

List of Schemes

Scheme No.	Scheme Caption	Page No.
Scheme 1.1	Synthesis of 1,2,4-thiadiazoles by cyclization	8
Scheme 1.2	Synthesis of 1,2,4-thiadiazoles by dimerization of thiobenzamides	9
Scheme 1.3	Synthesis of 1,2,4- thiadiazoles by condensation	10
Scheme 1.4	Synthesis of coumarin by Wittig reaction	14
Scheme 1.5	Synthesis of coumarin by Perkin reaction	14
Scheme 1.6	Synthesis of coumarin by Baylis-Hilman reaction	14
Scheme 1.7	Synthesis of coumarin by Pachmann reaction	15
Scheme 1.8	Synthesis of coumarin by Knoevenagel condensation	17
Scheme 1.9	Synthesis of imidazo[1,2-a]pyridines by multicomponent approach	22
Scheme 1.10	Synthesis of imidazo[1,2-a]pyridines by Tandem reaction	23
Scheme 1.11	Synthesis of imidazo[1,2-a]pyridines by Aminooxygenation	23
Scheme 1.12	Synthesis of imidazo[1,2-a]pyridines by Hydroamination	23
Scheme 1.13	Synthesis of imidazo[1,2-a]pyridines by oxidative coupling	24
Scheme 1.14	Synthesis of imidazo[1,2-a]pyridines by condensation reaction	25
Scheme 1.15	Common acid base catalysed synthesis of 4 <i>H</i> -pyran	28
Scheme 2.1	Reaction of <i>tert</i> -butyl nitrite with benzamide and thiobenzamide	53
Scheme 2.2	Proposed mechanism for the TBN induced	62

	dimerization reaction	
Scheme 2.3	Control experiment with TEMPO	63
Scheme 2.4	Chloranil mediated synthesis of 1,2,4-thiadiazole derivatives	64
Scheme 2.5	Controlled experiment with TEMPO	69
Scheme 2.6	Proposed mechanism for the chloranil-mediated synthesis of 1,2,4-thiadiazoles	70
Scheme 3.1	Previous & present method for the synthesis of coumarin	94
Scheme 3.2	Control experiment with TEMPO	99
Scheme 3.3	Controlled experiment with and without TBHP	101
Scheme 3.4	Plausible reaction mechanism	102
Scheme 3.5	Gram scale synthesis of coumarin	103
Scheme 4.1	Different approach for the synthesis of imidazo[1,2-a]pyridine	128
Scheme 4.2	Control experiment with TEMPO	137
Scheme 4.3	Plausible reaction mechanism	138
Scheme 4.4	Gram scale synthesis of imidazo[1,2-a]pyridines	138
Scheme 5.1	Solar energy mediated synthesis of 4 <i>H</i> -pyran	160
Scheme 5.2	Control experiment under dark reaction condition	172
Scheme 5.3	Control experiment under visible light	172
Scheme 5.4	Control experiment with TEMPO	173
Scheme 5.5	Plausible reaction mechanism for the ascorbic acid assisted synthesis of tetrahydrobenzo[<i>b</i>]pyran	174
Scheme 5.6	Gram scale synthesis of tetrahydrobenzo[<i>b</i>]pyran	175