Human Peripheral Blood Mononuclear Cells.

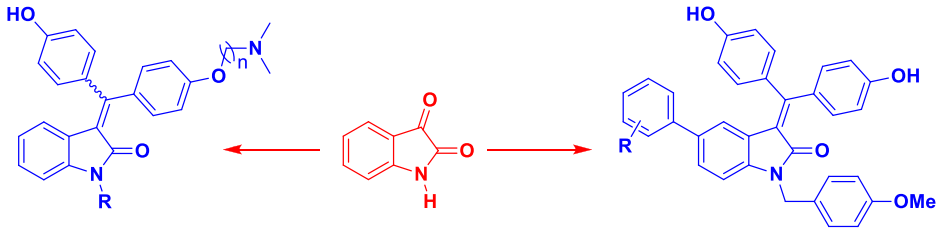
    Sarkar, S.; Siddiqui, A.A.; Mazumder, S.; De, R.; Saha, S.J.; Banerjee, C.; Iqbal M.S.; **Adhikari, S**.; Alam, A.; Roy, S.; Bandyopadhyay, U. J. Agric. Food Chem. **2015**, 63, 4988-4998.

    DOI: https://doi.org/10.1021/acs.jafc.5b00921

29. Bis-arylidine oxindoles as anti-breast cancer agents acting via the estrogen receptor

    Pal, A.; Ganguly, A.; Ghosh, A.; Yousuf, Md.; Rathore, M.; Banerjee, R*.; **Adhikari, S*.** ChemMedChem **2014**, 9, 727-732.

    DOI: https://doi.org/10.1002/cmdc.201400003



30. Ratiometric sensing of fluoride & acetate anions based on a BODIPY-azaindole platform and its application to living cell imaging

    Mohapatra, A; Maji, R; Maiti, K; **Adhikari, S**; Mukhopadhyay, C; Mandal, D. Analyst **2014**, 139, 309-317.

    DOI: https://doi.org/10.1039/C3AN01663C

31. Efficient and convenient methods for synthesis of some phthalazine derivatives and their evaluation of cytotoxicity

    Sen, S; Banerjee, S; **Adhikari, S**; Morirangthem, A; Basu, A; Chattopadhyay, P. Synth. Commun. **2014**, 44, 847-857.

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Patents: 7

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4. Antimicrobial 2-deoxystreptamine compounds
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5. Methods for synthesis of substituted tetrahydrofuran compound (Preparation of tetrahydrofurans as pharmaceutical intermediates)
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6. Preparation of 2,5-disubstituted pyrrolidines and tetrahydrothiophenes as leukotriene biosynthesis inhibitors
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Invited Lecture at National or International Conference/Seminar

1. Lecture delivered on “Design and Development of Anti-cancer Agents” in a National Conference entitled “Chemistry for Better-Tomorrow-Current Trends and Opportunity (CBT-2014)” dated December 02, 2014 organized by the Department of Chemistry, Sidho-Kanho-Birsha University, Purulia, W.B.

2. Lecture delivered on “Engineering *bis*-Arylidene Oxindole to Target Cancer” in International Conference entitled “Chemistry for Human Development (ICCHD-2018)” dated January 09, 2018 organized by the Asima Chatterjee Foundation, University of Calcutta and Heritage Institute of Technology, Kolkata.

3. Lecture delivered on “Estrogen Based Anti-Cancer Therapeutics” in International Conference entitled “Recent Advances in Molecules & Materials (RA2M-2018)” dated August 03, 2018 organized by the Indian Chemical Society and Haldia Institute of Technology, W.B.

Other notable activities:

a. External member of Ph.D committee and Post Graduate Board of Studies (PGBOS) in the Department of Chemistry, Burdwan University
b. Acted as Ph.D thesis and viva voce examiner of several Institutes (CSIR-IICT, Hyderabad, CSIR-IICB, Jadavpur, IACS-Kolkata) and Universities (Presidency University, Burdwan University, Visva-Bharati University, Jadavpur University etc.)
c. Joint course coordinator of Refresher Course in Chemistry, UGC-Academic Staff College University of Calcutta
d. Acted as reviewer for several international journals of ACS, RSC, Wiley, Elsevier, springer and Taylor & Francis