APPENDIX B

B.1 Calculation of loading of base-functionalized groups on solid supported base

For example; calculation of loading of Fe₃O₄-DIPA bead Loading of 3-aminopropyl Fe₃O₄-1 bead = 1.2 mmol/g.= 1.2 mmolThis revealed that bead 1 g. contained amino group Weight of bead containing 1 mol of amino-functionalized groups $=\frac{1000 \text{ mg x 1 mol}}{0.0012 \text{ mol}}$ = 935.45 g The Fe₃O₄-DIPA bead were modified with diisopropylamine to form Fe₃O₄-DIPA bead = 129.20 g/mol Additive molecule weight of base Molecular weight of base-functionalized bead 935.45+129.20 g/mol = 1046.65 g/mol $=\frac{\lg x \ \mathrm{1mol}}{1046.65 \ \mathrm{g}}$ So, loading of base-functionalized bead 0.96 mmol/g

B.2 Calculation of basicity of supported base

For example; calculation of basicity of Fe₃O₄-Si-DIPA bead

Fe₃O₄-Si-DIPA 5 mg

The amount of titrant (0.01 M of trifluoroacetic acid) required

to reverse the color change

= 2.6 ml

This revealed that Fe₃O₄-Si-DIPA bead 5 mg has base concentration

 $= 2.6 \ge 0.01$

= 26 mmol

So, basicity of Fe₃O₄-Si-DIPA bead 1 g

 $\frac{26 \text{ mmol} \times 1000 \text{ mg}}{5 \text{ mg}}$

= 5.2 mmol/g

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright[©] by Chiang Mai University All rights reserved

CURRICULUM VITAE

Miss Parintip Rattanaburi

15th September 1981

Date of Birth

Education

Name

1. High School, Benjamarachutit School, Nachonsrithamarat,

Thailand (1997-2000)

2. Bachelor of Science (Chemistry), Ramchamhang

University, Bangkok, Thailand (1997-2002)

Poster Presentation

 P. Rattanaburi and M. Pattarawarapan, Silica Supported Base in Organic Synthesis, Pure and Applied Chemistry International Conference 2011(PACCON; 2011). January 5th-7th 2011

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright[©] by Chiang Mai University All rights reserved