

REFERENCES

- [1] D. Bernier, U.K. Wefelscheid, S. Woodward, Org. Prep. Proced. Int. 41 (2009) 173.
- [2] A. Pinner, R. Wolffenstein, Ber. Dtsch. Chem. Ges. 25 (1892) 1428.
- [3] E. Ochiai, Aromatic amine oxide, American Elsevier, New York, 1967.
- [4] V. VanRheenen, R.C. Kelly, D.Y. Cha, Tetrahedron Lett. (1976) 1973.
- [5] W.P. Griffith, S.V. Ley, G.P. Whitcombe, A.D. White, J. Chem. Soc. (1987) 1625.
- [6] S.V. Ley, J. Norman, W.P. Griffith, S.P. Marsden, Synthesis (1994) 639.
- [7] G.A. Molander, R. Figueroa, Org. Lett. 8 (2006) 75.
- [8] E.R. Klobukowski, R.J. Angelici, L.K. Woo, Organometallics 31 (2012) 2785.
- [9] E.R. Klobukowski, R.J. Angelici, L.K. Woo, Catal. Lett. 142 (2012) 161.
- [10] P. Capdevielle, D. Sparfel, J. Baranne-Lafont, N.K. Cuong, M. Maumy, Chem. Commun. (1990) 565.
- [11] A.G. Godfrey, B. Ganem, Tetrahedron Lett. 31 (1990) 4825.
- [12] J.M.J. Frechet, M.J. Farrall, G. Darling, React. Polym. 1 (1982) 27.
- [13] N.E. Leadbeater, C. van der Pol, Chem. Commun. (2001) 599.
- [14] D.S. Brown, E. Campbell, W.J. Kerr, D.M. Lindsay, A.J. Morrison, K.G. Pike, S.P. Watsonc, Synlett (2000) 1573.
- [15] D.S. Brown, W.J. Kerr, D.M. Lindsay, K.G. Pike, P.D. Ratcliffe, Synlett (2001) 1257.
- [16] L.M. González R, A.L. Villa de P, C. Montes de C, G. Gelbard, React. Funct. Polym. 65 (2005) 169.
- [17] P.I. Kitov, D.R. Bundle, Org. Lett. 3 (2001) 2835.
- [18] M.H. Yates, Tetrahedron Lett. 38 (1997) 2813.
- [19] T.J. Donohoe, R. Garg, P.R. Moore, Tetrahedron Lett. 37 (1996) 3407.
- [20] K. Bergstad, J.J.N. Piet, J.E. Backvall, J. Org. Chem. 64 (1999) 2545.

- [21] S.A. Hermitage, A. Murphy, P. Nielsen, S.M. Roberts, *Tetrahedron* 54 (1998) 13185.
- [22] T. Ono, P. Henderson, *Tetrahedron Lett.* 43 (2002) 7961.
- [23] W.L. Wong, W.S. Lee, H.L. Kwong, *Tetrahedron-Asymmetr.* 13 (2002) 1485.
- [24] K. Oh, J. Ryu, *Tetrahedron Lett.* 49 (2008) 1935.
- [25] I. Kaur, P.K. Dhiman, *Int. J. Org. Chem.* 1 (2011) 6.
- [26] S. Chandrasekhar, M. Sridhar, *Tetrahedron Lett.* 41 (2000) 5423.
- [27] D.X. Chen, C.M. Ho, Q.Y. Rudy Wu, P.R. Wu, F.M. Wong, W. Wu, *Tetrahedron Lett.* 49 (2008) 4147.
- [28] W.P. Griffith, J.M. Jolliffe, S.V. Ley, K.E. Springhorn, P.D. Tiffin, *Synth. Commun.* 22 (1992) 1967.
- [29] P. Zheng, L. Yan, X. Ji, X. Duan, *Synth. Commun.* 41 (2011) 16.
- [30] W. Prieb, G. Grynkiewicz, *Tetrahedron Lett.* 32 (1991) 7353.
- [31] K.C. Nicolaou, D.L.F. Gray, T. Montagnon, S.T. Harrison, *Angew. Chem. Int. Ed.* 41 (2002) 996.
- [32] S. Gao, D. Herzig, B. Wang, *Synthesis* 4 (2001) 544.
- [33] A.J. Pearson, Y. Kwak, *Tetrahedron Lett.* 46 (2005) 3407.
- [34] T.J. Donohoe, P.J. Lindsay-Scott, J.S. Parker, C.K.A. Callens, *Org. Lett.* 12 (2010) 1060.
- [35] N. Ueyama, N. Yoshinaga, A. Nakamura, *J. Chem. Soc., Dalton Trans.* (1990) 387.
- [36] T. Koenig, T. Barklow, *Tetrahedron* 25 (1969) 4875.
- [37] H. Sakurai, M. Ando, N. Kawada, K. Sato, A. Hosomi, *Tetrahedron Lett.* 27 (1986) 75.
- [38] R. Ito, N. Umezawa, T. Higuchi, *J. Am. Chem. Soc.* 127 (2004) 834.
- [39] S. Mukaiyama, J. Inanaga, M. Yamaguchi, *Bull. Chem. Soc. Jpn.* 54 (1981) 2221.
- [40] M. Rueping, H. Sundén, E. Sugiono, *Chem. Eur. J.* 18 (2012) 3649.
- [41] S.V. Ley, C. Ramarao, A.L. Lee, N. Østergaard, S.C. Smith, I.M. Shirley, *Org. Lett.* 5 (2003) 185.
- [42] C.E. Song, D.U. Jung, E.J. Roh, S.G. Lee, D.Y. Chi, *Chem. Commun.* (2002) 3038.

- [43] T. Rosenau, A. Potthast, P. Kosma, *Tetrahedron* 58 (2002) 9809.
- [44] W. Wardencki, J. Curyło, J. Namieśnik, *Pol. J. Environ. Stud.* 14 (2005) 389.
- [45] P. Lidström, J. Tierney, B. Wathey, J. Westman, *Tetrahedron* 57 (2001) 9225.
- [46] R.A. Sheldon, *Green Chem.* 7 (2005) 267.
- [47] N. Kuhnert, *Angew. Chem. Int. Ed. Engl.* 41 (2002) 1863.
- [48] S. Caddick, R. Fitzmaurice, *Tetrahedron* 65 (2009) 3325.
- [49] M.A. Surati, S. Jauhari, K.R. Desai, *Arch. Appl. Sci. Res.* 4 (2012) 645.
- [50] V.K. Saxena, U. Chandra, *Microwave Synthesis: A Physical Concept*, 2011.
- [51] K.S. Kim, Y.H. Song, N.H. Lee, C.S. Hahn, *Tetrahedron Lett.* 27 (1986) 2878.
- [52] R.J. Giguere, T.L. Bray, S.M. Duncan, G. Majetich, *Tetrahedron Lett.* 27 (1986) 4945.
- [53] R. Gedye, F. Smith, K. Westaway, H. Ali, L. Baldisera, L. Laberge, J. Rousell, *Tetrahedron Lett.* 27 (1986) 279.
- [54] S. Albonetti, R. Mazzoni, F. Cavani, *Transition Metal Catalysis in Aerobic Alcohol Oxidation*, The Royal Society of Chemistry, 2015, p. 1.
- [55] M.B. Gawande, S.N. Shelke, R. Zboril, R.S. Varma, *Acc. Chem. Res.* 47 (2014) 1338.
- [56] M. Gupta, S. Paul, R. Gupta, *Acta Chim. Slov.* 56 (2009) 749.
- [57] V. Polshettiwar, R.S. Varma, *Acc. Chem. Res.* 41 (2008) 629.
- [58] J. Lee, M. Hong, Y. Jung, E.J. Cho, H. Rhee, *Tetrahedron* 68 (2012) 2045.
- [59] M.S. Shmidt, A.M. Reverdito, L. Kremenchuzky, I.A. Perillo, M.M. Blanco, *Molecules* 13 (2008) 831.
- [60] F. Lehmann, M. Scobie, *Synthesis* 11 1679.
- [61] A.B. Tapase, V.S. Suryawanshi, N.D. Shinde, D.B. Shinde, *Bull. Environ. Pharmacol. Life Sci.* 1 (2012) 30
- [62] D. Kumar, R.C. Kamboj, *Int. J. Chem. Chem. Eng.* 3 (2013) 101.
- [63] A. Khalafi-Nezhad, A. Hashemi, *J. Chem. Res. Synop.* (1999) 720.
- [64] B.M. Khadikar, P.M. Bendale, *Synth. Commun.* 27 (1997) 2051.
- [65] S.V. Ley, A.W. Thomas, *Angew. Chem. Int. Ed.* 42 (2003) 5400.
- [66] H.P. Narkhede, U.B. More, D.S. Dalal, N.S. Pawar, D.H. More, P.P. Mahulikar, *Synth. Commun.* 37 (2007) 573.
- [67] H.G. Jaisinghani, B.M. Khadikar, *Synth. Commun.* 29 (1999) 3693.

- [68] Y. Wu, Z. Fu, D. Yin, Q. Xu, F. Liu, C. Lu, L. Mao, *Green Chem.* 12 (2010) 696.
- [69] P. Jansa, O. Basczynski, E. Prochazkova, M. Dracinsky, Z. Janeba, *Green Chem.* 14 (2012) 2282.
- [70] X.-A. Wu, P. Ying, J.-Y. Liu, H.-S. Shen, Y. Chen, L. He, *Synth. Commun.* 39 (2009) 3459.
- [71] D. Limnios, C.G. Kokotos, *RSC Adv.* 3 (2013) 4496.
- [72] K. Marjani, M. Asgari, A. Ashouri, G.H. Mahdavinia, H.A. Ahangar, *Chin. Chem. Lett.* 20 (2009) 401.
- [73] C. Wang, J. Liu, W. Leng, Y. Gao, *Int. J. Mol. Sci.* 15 (2014) 1284.
- [74] P.H. Liao, W.T. Wong, K.V. Lo, *J. Environ. Sci. Health A* 40 (2005) 1753.
- [75] Y. Su, L.C. Wang, Y.M. Liu, Y. Cao, H.Y. He, K.N. Fan, *Catal. Commun.* 8 (2007) 2181.
- [76] V. Chakraborty, M. Bordoloi, *J. Chem. Res.* 1 (1999) 118.
- [77] R. Ghorbani-Vaghei, H. Veisi, M. Amiri, *J. Chin. Chem. Soc.* 54 (2007) 1257.
- [78] M.M. Hashemi, A. Rahimi, Y. Ahmadibeni, *Acta Chim. Slov.* 51 (2004) 333.
- [79] G.S. Vanier, *Synlett* (2007) 131.
- [80] F. Taktak, I. Bulduk, *ISRN Org. Chem.* 2012 (2012) 1.
- [81] B.K. Banik, K.J. Barakat, D.R. Wagle, M.S. Manhas, A.K. Bose, *J. Org. Chem.* 64 (1999) 5746.
- [82] B. Desai, T.N. Danks, *Tetrahedron Lett.* 42 (2001) 5963.
- [83] D. Donati, C. Morelli, M. Taddei, *Tetrahedron Lett.* 46 (2005) 2817.
- [84] N.Z. Kiss, K. Ludányi, L. Drahos, G. Keglevich, *Synth. Commun.* 39 (2009) 2392.
- [85] B. Desai, D. Dallinger, C.O. Kappe, *Tetrahedron* 62 (2006) 4651.
- [86] V. Aberg, F. Norman, E. Chorell, A. Westermark, A. Olofsson, A.E. Sauer-Eriksson, F. Almqvist, *Org. Biomol. Chem.* 3 (2005) 2817.
- [87] E. Nomura, A. Hosoda, H. Mori, H. Taniguchi, *Green Chem.* 7 (2005) 863.
- [88] L.J. Goossen, F. Manjolinho, B.A. Khan, N. Rodríguez, *J. Org. Chem.* 74 (2009) 2620.
- [89] G. Shore, M.G. Organ, *Chem. Commun.* (2008) 838.
- [90] S. Zheng, A. Chowdhury, I. Ojima, T. Honda, *Tetrahedron* 69 (2013) 2052.

- [91] E. Balducci, L. Bellucci, E. Petricci, M. Taddei, A. Tafi, *J. Org. Chem.* 74 (2009) 1314.
- [92] W. Karuehanon, W. Fanfuenha, A. Rujiwattra, M. Pattarawarapan, *Tetrahedron Lett.* 53 (2012) 3486.
- [93] A.D. Sagar, D.S. Patil, B.P. Bandgar, *Synth. Commun.* 30 (2000) 1719.
- [94] D. Heber, E.V. Stoyanov, *Synlett* (1999) 1747.
- [95] C. Angrish, A. Kumar, S.M.S. Chauhan, *Indian J. Chem.* 44B (2005) 1515.
- [96] R.B.N. Baig, R.S. Varma, *Chem. Soc. Rev.* 41 (2012) 1559.
- [97] C.K. Z. Andrade, L.M. Alves, *Curr. Org. Chem.* 9 (2005) 195.
- [98] T.J. Mason, *Chem. Soc. Rev.* 26 (1997) 443.
- [99] S. Pilli, P. Bhunia, S. Yan, R.J. LeBlanc, R.D. Tyagi, R.Y. Surampalli, *Ultrason. Sonochem.* 18 (2011) 1.
- [100] P. Cintas, J.-L. Luche, *Green Chem.* 1 (1999) 115.
- [101] K.S. Suslick, *Kirk-Othmer Encyclopedia of Chemical Technology*, John Wiley & Sons, New York, 1998.
- [102] C. Gong, D.P. Hart, *J. Acoust. Soc. Am.* 104 (1998) 1.
- [103] R. Cella, H.A. Stefani, *Green Techniques for Organic Synthesis and Medicinal Chemistry*, John Wiley & Sons, Ltd, 2012, p. 343.
- [104] G.W.V. Cave, C.L. Raston, J.L. Scott, *Chem. Commun.* (2001) 2159.
- [105] M.S. Singh, S. Chowdhury, *RSC Adv.* 2 (2012) 4547.
- [106] K. Tanaka, F. Toda, *Chem. Rev.* 100 (2000) 1025.
- [107] M.A.P. Martins, C.P. Frizzo, D.N. Moreira, L. Buriol, P. Machado, *Chem. Rev.* 109 (2009) 4140.
- [108] A. Loupy, *C. R. Chimie* 7 (2004) 103.
- [109] R. S. Varma, *Green Chem.* 1 (1999) 43.
- [110] A.P. Dicks, *Green Chem. Lett. Rev.* 2 (2009) 87.
- [111] M. Himaja, D. Poppy, K. Asif, *Int. J. Res. Ayurv. Pharm.* 2 (2011) 1079.
- [112] S.-J. Jeon, H. Li, P.J. Walsh, *J. Am. Chem. Soc.* 127 (2005) 16416.
- [113] K. Tanaka, *Solvent-free Organic Synthesis* Wiley-VCH, Germany, 2003.
- [114] M.A. Petrukhina, *Coord. Chem. Rev.* 251 (2007) 1690.
- [115] S. Jaita, P. Kaewkum, C. Duangkamol, W. Phakhodee, M. Pattarawarapan, *RSC Adv.* 4 (2014) 46947.

- [116] M.D. Green, C. Schreiner, T.E. Long, *J. Phys. Chem. A* 115 (2011) 13829.
- [117] H. Niedermeyer, J.P. Hallett, I.J. Villar-Garcia, P.A. Hunt, T. Welton, *Chem. Soc. Rev.* 41 (2012) 7780.
- [118] J.P. Hallett, T. Welton, *Chem. Rev.* 111 (2011) 3508.
- [119] S. Chowdhury, R.S. Mohan, J.L. Scott, *Tetrahedron* 63 (2007) 2363.
- [120] T. Welton, *Chem. Rev.* 99 (1999) 2071.
- [121] A.J. Carmichael, M.J. Earle, J.D. Holbrey, P.B. McCormac, K.R. Seddon, *Org. Lett.* 1 (1999) 997.
- [122] M.R. Gyton, M.L. Cole, J.B. Harper, *Chem. Commun.* 47 (2011) 9200.
- [123] C.P. Mehnert, N.C. Dispenziere, R.A. Cook, *Chem. Commun.* (2002) 1610.
- [124] C. Wang, J. Liu, W. Leng, Y. Gao, *Int. J. Mol. Sci.* 15 (2014) 1284.
- [125] H. Valizadeh, S. Vaghefi, *Synth. Commun.* 39 (2009) 1666.
- [126] V. Le Boulaire, R. Gree, *Chem. Commun.* (2000) 2195.
- [127] P.M. Fresneda, J.A. Blázquez, *Tetrahedron Lett.* 53 (2012) 2618.
- [128] A. Zhu, R. Liu, L. Li, L. Li, L. Wang, J. Wang, *Catal.Today* 200 (2013) 17.
- [129] C. Yue, A. Mao, Y. Wei, M. Lü, *Catal. Commun.* 9 (2008) 1571.
- [130] F. Santamarta, P. Verdía, E. Tojo, *Catal. Commun.* 9 (2008) 1779.
- [131] A. Alizadeh, M.M. Khodaei, A. Eshghi, *J. Org. Chem.* 75 (2010) 8295.
- [132] T. Jiang, H. Gao, B. Han, G. Zhao, Y. Chang, W. Wu, L. Gao, G. Yang, *Tetrahedron Lett.* 45 (2004) 2699.
- [133] P.S. Shinde, S.S. Shinde, S.A. Dake, V.S. Sonekar, S.U. Deshmukh, V.V. Thorat, N.M. Andurkar, R.P. Pawar, *Arab. J. Chem.* 7 (2014) 1013.
- [134] C. Chiappe, S. Rajamani, F. D'Andrea, *Green Chem.* 15 (2013) 137.
- [135] J. Gui, X. Cong, D. Liu, X. Zhang, Z. Hu, Z. Sun, *Catal. Commun.* 5 (2004) 473.
- [136] Gerardus J. Kemperman, Theodorus A. Roeters, Peter W. Hilberink, *Eur. J. Org. Chem.* 2003 (2003) 1681.
- [137] G. Driver, K.E. Johnson, *Green Chem.* 5 (2003) 163.
- [138] S. Majumdar, J. De, A. Chakraborty, D. Roy, D.K. Maiti, *RSC Adv.* 5 (2015) 3200.
- [139] S.K. Boovanahalli, D.W. Kim, D.Y. Chi, *J. Org. Chem.* 69 (2004) 3340.
- [140] S. Sunitha, S. Kanjilal, P.S. Reddy, R.B.N. Prasad, *Tetrahedron Lett.* 49 (2008) 2527.

- [141] A. Chinnappan, D. La, H. Kim, RSC Adv. 3 (2013) 13324.
- [142] K. Qiao, C. Yokoyama, Catal. Commun. 7 (2006) 450.
- [143] J. Dupont, G.S. Fonseca, A.P. Umpierre, P.F.P. Fichtner, S.R. Teixeira, J. Am. Chem. Soc. 124 (2002) 4228.
- [144] D.-Q. Xu, Z.-Y. Hu, W.-W. Li, S.-P. Luo, Z.-Y. Xu, J. Mol. Catal. A 235 (2005) 137.
- [145] R. Venkatesan, M.H.G. Prechtl, J.D. Scholten, R.P. Pezzi, G. Machado, J. Dupont, J. Mater. Chem. 21 (2011) 3030.
- [146] M. J. Earle, P. B. McCormac, K. R. Seddon, Chem. Commun. (1998) 2245.
- [147] T.L.T. Bui, W. Korth, S. Aschauer, A. Jess, Green Chem. 11 (2009) 1961.
- [148] C. Qiao, Y. Cai, Q. Guo, Front. Chem. Eng. China 2 (2008) 346.
- [149] M. J. Earle, K. R. Seddon, C. J. Adams, G. Roberts, Chem. Commun. (1998) 2097.
- [150] Z.C. Liu, X.H. Meng, R. Zhang, C.M. Xu, Petrol. Sci. Technol. 27 (2009) 226.
- [151] Y. Xiao, S.V. Malhotra, J. Mol. Catal. A 230 (2005) 129.
- [152] T. Fischer, A. Sethi, T. Welton, J. Woolf, Tetrahedron Lett. 40 (1999) 793.
- [153] M. J. Earle, P. B. McCormac, K. R. Seddon, Green Chem. 1 (1999) 23.
- [154] K. Erfurt, I. Wandzik, K. Walczak, K. Matuszek, A. Chrobok, Green Chem. 16 (2014) 3508.
- [155] G. Zhao, T. Jiang, H. Gao, B. Han, J. Huang, D. Sun, Green Chem. 6 (2004) 75.
- [156] S. Sahoo, T. Joseph, S.B. Halligudi, J. Mol. Catal. A 244 (2006) 179.
- [157] H. Mehdi, A. Bodor, D. Lantos, I.T. Horváth, D.E. De Vos, K. Binnemans, J. Org. Chem. 72 (2007) 517.
- [158] J. Muzart, Adv. Synth. Catal. 348 (2006) 275.
- [159] M. Munoz, C.M. Domínguez, Z.M. de Pedro, A. Quintanilla, J.A. Casas, J.J. Rodriguez, Catal. Today 240, Part A (2015) 16.
- [160] S. Ahammed, D. Kundu, M.N. Siddiqui, B.C. Ranu, Tetrahedron Lett. 56 (2015) 335.
- [161] B. Lu, N. Cai, J. Sun, X. Wang, X. Li, J. Zhao, Q. Cai, Chem. Eng. J. 225 (2013) 266.
- [162] G.W. Kabalka, R.R. Malladi, Chem. Commun. (2000) 2191.
- [163] J.L. Reynolds, K.R. Erdner, P.B. Jones, Org. Lett. 4 (2002) 917.

- [164] M.A.P. Martins, C.P. Frizzo, A.Z. Tier, D.N. Moreira, N. Zanatta, H.G. Bonacorso, *Chem. Rev.* 114 (2014) PR1.
- [165] M.A.P. Martins, C.P. Frizzo, D.N. Moreira, N. Zanatta, H.G. Bonacorso, *Chemical Reviews* 108 (2008) 2015.
- [166] J.D. Revell, A. Ganesan, *Org. Lett.* 4 (2002) 3071.
- [167] C.J. Mathews, P.J. Smith, T. Welton, *Chem. Commun.* (2000) 1249.
- [168] P. Kubisa, *Prog. Polym. Sci.* 34 (2009) 1333.
- [169] J. Lu, F. Yan, J. Texter, *Prog. Polym. Sci.* 34 (2009) 431.
- [170] M. Eckstein, M. Villela Filho, A. Liese, U. Kragl, *Chem. Commun.* (2004) 1084.
- [171] R. Irimescu, K. Kato, *Tetrahedron Lett.* 45 (2004) 523.
- [172] Q. Zhang, H. Su, J. Luo, Y. Wei, *Green Chem.* 14 (2012) 201.
- [173] L.-F. Xiao, Q.-F. Yue, C.-G. Xia, L.-W. Xu, *J. Mol. Catal. A* 279 (2008) 230.
- [174] Y. Lin, F. Wang, Z. Zhang, J. Yang, Y. Wei, *Fuel* 116 (2014) 273.
- [175] V.H. Jadhav, H.-J. Jeong, S. Tae Lim, M.-H. Sohn, D. Wook Kim, *RSC Adv.* 2 (2012) 7120.
- [176] V. Sans, N. Karbass, M.I. Burguete, V. Compañ, E. García-Verdugo, S.V. Luis, M. Pawlak, *Chem. Eur. J.* 17 (2011) 1894.
- [177] D.W. Kim, D.Y. Chi, *Ang. Chem. Int. Ed.* 43 (2004) 483.
- [178] H. Qiu, A.K. Mallik, M. Takafuji, H. Ihara, *Chem. Eur. J.* 17 (2011) 7288.
- [179] X. Bo, J. Bai, J. Ju, L. Guo, *J. Pow. Sources* 196 (2011) 8360.
- [180] B. Tang, W. Bi, M. Tian, K.H. Row, *J. Chromatogr. B* 904 (2012) 1.
- [181] R. Abu-Reziq, D. Wang, M. Post, H. Alper, *Adv. Synth. Catal.* 349 (2007) 2145.
- [182] Y. Zhang, C. Xia, *Appl. Catal. A* 366 (2009) 141.
- [183] Y. Zhang, Y. Zhao, C. Xia, *J. Mol. Catal.* 306 (2009) 107.
- [184] A. Pourjavadi, S.H. Hosseini, R. Soleyman, *J. Mol. Catal. A* 365 (2012) 55.
- [185] J. Yuan, S. Wunder, F. Warmuth, Y. Lu, *Polymer* 53 (2012) 43.
- [186] R.B. Merrifield, *J. Am. Chem. Soc.* 85 (1963) 2149.
- [187] S.V. Ley, I.R. Baxendale, G. Brusotti, M. Caldarelli, A. Massi, M. Nesi, *IL Farmaco* 57 (2002) 321.
- [188] R.J. Booth, J.C. Hodges, *J. Am. Chem. Soc.* 119 (1997) 4882.

- [189] S.V. Ley, M. Ladlow, E. Vickerstaffe, in: P.A. Bartlett, M. Entzeroth (Eds.), *Exploiting Chemical Diversity for Drug Discovery*, The Royal Society of Chemistry, Cambridge, UK, 2006, p. 1.
- [190] G. Gelbard, *Handbook of Green Chemistry and Technology*, Blackwell Science Ltd, 2007, p. 150.
- [191] T. Dohi, K.I. Fukushima, T. Kamitanaka, K. Morimoto, N. Takenaga, Y. Kita, *Green Chem.* 14 (2012) 1493.
- [192] K.S. Lam, M. Lebl, V. Krchňák, *Chem. Rev.* 97 (1997) 411.
- [193] A. Marsh, S.J. Carlisle, S.C. Smith, *Tetrahedron Lett.* 42 (2001) 493.
- [194] P.H. Toy, K.D. Janda, *Acc. Chem. Res.* 33 (2000) 546.
- [195] B. Basu, S. Paul, *J. Catalyst.* 2013 (2013) 20.
- [196] Z. Li, A. Zhu, X. Mao, X. Sun, X. Gong, *J. Braz. Chem. Soc.* 19 (2008) 1622.
- [197] K.C. Vrancken, K. Possemiers, P. Van Der Voort, E.F. Vansant, *Colloids Surf. A: Physicochem. Eng. Aspects* 98 (1995) 235.
- [198] B. Khadilkar, S. Borkar, *Synth. Commun.* 28 (1998) 207.
- [199] J.M. French, C.A. Caras, S.T. Diver, *Org. Lett.* 15 (2013) 5416.
- [200] Y.-L. Zhong, T.K.M. Shing, *J. Org. Chem.* 62 (1997) 2622.
- [201] M. Hashmat Ali, M. Niedbalski, G. Bohnert, D. Bryant, *Synth. Commun.* 36 (2006) 1751.
- [202] P. Rattanaburi, B. Khumraksa, M. Pattarawarapan, *Tetrahedron Lett.* 53 (2012) 2689.
- [203] J.N. Moorthy, N. Singhal, K. Senapati, *Tetrahedron Lett.* 47 (2006) 1757.
- [204] S. Goswami, A.K. Mahapatra, *Tetrahedron Lett.* 39 (1998) 1981.
- [205] S.N. Kilenyi, *Comprehensive Organic Synthesis*, Pergamon, Oxford, 1991, p. 653.
- [206] H.B. Hass, M.L. Bender, *J. Am. Chem. Soc.* 71 (1949) 1767.
- [207] J.J. Li, J. Jack Li, *Name Reactions*, Springer Berlin Heidelberg, 2009, p. 515.
- [208] F. Krohnke, *Angew. Chem. Int. Ed.* 2 (1963) 380.
- [209] N. Kornblum, W.J. Jones, G.J. Anderson, *J. Am. Chem. Soc.* 81 (1959) 4113.
- [210] K. Kulangiappar, M.A. Kulandainathan, T. Raju, *Ind. Eng. Chem. Res.* 49 (2010) 6670.
- [211] G. Xu, J.P. Wu, X.M. Ai, L.R. Yang, *Chin.Chem. Lett.* 18 (2007) 643.

- [212] W.D. Paquette, R.E. Taylor, *Org. Lett.* 6 (2004) 103.
- [213] A.B. Smith, K. Basu, T. Bosanac, *J. Am. Chem. Soc.* 129 (2007) 14872.
- [214] A.B. Smith, T. Bosanac, K. Basu, *J. Am. Chem. Soc.* 131 (2009) 2348.
- [215] S. Das, A.K. Panigrahi, G.C. Maikap, *Tetrahedron Lett.* 44 (2003) 1375.
- [216] Y.L. Hu, Q.F. Liu, T.T. Lu, M. Lu, *Catal. Commun.* 11 (2010) 923.
- [217] J. Tang, J. Zhu, Z. Shen, Y. Zhang, *Tetrahedron Lett.* 48 (2007) 1919.
- [218] R.D. Patil, S. Adimurthy, *Synth. Commun.* 41 (2011) 2712.
- [219] C. Li, P. Zheng, J. Li, H. Zhang, Y. Cui, Q. Shao, X. Ji, J. Zhang, P. Zhao, Y. Xu, *Angew. Chem.* 115 (2003) 5217.
- [220] R. Patil, P. Bhoir, P. Deshpande, T. Wattamwar, M. Shirude, P. Chaskar, *Ultrason. Sonochem.* 20 (2013) 1327.
- [221] Y. Jiang, X. Chen, L. Qu, J. Wang, J. Yuan, S. Chen, X. Li, C. Qu, *Ultrason. Sonochem.* 18 (2011) 527.
- [222] M. Abaszadeh, M. Seifi, *Org. Biomol. Chem.* 12 (2014) 7859.
- [223] P.N. Kishore Babu, B. Rama Devi, P.K. Dubey, *Der. Chem. Sin.* 4 (2013) 105.
- [224] M.F. Mady, A.A. El-Kateb, I.F. Zeid, K.B. Jørgensen, *J. Chemistry* 2013 (2013) 1.
- [225] G. Cravotto, A. Procopio, M. Oliverio, L. Orio, D. Carnaroglio, *Green Chem.* 13 (2011) 2806.
- [226] A.S.Y. Lee, C.C. Kung, *J. Chin. Chem. Soc.* 44 (1997) 65.
- [227] J.M. Khurana, P.K. Sahoo, S.S. Titus, G.C. Maikap, *Synth. Commun.* 20 (1990) 1357.
- [228] R. Martínez-Palou, *Mol Divers* 14 (2010) 3.
- [229] S. Sowmiah, C.I. Cheng, Y.-H. Chu, *Curr. Org. Synth.* 9 (2012) 74.
- [230] Z. Cheng, X. Zhu, Z.L. Shi, K.G. Neoh, E.T. Kang, *Ind. Eng. Chem. Res.* 44 (2005) 7098.
- [231] L. Weng, J.-J. Yan, H.-L. Xie, G.-Q. Zhong, S.-Q. Zhu, H.-L. Zhang, E.-Q. Chen, *J. Polym. Sci. Part A: Polym. Chem.* 51 (2013) 1912.
- [232] J.E. Huheey, E.A. Keiter, R.L. Keiter, *Inorganic Chemistry: Principles of Structure and Reactivity*, Prentice Hall, New York, 1997.
- [233] M.C. Tseng, H.C. Kan, Y.H. Chu, *Tetrahedron Lett.* 48 (2007) 9085.

- [234] S.Y. Jonsson, K. Färnegårdh, J.-E. Bäckvall, *J. Am. Chem. Soc* 123 (2001) 1365.
- [235] Standard Methods for the Examination of Water and Wastewater, 20th ed. APHA-AWWA-WEF, Washington, DC, 1998.
- [236] N.E. Leadbeater, H.M. Torenius, H. Tye, *Tetrahedron* 59 (2003) 2253.
- [237] U. Boas, J. Brask, K.J. Jensen, *Chem. Rev.* 109 (2009) 2092.
- [238] C.C. Leznoff, *Acc. Chem. Res.* 11 (1978) 327.
- [239] R.N. Salvatore, C.H. Yoon, K.W. Jung, *Tetrahedron* 57 (2001) 7785.
- [240] S. Gomez, J.A. Peters, T. Maschmeyer, *Adv. Synth. Catal.* 344 (2002) 1037.
- [241] W. Karuehanon, W. Fanfuenha, A. Rujiwattra, M. Pattarawaran, *Tetrahedron Lett.* 53 (2012) 3486.
- [242] H. Liu, G.-K. Chuah, S. Jaenicke, *J. Catal.* 292 (2012) 130.
- [243] G. Cami-Kobeci, P.A. Slatford, M.K. Whittlesey, J.M.J. Williams, *Bioorg. Med. Chem. Lett.* 15 (2005) 535.
- [244] M.E. Bluhm, O. Walter, M. Döring, *J. Organomet. Chem.* 690 (2005) 713.
- [245] J. Wiedermann, K. Mereiter, K. Kirchner, *J. Mol. Catal. A: Chem.* 257 (2006) 67.
- [246] I. Marco, M. Valhondo, M. Martín-Fontecha, H. Vázquez-Villa, J.n. DelRío, A. Planas, O. Sagredo, J.A. Ramos, I.n.R. Torrecillas, L. Pardo, D. Frechilla, B.a. Benjamú, M.a.L. López-Rodríguez, *J. Med. Chem* 54 (2011) 7986–7999.
- [247] R.N. Salvatore, A.S. Nagle, K.W. Jung, *J. Org. Chem.* 67 (2002) 674.
- [248] S. Bhattacharyya, U. Pathak, S. Mathur, S. Vishnoi, R. Jain, *RSC Adv.* 4 (2014) 18229.
- [249] T. Ikawa, Y. Fujita, T. Mizusaki, S. Betsuin, H. Takamatsu, T. Maegawa, Y. Monguchi, H. Sajiki, *Org. Biomol. Chem.* 10 (2012) 293.
- [250] I. Sorribes, K. Junge, M. Beller, *J. Am. Chem. Soc.* 136 (2014) 14314.
- [251] Y. Ju, R.S. Varma, *Green Chem.* 6 (2004) 219.
- [252] F.I. McGonagle, D.S. MacMillan, J. Murray, H.F. Sneddon, C. Jamieson, A.J.B. Watson, *Green Chem.* 15 (2013) 1159.
- [253] A.F. Abdel-Magid, K.G. Carson, B.D. Harris, C.A. Maryanoff, R.D. Shah, *J. Org. Chem.* 61 (1996) 3849.
- [254] A.F. Abdel-Magid, S.J. Mehrman, *Org. Process Res. Dev.* 10 (2006) 971.

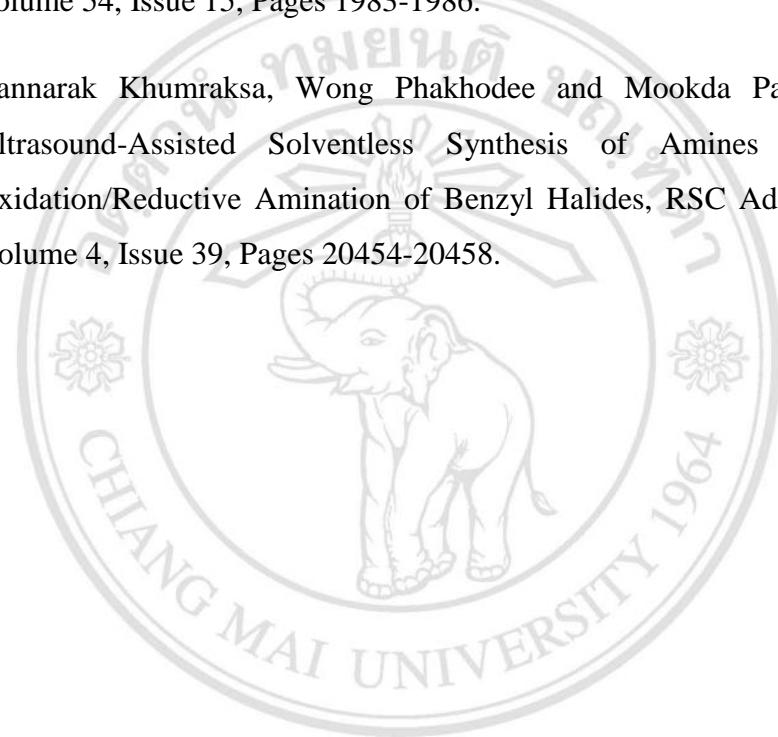
- [255] E.M. Dangerfield, C.H. Plunkett, A.L. Win-Mason, B.L. Stocker, M.S.M. Timmer, *J. Org. Chem.* 75 (2010) 5470.
- [256] A.V. Panfilov, Y.D. Markovich, A.A. Zhirov, I.P. Ivashev, A.T. Kirsanov, V.B. Kondrat'ev, *Pharm. Chem. J.* 34 (2004) 371.
- [257] A.V. Panfilov, Y.D. Markovich, I.P. Ivashev, A.A. Zhirov, A.F. Eleev, V.K. Kurochkin, A.T. Kirsanov, G.V. Nazarov, *Pharm. Chem. J.* 34 (2000) 76.
- [258] C.F. Lane, *Synthesis* 3 (1975) 135.
- [259] R.F. Borch, *Org. Synth.* 6 (1988) 499.
- [260] P.V. Ramachandran, P.D. Gagare, K. Sakavuyi, P. Clark, *Tetrahedron Lett.* 51 (2010) 3167.
- [261] H. Alinezhad, M. Tajbakhsh, F. Salehian, K. Fazli, *Tetrahedron Lett.* 50 (2009) 659.
- [262] H. Alinezhad, Z. Tollabian, *Bull. Korean Chem. Soc.* 31 (2010) 1927.
- [263] H. Alinezhad, M. Tajbakhsh, R.E. Ahangar, *Monatsh. Chem.* 139 (2008) 21.
- [264] H. Alinezhad, M. Tajbakhsh, N. Hamidi, *Turk. J. Chem.* 34 (2010) 307.
- [265] H. Alinezhad, M. Tajbakhsh, N. Mahdavi, *Synth. Commun.* 40 (2010) 951.
- [266] R.S. Varma, R. Dahiya, *Tetrahedron* 54 (1998) 6293.
- [267] L. Blackburn, R.J.K. Taylor, *Org. Lett.* 3 (2001) 1637.
- [268] I.A. Khan, A.K. Saxena, *J. Org. Chem.* 78 (2013) 11656.
- [269] P.G. Mandhane, R.S. Joshi, D.R. Nagargoje, C.H. Gill, *Tetrahedron Lett.* 51 (2010) 1490.
- [270] M. Chtourou, R. Abdelhédi, M.H. Friha, M. Trabelsi, *Ultrason. Sonochem.* 17 (2010) 246.
- [271] M.J. Lo Fiego, M.A. Badajoz, C. Domini, A.B. Chopra, M.T. Lockhart, *Ultrason. Sonochem.* 20 (2013) 826.
- [272] B. Khumraksa, W. Phakhodee, M. Pattarawarapan, *Tetrahedron Lett.* 54 (2013) 1983.
- [273] R.J. Gritter, G.D. Dupre, T.J. Wallace, *Nature* 202 (1964) 179.
- [274] L.-H. Huang, Q. Wang, Y.-C. Ma, J.-D. Lou, C. Zhang, *Synth. Commun.* 41 (2011) 1659.
- [275] S.E. Davis, M.S. Ide, R.J. Davis, *Green Chem.* 15 (2013) 17.

- [276] Z. Hu, L. Ma, J. Xie, H. Du, W.W.Y. Lam, T.-C. Lau, *New J. Chem.* 37 (2013) 1707.
- [277] S.E. Martín, D.o.F. Suárez, *Tetrahedron Lett.* 43 (2002) 4475.
- [278] C. Döbler, G.M. Mehltretter, U. Sundermeier, M. Eckert, H.-C. Militzer, M. Beller, *Tetrahedron Lett.* 42 (2001) 8447.
- [279] T. Iwahama, Y. Yoshino, T. Keitoku, S. Sakaguchi, Y. Ishii, *J. Org. Chem.* 65 (2000) 6502.
- [280] V.J. Traynelis, W.L. Hergenrother, *J. Am. Chem. Soc.* 86 (1964) 298.
- [281] Chunbao Li, Yanli Xu, Ming Lu, Zhuxuan Zhao, Lanjun Liu, Zheyuan Zhao, Yi Cui, Pengwu Zheng, Xioujie Ji, G. Gao, *Synlett* 12 (2002) 2041.
- [282] K. Omura, A.K. Sharma, D. Swern, *J. Org. Chem.* 41 (1976) 957.
- [283] J.D. More, N.S. Finney, *Org. Lett.* 4 (2002) 3001.
- [284] J. Einhorn, C. Einhorn, F. Ratajczak, J.-L. Pierre, *J. Org. Chem.* 61 (1996) 7452.
- [285] L. De Luca, G. Giacomelli, S. Masala, A. Porcheddu, *J. Org. Chem.* 68 (2003) 4999.
- [286] K. Paulvannan, R. Hale, D. Sedehi, T. Chen, *Tetrahedron* 57 (2001) 9677.
- [287] A. Albini, *Synthesis* 1993 (1993) 263.
- [288] B. Hinzen, S.V. Ley, *J. Chem. Soc., Perkin Trans. 1* (1997) 1907.
- [289] T. Welton, *Chem. Rev.* 99 (2009) 2071.
- [290] Z. Duan, Y. Gu, Y. Deng, *Catal. Commun.* 7 (2006) 651.
- [291] R.X. Ren, J.X. Wu, *Org. Lett.* 3 (2001) 3727.
- [292] N. Gupta, G.L. Kad, J. Singh, *J. Mol. Catal. A* 302 (2009) 11.
- [293] H.H. Wu, J. Sun, F. Yang, J. Tang, M.Y. He, *Chin. J. Chem.* 22 (2004) 619.
- [294] A. Kumar, P.K. Sharma, K.K. Banerji, *J. Phys. Org. Chem.* 15 (2002) 721.
- [295] M.M. Dharman, H.Y. Ju, H.L. Shim, M.K. Lee, K.H. Kim, D.W. Park, *J. Mol. Catal. A* 303 (2009) 96.
- [296] M. Mamparambath Dharman, H.J. Choi, S.W. Park, D.W. Park, *Top. Catal.* 53 (2010) 462.
- [297] C. Wakai, A. Oleinikova, M. Ott, H. Weingärtner, *J. Phys. Chem. B* 109 (2005) 17028.
- [298] M. Yasuda, Y. Onishi, M. Ueba, T. Miyai, A. Baba, *J. Org. Chem.* 66 (2001) 7741.

- [299] M. Yasuda, T. Saito, M. Ueba, A. Baba, *Ang. Chem. Int. Edit.* 43 (2004) 1414.
- [300] A. Sun, Y. Nie, C. Li, Z. Wang, *Chin. J. Chem. Eng.* 16 (2008) 151.
- [301] N. Dimitratos, J.A. Lopez-Sanchez, D. Morgan, A.F. Carley, R. Tiruvalam, C.J. Kiely, D. Bethell, G.J. Hutchings, *Phys. Chem. Chem. Phys.* 11 (2009) 5142.
- [302] E. Nowicka, J.P. Hofmann, S.F. Parker, M. Sankar, G.M. Lari, S.A. Kondrat, D.W. Knight, D. Bethell, B.M. Weckhuysen, G.J. Hutchings, *Phys. Chem. Chem. Phys.* 15 (2013) 12147.
- [303] J. Dharmaraja, K. Krishnasamy, M. Shanmugam, *E-J Chem.* 5 (2008) 754.
- [304] E. Cao, M. Sankar, E. Nowicka, Q. He, M. Morad, P.J. Miedziak, S.H. Taylor, D.W. Knight, D. Bethell, C.J. Kiely, A. Gavrilidis, G.J. Hutchings, *Catal. Today* 203 (2013) 146.
- [305] G.W. Kabalka, M. Varma, R.S. Varma, *J. Org. Chem.* 51 (1986) 2386.
- [306] Y. Yoshida, Y. Sakakura, N. Aso, S. Okada, Y. Tanabe, *Tetrahedron* 55 (1999) 2183.
- [307] L. De Luca, G. Giacomelli, A. Porcheddu, *Org. Lett.* 4 (2002) 553.
- [308] R. Appel, *Angew. Chem. Int. Ed. Engl.* 14 (1975) 801.
- [309] A.R. Hajipour, M. Mostafavi, A.E. Ruoho, *Org. Prep. Proc. Int.* 41 (2009) 87.
- [310] E. Årstad, A.G.M. Barrett, B.T. Hopkins, J. Köbberling, *Org. Lett.* 4 (2002) 1975.
- [311] P.J. Garegg, *Pure Appl. Chem.* 56 (1984) 845.
- [312] P.J. Garegg, T. Regberg, J. Stawinski, R. Stromberg, *J. Chem. Soc., Perkin Trans. 2* (1987) 271.
- [313] E.V. Matveeva, I.L. Odintsev, V.A. Kozlov, A.S. Shaplov, T.A. Mastryukova, *Tetrahedron Lett.* 47 (2006) 7645.
- [314] K. Tangdenpaisal, W. Phakhodee, S. Ruchirawat, P. Ploypradith, *Tetrahedron* 69 (2013) 933.

LIST OF PUBLICATIONS

- 1) Bannarak Khumraksa, Wong Phakhodee, Mookda Pattarawarapan,
Rapid Oxidation of Organic Halides with *N*-methyl Morpholine *N*-oxide in
an Ionic Liquid under Microwave Irradiation, *Tetrahedron Letters*, 2013,
Volume 54, Issue 15, Pages 1983-1986.
- 2) Bannarak Khumraksa, Wong Phakhodee and Mookda Pattarawarapan,
Ultrasound-Assisted Solventless Synthesis of Amines by *in situ*
Oxidation/Reductive Amination of Benzyl Halides, *RSC Advances*, 2014,
Volume 4, Issue 39, Pages 20454-20458.



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