

Appendix A

List of Published/ Accepted/ Communicated research Papers

1. Clean and Green Approach for One-pot Synthesis of Pyrazine from Ethylenediamine and 1, 2-Diketone or its Analogues under Neat Reaction Condition

Pranab Ghosh and **Rakesh Ranjan Chakraborty**. *Letters in Organic Chemistry*, **2017**, 14, 566-570.

2. Silica-Gel: An Efficient Catalyst For One-Pot Synthesis of Pyrazines From Ethylenediamine and 1, 2-Diketones or their analogues

Rakesh Ranjan Chakraborty, Rabindranath Singha and Pranab Ghosh. **Accepted for publication**, *Indian Journal of Heterocyclic Chemistry*. [Ms.ID. # IJHC- 3481-17].

3. One-pot route to nitriles from aldehyde and hydroxylamine hydrochloride on silica-gel.

Rakesh Ranjan Chakraborty and Pranab Ghosh. *Asian Journal of Green Chemistry*, **2018**, 2, 330-337.

4. TiCl_3 catalyzed one-pot protocol for the conversion of aldehydes into 5-substituted 1H-tetrazole

Rakesh Ranjan Chakraborty and Pranab Ghosh. *Communicated to Tetrahedron Letters*. [MS. Ref. No: TETL-D-18-01211].

5. Clean and Green Protocol for One-pot Synthesis of Pyrazine from Ethylenediamine and 1, 2-Diketone or its Analogues under Neat Reaction Condition

Rakesh Ranjan Chakraborty and Pranab Ghosh. Proceedings of the National Seminar “Frontier in Chemistry 2017” , (September 14, 2017), Department of Chemistry, University of North Bengal, Darjeeling.

Appendix B

List of Poster Presentation/ Participation in the national seminars

1. Clean and Green Approach for One-pot Synthesis of Pyrazine from Ethylenediamine and 1, 2-Diketone or its analogues under Neat Reaction Condition

Rakesh Ranjan Chakraborty and Pranab Ghosh. **Proceedings of the** National Seminar “Frontier in Chemistry 2017”, (September 14, 2017), Department of Chemistry, University of North Bengal, Darjeeling. (Poster presentation).

2. Science Academies Lecture Workshop on “Recent Developments on the Theoretical and Experimental Aspects of advanced Materials”

September 18-19, 2015 at Department of Chemistry, University of North Bengal

3. Frontiers in Chemistry-2015, UGC and SAP (DRS-III). Department of Chemistry, University of North Bengal

Appendix-C

Abbreviations

TiCl ₃	Titanium trichloride	PE	Petroleum ether
HCN	Hydrogen cyanide	EA	Ethyl acetate
HNO ₂	Nitrous acid	NMR	Nuclearmagnetic resonance
ZnCl ₂	Zinc Chloride	UV	Ultra violet
HCl	Hydrochloric acid	NH ₄ OAc	Ammonium acetate
TFA	Trifluoroacetic acid	CHCl ₃	Chloroform
FeCl ₃	Ferric Chloride	TMSN ₃	Trimethylsilyl azide
Al ₂ O ₃	Aluminium oxide	La(OTf) ₃	Lanthanum(III) triflate
KCN	Potassium cyanide	TfOH	Triflic acid
CuCN	Cuprous cyanide	KBr	Potassium bromide
Cu(hfacac) ₂	Copper hexafluoroacetyl-acetonate	THF	Tetrahydrofuran
InCl ₃	Indium trichloride	NaN ₃	Sodium azide
p-TSA	Para toluene sulphonic acid	P ₂ O ₅	Phosphorus pentoxide
t-BuOK	Potassium tertiary butoxide	AgNO ₃	Silver nitrate
Na ₂ SO ₄	Sodium sulphate anhydrous	HClO ₄	Perchloric acid
RT	Room temperature	MeOH	Methanol
TLC	Thin layer chromatography	KOH	Potassium hydroxide
FT-IR	Fourier transform infrared spectroscopy	MnO ₂	Manganese dioxide
TBAB	Tetra-n-butylammonium bromide	TMS	Tetramethyl Silane
TEA	Triethylamine		
(NH ₄) ₂ S	Ammonium sulphide		
[Bmim]Br	1-butyl-3-methylimidazolium bromide		
TBAA	tetrabutylammonium azide		
PFPAT	Pentafluoro phenyl ammonium triflate		
CeO ₂	Cerium dioxide		
CH ₃ CN	Acetonitrile		
Zn(OTf) ₂	Zinc triflate		
TEMPO	2, 2, 6, 6-tetramethyl piperidine-1-oxyl		
PhI(OAc) ₂	Iodosobenzenediacetate		
DIH	1, 3-diiodo-5, 5-dimethylhydantoin		
TBAF	Tetra-n-butylammonium fluoride		
PIDA	Phenyliodine (III) diacetate		
DMSO	Dimethyl sulfoxide		
DMF	N,N-Dimethylformamide		