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APPENDIX-A

List of Publications: (**Thesis related**)

1. "Pd-NHC catalysed carbonylative Sonogashira coupling for the formation of 4-quinolones and 4*H*-chromen-4-one" **Prasanjit Ghosh** and Sajal Das (Manuscript under process of submission).
2. "Pd-NHC catalysed carbonylative Suzuki coupling reactions of aryl halides and arylboronic acids and its application towards the synthesis of biologically active 4-quinolone scaffolds" **Prasanjit Ghosh**, Bhaskar Ganguly and Sajal Das. (Manuscript under process of submission).
3. "Pd-NHC catalysed thioetherification of 3-iodo-2-aryl substituted 4-quinolone derivatives *via* C-S cross couplings" **Prasanjit Ghosh** and Sajal Das (Manuscript under process of submission).
4. "Ni catalysed C-S cross-coupling of 3-iodo-2-aryl substituted-4-quinolone derivatives" **Prasanjit** Ghosh and Sajal Das (Manuscript under process of submission).
5. "Synthesis of 6-aryl substituted 4-quinolones *via* Suzuki cross coupling" Sumanta Gupta, **Prasanjit Ghosh**, Seema Dwivedi and Sajal Das. *RSC.Adv*, **2014**, *4*, 6254-6260.
6. "Regiocontrolled nitration of 4-quinolones at ambient condition" Sonali sarkar, **Prasanjit Ghosh**, Anirban Misra and Sajal Das, *Synth.Comm*, **2015**, *45*, 2386-2393.
7. "Ligandless copper catalysed rapid and selective C-NH_2 arylation of 4-quinolone at ambient condition" **Prasanjit** Ghosh and Sajal Das (Manuscript under process of submission).
8. "Synthesis and functionalisation of 4-quinolones-a progressing story" **Prasanjit** Ghosh and Sajal Das (Manuscript under process of submission).

(Non Thesis Publications):

9. "A green etiquette for Pd catalyzed ligand free homocoupling reaction of arylboronic acids at ambient conditions" Seema Dwivedi, Soumik Bardhan, **Prasanjit Ghosh** and Sajal Das, *RSC. Adv*, **2014**, *4*, 41045-41050.
10. "A Fast and Additive Free C–C Homo/Cross-Coupling Reaction in Reverse Micelle: An Understanding of Role of Surfactant, Water Content and Base on the Product Yield and Reaction Site" Barnali Kar, Soumik Bardhan, **Prasanjit Ghosh**, Bhaskar

Ganguly, Kaushik Kundu, Sonali Sarkar, Bidyut Kumar Paul, and Sajal Das, *Chemistry select*, **2017**, 2, 1079-1088.

11. "Microemulsion Mediated Organic Synthesis and the Possible Reaction Site" **Prasanjit Ghosh**, Barnali Kar, Soumik Bardhan, Kaushik Kundu, Swapan Kumar Saha, Bidyut K. Paul and Sajal Das, *J. Surface Sci. Technol*. **2016**, 32, 8–16.
12. "A synthesis of Biaryl Ketones *via* the C-S bond cleavage of Thiol esters by a Cu/Ag salt" **Prasanjit Ghosh**, Bhaskar Ganguly, Eliyahu Perl and Sajal Das (Manuscript Communicated).
13. "Microemulsion (mEs) mediated rapid synthesis of Imidazo[1,2 *a*]pyridine and its late-stage functionalization." **Prasanjit Ghosh**, Bhaskar Ganguly, Barnali Kar and Sajal Das (Manuscript Communicated).
14. "A novel Pd-NHC catalysed carbonylation of aryl halides towards the synthesis of thioesters, acids, ketones, amides and its application towards 4-quinolone scaffolds" **Prasanjit Ghosh**, Bhaskar Ganguly, and Sajal Das (Manuscript under process of submission).
15. "Formation of High-Temperature Stable Benzimidazolium Ionic Liquid-in-Oil Microemulsion and Regioselective Nitration Reaction Therein" Barnali Kar, Soumik Bardhan, Kaushik Kundu, **Prasanjit Ghosh**, Bidyut K. Paul and Sajal Das (Manuscript communicated).

APPENDIX-B

Oral Presentations

1. "Synthesis of Biaryl ketones *via* C-S bond cleavage of Thiol ester" in the National Seminar "Frontier in Chemistry –2017" organized by the Department of Chemistry, NBU and funded by UGC and SAP (DRS–III), held at University of North Bengal, Darjeeling, India, February 20-21, 2017.
2. "Synthesis of 6-aryl substituted 4-quinolones via Pd-NHC complex catalysed Suzuki cross coupling" in the National Seminar "Frontier in Chemistry –2015" organized by the Department of Chemistry, NBU and funded by UGC and SAP (DRS–III), held at University of North Bengal, Darjeeling, India, February 17–18, 2015.

Poster Presentations

1. "Synthesis of Biaryl ketones *via* C-S bond cleavage of Thiol ester" **Prasanjit Ghosh**, Bhaskar Ganguly, Barnali Kar and Sajal das in 19th CRSI National Symposium in Chemistry, held at University of North Bengal, Darjeeling, India, July 13–16, 2016.
2. "Synthesis of 6-aryl substituted 4-quinolones" **Prasanjit Ghosh**, Sumanta Gupta, Bhaskar Ganguly, Barnali Kar, Seema dwivedi and Sajal das in National Symposium on recent trends and perspectives in chemistry (RTPC-2015), National Institute of Technology, Sikkim, India, January 23-24, 2015.

ABBREVIATION

Ac	Acetyl
AMBH	aza-Morita-Baylis Hilmann
ANRORC	Addition of the Nucleophile Ring Opening, and Ring Closure
CB1	Cannabinoid-1
CB2	Cannabinoid-2
d	Doublet
DBU	1,8-Diazabicyclo[5.4.0]undec-7-ene
DCM	Dichloro methane
dd	Doublet of a doublet
DDQ	2,3-dichoro-5,6-dicyano-1,4-benzoquinone
DFT	Density functional theory
DMA	Dimethyl acetamide
DMEDA	N,N'-dimethylethylenediamine
DMF	N,N-dimethyl formamide
DMSO	Dimethyl sulpfoxide
DPEPhos	(Oxydi-2,1-Phenylene) bis(Diphenylphosphine)
ee	enantiomeric excess
EGFR	Epidermal growth factor receptor
EMME	Diethyl (ethoxymethylene)malonate
Et	Ethyl
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
KCC-1	Potassium chloride cotransporter 1
m	multiplet
MCM-41	Mobil Composition of Matter No. ***41***
Me	Methyl
MHz	Mega Hertz
NTFB	Nitronium tetrafluoroborate
per-6-ABCD	Per-6-amino-β-cyclodextrin
PPA	Poly phosphoric acid
q	Quartet
QSAR	Quantitative structure activity relationship
RT	Room Temperature
s	Singlet
SAR	Structure–activity relationship
SET	Single electron transfer

t	Triplet
TBAB	Tetrabutylammonium bromide
TBAHS-	Tetrabutyl ammonium hydrogen sulphate
t-BuO	Tert-butoxide
TC	Thiophen Carboxylate
TEMPO-	(2,2,6,6-tetramethylpiperidin-1-yl)oxidanyl
TFA	Tri fluoro acetic acid
THF	Tetrahydrofuran
TIPS-EBX	1-{[Tris-(1-methylethyl)silyl]ethynyl]}-1,2-benziodoxol-3(1H)-one
TLC	Thin layer chromatography
TMP	2,2,6,6-tetramethylpiperidyl
TMS	Tetra methyl silane
UTI	Urinary tract infections