

## Curriculum Vitae

<https://ganeshnandi.wixsite.com/gcngroup>



1. Name: Dr. Ganesh Chandra Nandi
2. Designation: Assistant Professor
3. Office Address: Room no CH 214, OJAS building, Department of Chemistry, NIT-Trichy
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**6. Field(s) of Specialization:** Metal catalyzed organic transformation towards the synthesis of bio-active molecules, Asymmetric catalysis, Green synthesis, Heterocyclic chemistry

### 7. Employment Profile

| Job Title            | Employer                                  | From       | To         |
|----------------------|---|------------|------------|
| Assistant Professor  | NIT-Trichy                                | April 2018 | Till date  |
| DST-INSPIRE Faculty  | CSIR-NIIST, Trivandrum                    | Jan 2015   | March 2018 |
| Post-doctoral Fellow | University of KwaZulu-Natal, South Africa | Oct 2013   | Dec 2014   |
| Post-doctoral Fellow | University of North Florida, USA          | Aug 2012   | July 2013  |
| Research Chemist     | Chembiotek Res. Intl. Pvt. Ltd., Kolkata  | June 2006  | Nov 2007   |

### 8. Academic Qualifications:

| Examination | Board / University            | Year                  | Division/ Grade | Subjects                 |
|-------------|-------------------------------|-----------------------|-----------------|--------------------------|
| PhD         | Banaras Hindu University      | Jan 2008 to July 2012 |                 | Organic Synthesis        |
| M.Sc        | Banaras Hindu University      | 2004-2006             | 1 <sup>st</sup> | Organic Chemistry (Spl.) |
| B.Sc        | The University of Burdwan, WB | 2001 to 2004          | 1 <sup>st</sup> | Chemistry (Hons)         |

# National Institute of Technology, Tiruchirappalli:

## 9. Awards, Associateships etc.

| Year of Award | Name of the Award   | Awarding Organization |
|---------------|---------------------|-----------------------|
| 2014          | DST-INSPIRE Faculty | DST                   |

## 10. Details of Academic and Administrative Work

- (i) Curriculum Development: **Developed B. Tech syllabus for chemistry in 2018-2019 session**
- (ii) PhD exam co-ordinator for Chemistry in June 2019 session
- (iii) Courses taught at Postgraduate and Undergraduate levels: CH 601, 602, 609, CHIR 11, 12, CLPC 11.
- (iv) Projects guided at Postgraduate level: **M.Sc project – 6**
- (v) Other contribution(s): **NSS Program Officer**

## 11. Details of Major R&D Projects

| Title of Project   | Funding Agency | Duration  |          | Status             |
|--|----------------|-----------|----------|--------------------|
|  |                | From      | To       | Ongoing/ Completed |
| Synthesis and applications of Sulfonimidamides in organic and biological chemistry | DST            | Jan 2015  | Jan 2020 | Ongoing (35 L)     |
| Synthesis of sulfoximines via novel routes   | DST-SERB       | June 2019 | May 2022 | Ongoing (37 L)     |

## 12. a) PhD Students

- a. Irfana Jesin C. P. (Reg. June 2018)
- b. Ravindra S. (Reg. June 2018)
- c. Sabashini (Reg. January 2019)

## b) MSc project students

- a. Rohith J. (Jan 2019-May 2019)
- b. A. Antony Haritha Mercy (Jan 2019-May 2019)
- c. Sai Shruthi M. (Jan 2019-May 2019)
- d. Abinash (Jan 2020-May 2020)

## 13. Invited Talks delivered

| Topic                                       | Date                        | Inviting Organization                    |
|---|-----------------------------|--|
| Green Chemistry                             | 23 <sup>rd</sup> March 2018 | Manipal Institute of Technology, Manipal |
| Sulfonimidamides: Synthesis and Exploration | 22 <sup>nd</sup> March 2019 | CSIR-NIIST-Trivandrum                    |

## 14. Publications

### Books & Monographs

- (c) Book Chapter: **Nandi, G. C.\*** S. Ravindra, C. P. Irfana Jesin, P. Sasikumar, and K. V. Radhakrishnan\* *Cu-catalyzed Homocoupling reactions*. (John Wiley & Sons).
- (b) Book Chapter: P. Sasikumar, T. S. Priyadarshini, Sanjay Varma, **Nandi, G. C.** and K. V. Radhakrishnan\* *Cu - Catalyzed Carbonylation Reactions* (John Wiley & Sons).
- (a) Monograph: *Multicomponent Reactions: Applications of  $\beta$ -Naphthol,  $\beta$ -oxodithioesters and N,S-aryl aminoacetals*; **Nandi, G. C.**; Lambert Academic Publishing; **2013**. ISBN No. **978-3-659-32149-8**

### Independent Work

- (43) Ravindra S. Jesin, I. Shabashini A. **Nandi, G. C.\*** "Recent Advances in the Preparations and Synthetic Applications of Oxaziridines and Diaziridines" *Adv. Synth. Catal.* **2021** (Accepted)
- (42) **Nandi, G. C.\*** "Advances in the Synthesis and Applications of Three Membered Sila-, Sila-Aza/-Phospha/-Oxa/-Thia Cyclopropanes" *Eur. J. Org Chem.* 587-606, **2021**.
- (41) Jesin, I.; Mercy, A. H.; Ravindra S.; Kataria, S.; **Nandi, G. C.\*** A mild and metal-free protocol towards the synthesis of triarylmethanes by reactions of (hetero)arylboronic acids and orthohydroxyarylaldehydes *J. Org. Chem.* 85, 3000, **2020**.
- (40) Ravindra S. Rohith, J. Jesin, I. Kataria, R. **Nandi, G. C.\*** *Chemistry Select*, 47, 14004, **2019**.
- (39) Jesin, I.; Ravindra S. **Nandi, G. C.\*** Sulfonimidamide as a directing agent for Pd-catalyzed regioselective oxidative C-H acyloxylation of arenes *Tetrahedron* 75, 130622, **2019**.
- (38) (**Review**) Jesin, I.; **Nandi, G. C.\*** "Recent Advances in the A<sup>3</sup> Coupling Reactions and Their Applications" *Eur. J. Org Chem.* 16, 2704, **2019** (I. F: 3.02)
- (37) **Jesin, I.; Nandi, G. C.\*** Catalyst-Controlled Dual Reactivity of Sulfonimidamides: Synthesis of Propargylamines and N-propargyl sulfonimidamides. *Chem, Eur. J.* 25, 743-749, **2019**.

- (36) **Nandi, G. C.\*** Jesin, I. Direct Synthesis of *N*-Acyl Sulfonimidamides and *N*-Sulfonimidoyl Amidines from Sulfonimidoyl Azides. *Adv. Synth. Catal.* 360, 2465, **2018**.
- (35) **(Review) Nandi, G. C.\*** Arvidsson, P. I.\* Sulfonimidamides: Synthesis and Applications in Preparative Organic Chemistry. *Adv. Synth. Catal.* 360, 2976, **2018**.
- (34) **Nandi, G. C.\*** Cu-Catalyzed Mild Synthesis of *N*-Imidoyl/Oxoimidoyl Sulfonimidamides via Three Component Coupling of Sulfonimidamides, Azides and Alkynes. *Eur. J. Org. Chem.* 45, 6633-6638, **2017**.
- (33) **Nandi, G. C.\* Raju, C.** CuBr/TBHP-mediated synthesis of *N*-acyl sulfonimidamides via the oxidative cross-coupling of sulfonimidamides and aldehyde. *Org. Biomol. Chem.* 15, 2234, **2017**.
- (32) **Nandi, G. C.\*** Soumini K. Catalyst controlled straight forward synthesis of pyrrole/furan via propargylation/cycloisomerization of alpha-oxoketene-*N,S*-acetals. *J. Org. Chem.* 81, 11909, **2016**.
- (31) **Nandi, G. C.\*; Singh, M. S.\*** *p*-TSA/Base Promoted Propargylation/Cyclization of  $\alpha$ -Ketothioamides for the Regioselective Synthesis of Highly Substituted (hydro)Thiophenes *J. Org. Chem.* 81, 5824, **2016**.
- (30) **Nandi, G. C.\*** An efficient Cu-catalyzed microwave-assisted synthesis of diaryl sulfones *Synthetic Communications* 47, 319, **2017**.

#### Previous work

- (29) **Nandi, G. C.;** Kota, S. R.; Wakchaure, P. B.; Chinthakindi, P.; Govender, T.; Kruger, H. G.; Naicker, T.; Arvidsson, P. I. Pd-catalyzed C–N coupling of vinylbromides and sulfonimidamides: a facile synthesis of *N*-vinylsulfonimidamides. *RSC Adv.* 5, 62084–62090, **2015**.
- (28) **Nandi, G. C.;** Kota, S. R.; Naicker, T.; Govender, T.; Kruger, H. G.; Arvidsson, P. I. Cu(OAc)<sub>2</sub>-Catalysed Oxidative Dual C–H/N–H Activation of Terminal Alkynes and *N*-Deprotected Sulfonimidamides: An Easy Access to *N*-Alkynylated Sulfonimidamides. *Eur. J. Org. Chem.* 2861–2867, **2015**.
- (27) **Nandi, G. C.;** Kota, S. R.; Govender, T.; Kruger, H. G.; Arvidsson, P. I. Cu(OAc)<sub>2</sub> Promoted Chan-Lam-Evans C–N cross coupling reactions on the *N*-nitrogen and *N'*-nitrogen atoms of sulfonimidamides with aryl boronic acids. *Tetrahedron*, 70, 5428-5433, **2014**.

- (26) **Nandi, G. C.**; Bunge, S. D. Laali, K. K.\* *Selectfluor*-mediated mild oxidative halogenation and thiocyanation of 1-aryl-allenes with TMSX (X = Cl, Br, I, NCS) and NH<sub>4</sub>SCN. *Tetrahedron Lett.* 55, 2401-2405, **2014**,
- (25) **Nandi, G. C.**; Borosky, G. L.; Kumar, G. G. K. S. N.; Laali, K. K.\* Electrophilic Addition of Propargylic Cations to Allenes: Formation of Crowded Chloro- and Azido-Enynes by Trapping of the Resulting Allylic Cations with TMSX (X = Cl, N<sub>3</sub>): A Synthetic and Computational Study. *Eur. J. Org. Chem.* 5455-5463, **2013**.
- (24) **Nandi, G. C.**; Rathman, B. M.; Laali, K. K. Mild conversion of propargylic alcohols to  $\alpha,\beta$ -unsaturated enones in ionic liquids (ILs); a new 'metal free' life for the Rupe rearrangement. *Tetrahedron Lett.* 54, 6258-6263, **2013**.
- (23) **(Review Article) Nandi, G. C.**; Chanda, T.; Singh, M. S.\*  $\beta$ -Oxodithioesters: A New Frontier for Diverse Heterocyclic Architectures. *R.Sc Adv.* 3, 14183-14198, **2013**.
- (22) **Nandi, G. C.**; Laali, K. K. Schmidt Reaction in Ionic Liquids: Highly Efficient and Selective Conversion of Aromatic and Heteroaromatic Aldehydes to Nitriles with [BMIM(SO<sub>3</sub>H)][OTf] as Catalyst and [BMIM][PF<sub>6</sub>] as Solvent. *Tetrahedron Lett.* 54, 2177-2179, **2013**.
- (21) **Nandi, G. C.**; Samai, S.; Singh, M. S.\* DABCO-Promoted three-component regioselective synthesis of functionalized chromen-5-ones and pyrano[3,2-c]chromen-5-ones via direct annulation of  $\alpha$ -oxoketene-N,S-arylaminoacetals under solvent-free conditions *Green Chem.* 14, 447-455, **2012**,
- (20) **Nandi, G. C.**; Singh, M. S.; Ila, H. Highly regioselective one-pot three component synthesis of 1-aryl-3,4-substituted/annulated-5-N-(cycloamino)/alkyl aminopyrazoles from  $\beta$ -oxodithioesters *Eur. J. Org. Chem.* 967-974, **2012**.
- (19) **Nandi, G. C.**; Samai, S.; Singh, M. S. One-pot two-component [3 + 2] cycloaddition/annulation protocol for the synthesis of highly functionalized thiophene derivatives. *J. Org. Chem.* 76, 8009–8014, **2011**.
- (18) **Nandi, G. C.**; Samai, S.; Kumar, R.; Singh, M. S.\* Silica-gel-catalyzed efficient synthesis of quinoxaline derivatives under solvent-free conditions. *Synth. Commun.* 41, 417-425, **2011**.
- (17) **Nandi, G. C.**; Samai, S.; Singh, M. S.\* Biginelli and Hantzsch-type reactions leading to highly functionalized dihydropyrimidinone, thiocoumarin, and pyridopyrimidinone frameworks via ring annulation with  $\beta$ -oxodithioesters. *J. Org. Chem.* 75, 7785-7795, **2010**.

- (16) **Nandi, G. C.**; Samai, S.; Singh, M. S.; First InCl<sub>3</sub>-catalyzed, three-component coupling of aldehydes,  $\beta$ -naphthol, and 6-amino-1,3-dimethyluracil to functionalized naphthopyranopyrimidines. *Synlett.* 1133-1137, **2010**.
- (15) **Nandi, G. C.**; Samai, S.; Kumar, R.; Singh, M. S. An efficient one-pot synthesis of tetrahydrobenzo[*a*]xanthene-11-one and diazabenzo[*a*]anthracene-9,11-dione derivatives under solvent-free condition. *Tetrahedron* 65, 7129-7134, **2009**.
- (14) **Nandi, G. C.**; Samai, S.; Kumar, R.; Singh, M. S.\* Atom-efficient and environment-friendly multicomponent synthesis of amidoalkyl naphthols catalyzed by P<sub>2</sub>O<sub>5</sub>. *Tetrahedron Lett.* 50, 7220-7222, **2009**.
- (13) Chinthakindi, P. K.; **Nandi, G. C.**; Govender, T; Kruger, H. G.; Naicker, T.; Arvidsson, P. I. An Efficient Protecting-Group-Free Synthesis of Vinylic Sulfoximines via Horner–Wadsworth–Emmons Reaction. *Synlett* 27, 1423-1427, **2016**.
- (12) Koley, S.; Chowdhury, S.; Chanda, T.; Ramulu, B. J.; **Nandi, G. C.**; Singh, M. S.\* Iron Promoted Domino Annulation of  $\alpha$ -Enolic dithioesters with Ninhydrin Under Solvent-Free Conditions: Chemoselective Direct Access to Indeno[1,2-*b*]thiophenes. *Eur. J. Org. Chem.* 5501-5508, **2014**.
- (11) Chowdhury, S.; Chanda, T.; **Nandi, G. C.**; Koley, S.; Pandey, S. K.; Singh, M. S.\* Y(OTf)<sub>3</sub> catalyzed substitution dependent oxidative C(sp<sup>3</sup>)–C(sp<sup>3</sup>) cleavage and regioselective dehydration of  $\beta$ -allyl- $\beta$ -hydroxydithioesters: alternate route to  $\alpha,\beta$ -unsaturated ketones and functionalized dienes. *Tetrahedron* 69, 8899-8903, **2013**.
- (10) Ramulu, B. J.; Chanda, T.; Chowdhury, S.; **Nandi, G. C.**; Singh, M. S.\* Organocatalyzed straightforward synthesis of highly fluorescent 3,5-disubstituted 2,6-dicyanoanilines via domino annulation of  $\alpha$ -enolicdithioesters with malononitrile. *RSc Adv.* **3**, 5345-5349, **2013**.
- (9) Samai, S.; **Nandi, G. C.**; Singh, M. S.\* Highly convergent one-pot four-component regioselective synthesis of 4*H*-benzo[*f*]chromenes via annulation of  $\alpha$ -oxodithioesters. *Tetrahedron* 68, 1247-1252, **2012**.
- (8) Chowdhury, S.; **Nandi, G. C.**; Samai, S.; Singh, M. S.\* Regioselective synthesis of tetrahydrothiochromen-5-ones via a one-pot three-component solvent-free domino protocol. *Org. Lett.* **13**, 3762-3765, **2011**.
- (7) Samai, S.; **Nandi, G. C.**; Chowdhury, S.; Singh, M. S.\* L-Proline catalyzed synthesis of densely functionalized pyrido[2,3-*d*]pyrimidines via three-component one-pot domino Knoevenagel aza-Diels–Alder reaction. *Tetrahedron* 67, 5935-5941, **2011**.

- (6) Samai, S.; **Nandi, G. C.**; Singh, P.; Gupta, A.; Singh, M. S.\* Microwave assisted synthesis, chemiluminescent and theoretical studies of bromoalkyl esters of acridine-9-carboxylic acid. *Ind. J. Chem. 50B*, 580-586, **2011**.
- (5) Samai, S.; **Nandi, G. C.**; Singh, M. S.\* An efficient and facile one-pot synthesis of propargylamines by three-component coupling of aldehydes, amines, and alkynes *via* C–H activation catalyzed by NiCl<sub>2</sub>. *Tetrahedron Lett.* 51, 5555-5558, **2010**.
- (4) Kumar, R.; **Nandi, G. C.**; Verma, R. K.; Singh, M. S.\* A facile approach for the synthesis of 14-aryl- or alkyl-14*H*-dibenzo[*a,j*]xanthenes under solvent-free condition. *Tetrahedron Lett.*, 51, 442-445, **2010**.
- (3) Singh, P.; Tripathi, R.; Verma, R. K.; **Nandi, G. C.**; Gupta, A.; Singh, M. S.\* Synthesis of New Benzosubstituted Dioxaphosponines Containing Quinoxaline Subunit. *Phosphorus, Sulfur, and Silicon and the Related Elements* 185, 2142–2151, **2010**.
- (2) Samai, S.; **Nandi, G. C.**; Kumar, R.; Singh, M. S.\* Multicomponent one-pot solvent-free synthesis of functionalized unsymmetrical dihydro-1*H*-indeno[1,2-*b*]pyridines. *Tetrahedron Lett.* 50, 7096-7098, **2009**.
- (1) Samai, S.; **Nandi, G. C.**; Singh, P.; Singh, M. S.\* L-Proline: an efficient catalyst for the one-pot synthesis of 2,4,5-trisubstituted and 1,2,4,5-tetrasubstituted imidazoles. *Tetrahedron* 65, 10155-10161, **2009**.