

## REFERENCES

1. Andrew, S. and Clayton, H.H. *Introduction to organic chemistry*. p.69: **1976**.
2. Ferman, A. C. and Pradip, K. M. *Co(III)-alkylperoxo complexes: syntheses, structure-reactivity correlations, and use in the oxidation of hydrocarbons*, *Acc. Chem. Res.* **2000**, 33, 539-545.
3. Hagens, J. *Industrial catalysis*. P.8: **1980**.
4. Shilov, A. E. *Activation of saturated hydrocarbons by transition metal complexes*, **1984**, p. 62, 74.
5. George, W. P. and Steven, D. I. *Homogeneous catalysis*. 2<sup>nd</sup> edition. p.242: **1992**.
6. Grummitt, O. *Organic syntheses*. p. 807: **1955**.
7. Geletii, Y. V.; Lavrushko, V. V. and Lubimava, G. V. *Oxidation of saturated hydrocarbons by hydrogen peroxide in pyridine solution catalysed by copper and iron perchlorates*, *J. Chem. Soc.* **1988**, 936-937.
8. Sarneski, J. E.; Michos, D.; Thorp, H.H.; Didiuk, M.; Poon, T.; Blewitt, J.; Brudvig, G. W. and Crabtree, R. H. *Alkyl hydroperoxide oxidation of alkanes and alkenes with a highly active Mn catalyst*, *Tetrahedron Lett.* **1991**, 32, 1153-1156.
9. Mario, B.; Antonino, M. and Giorgio, R. *Ruthenium-catalyzed oxygenation of saturated hydrocarbons by t-butyl hydroperoxide*, *J. Mol. Catal.* **1992**, 77, 283-288.
10. Muzart, J. and Abdelaziz, N. A. *Chromium(VI)-catalyzed oxidation of adamantine by tert-butyl hydroperoxide*, *J. Mol. Catal.* **1993**, 84, 15-19
11. Barton, D. H. R.; Beviere, S. D. and Hill, D. R. *The functionalization of saturated hydrocarbons Part XXIX Application of tert-butyl hydroperoxide and dioxygen using soluble Fe(III) and Cu(II) chelates*, *Tetrahedron*, **1994**, 50, 2665-2670.
12. Pralhad, A. G.; Gopal, L. T. and Sheo, S. *Oxidation of cyclohexane by tert-butyl hydroperoxide catalyzed by manganese(II) N,N'-ethylene*

- bis(salicylideneaminato) and analogous complexes, J. Mol. Catal. A: Chemical, 1996, 113, 423-425.*
13. Motowo, Y.; Torao, I. and Takamichi, Y. *Synthesis of mixed-ligand ruthenium(III) complex with a terpyridine or tris(pyrazoly)methane and bidentate ligand: Their Application for catalytic hydroxylation of alkanes, Inorg. Chem. Commun., 1998, 1, 299-301.*
14. Ullf, S. and Ricardo, P. *Iron(III) and copper(II) catalysed cyclohexane oxidation by molecular oxygen in the presence of tert-butyl hydroperoxide, J. Mol. Catal. A: Chemical, 1998, 257-262.*
15. Park, O. S.; Nam, S. S.; Kim, S. B. and Lee, K. W. *Gif-KRICT biomimic oxidation of cyclohexane: The influence of metal oxides, Bull. Korean Chem. Soc., 1999, 20, 49-52.*
16. Jame, K. B.; Susan, M. and Anthony, F. M. *Oxidation of adamantane by palladium acetate systems, Inorg. Chim. Acta, 1999, 294, 99-102.*
17. Masahiro, F.; Qiang, X.; Yoshie, S. and Tetsuhiko, K. *Oxidation of alkanes by TBHP in the presence of soluble titanium complexes, J. Mol. Catal. A: Chemical, 1999, 142, 77-84.*
18. Hui, T.; Chengyu, S.; Minren, L. and Ayusman, S. *Cobalt porphyrin-catalyzed alkane oxidation using dioxygen as oxidant, Inorg. Chim. Acta, 2000, 300-302, 1109-1111.*
19. Kirk-Othmer. *Encyclopedia of chemical technology, 2<sup>nd</sup> ed., 1968, 473-496.*
20. Fieser, L. F. and Williamson, K. L. *Organic experiments, 7<sup>th</sup> ed., 1992, 54*
21. Tietze, L. F. and Eicher, T. H. *Reaction and syntheses in the organic chemistry laboratory, 1989, 41, 51, 119.*
22. Muzart, J. *Chromium-catalyst oxidation in organic synthesis, Chem. Rev. 1992, 92, 113-140.*
23. Karla, B.; Kovaos, O.; Gerlinde, L.; Makhoul, M.; Pritzkow, W. and Tieu, D. T. *Chromium(III) compounds as catalysts for hydrocarbon oxidation and hydroperoxide decomposition, J. prakt. Chemie. 1989, 331, 771-777.*
24. Takai, T.; Hata, E.; Yamada, T. and Mukaiyama, T. *Aerobic epoxidation of olefinic compounds catalyzed by Tris(1,3-diketonate)iron(III), Bull. Chem. Soc. Jpn. 1991, 64, 2513-2518.*

25. Nakamoto, K. *Infrared spectra of inorganic and coordination compound*. 192: 1970.
26. Silverstein, R. M. and Francis, X. *Spectrometric identification of organic compounds*. 6<sup>th</sup> edition. p.71: 1998.
27. Songsangcharoen, N. *Selectivity oxidation of hydrocarbon catalyzed by soluble transition metal-complexes*, Master Degree of Science, 2003, Program of Petrochemistry and Polymer Science, Faculty of Science, Chulalongkorn University.
28. Can-Cheng, G.; Xiao-Qin, L.; Qaing, L.; Ming-Fu, C. and Xiao-Bing, Z. *Studies of simple  $\mu$ -oxo-bisiron(III)porphyrin as catalyst of cyclohexane oxidation with air in absence of cocatalysts or coreductnts*, *J. Mol. Catal. A: Chemical*, 2003, 192, 289-294.
29. Besson, M.; Andy, B.; Pierre, G.; Gleksander, K.; Anne, P.; and Steve, T. *Oxidation with air of cyclohexanone to carboxylic diacids on carbon catalyst*, *Topics in catalysis*, 2000, 13, 253-257.
30. Crezee, E.; Barendregt, A.; Kapteijn, F. and Moulijn, J. A. *The selective oxidation of cyclohexane using carbon coated monolithic as catalysts*, *Catalysis today*, 2001, 69, 283-290.
31. Barton, D. H. R.; Warinthorn, C. and Doller, D. *The Functionalisation of saturated hydrocarbons Part XXI. The Fe(III) catalyzed and the Cu(II)-catalyzed oxidation of saturated hydrocarbons by hydrogen peroxide: A comparative study*, *Tetrahedron*, 1992, 48, 2895-2910.
32. Chavasiri, W. and Inpornvichitr, T. unpublished results.
33. Fossey, J.; Lefort, D.; Massoudi, M. and Nedelec, J. Y. *Regioselectivity and stereoselectivity of hydroxylation hemolytic of hydrocarbons with perbenzoic acid*, *Can. J. Chem.* 1985, 63, 678-680.
34. Brown, R. B., Jr. and Hill, C. L. *Catalytic homogeneous functionalization of adamantane. Influence of electronic and structural features of the metalloporphyrin catalyst on atom transfer selectivity (oxygenation versus azidification/halogination)*, *J. Org. Chem.* 1988, 53, 5762-5768.
35. Goldstein, A. S. and Drago, R. S. *Oxidation of alkanes by cobalt(II) salt of weakly coordinating anions*, *Inorg. Chem.* 1991, 30, 4506-4510.

36. Halligudi, S. B.; Alekar, N.A.; Rajani. R.; Gopinathan, S. and Gopinathan, C. *Molybdovanadophosphoric acid catalyzed oxidation of hydrocarbons by H<sub>2</sub>O<sub>2</sub> to oxygenates, Catalysis today*, **2001**, 41, 256-260.
37. Barton, D. H. R. and Li, T. *The selective functionalization of saturated hydrocarbons Part 43. Modified Gif oxidation in acetonitrile, Tetrahedron*, **1998**, 54, 1735-1744.
38. Barton, D. H. R.; Boivin, J.; Ozbalik, N. and Kathy, M.S. *Selective oxidation of saturated hydrocarbons at secondary positions, Tetrahedron Lett.* **1984**, 25, 4219-4222.
39. Murahashi, S. I.; Naota, T. and Komiya, N. *Metalloporphyrin-Catalyzed oxidation of alkanes with molecular oxygen in the presence of acetaldehyde, Tetrahedron Lett.* **1995**, 36, 8059-8062.
40. Gopal, L. T.; Pralhad, A.G. and Sheo, S. *Oxidation of alkanes by tert-butyl hydroperoxide catalyzed by polynuclear manganese Schiff base complexes, J. Mol. Catal. A: Chemical*, **1997**, 121, 17-23.
41. Gerlinde, L.; Pritzkow, W.; Tieu, D. T. and Voerckel, V. *Studies on the decomposition of alkyl hydroperoxides by different catalysts, J. prakt. Chemie*. **1988**, 330, 933-946.
42. Barton, D. H. R. and Chavasiri, W. *The selectivity functionalization of saturated hydrocarbons. Part 36. Stereoselectivity studies of Gif-type reactions, Tetrahedron*, **1997**, 53, 2997-3004.
43. Barton, D. H. R. and Chabot, B. M. *The selectivity functionalization of saturated hydrocarbons. Part 37. Utilization of a new oxidant :Bis(trimethylsilyl) peroxide, Tetrahedron*, **1997**, 53, 487-510.
44. Engel, P. S.; Chae, W.; Baughman, S. A.; Marschke, G. E.; Lewis, E. S.; Timberlake, J.W. and Luedtke, A.E. *A product study of 1-adamantyl and 1-bicyclo[2.2.2]octyl radicals in hydrocarbon solvents. An unusually large hydrogen isotope effect, J. Am. Chem. Soc.* **1983**, 105, 5030-5034.
45. Groves, J. T.; Nemo, T. E. and Myers, R. S. *Hydroxylation and epoxidation catalyzed by iron-porphine complexes. Oxygen transfer from iodosylbenzene, J. Am. Chem. Soc.* **1983**, 105, 5030-5034.
46. Barton, D. H. R.; Halley, F.; Ozbalik, N.; Schmitt, M.; Young, E. and Balavoine, G. *Functionalization of saturated hydrocarbons. 14. Further*

- studies on the mechanism of Gif-type systems, J. Am. Chem. Soc.* **1989**, 111, 7144-7149.
47. Barton, D. H. R. and Tingsheng, L. *The selective functionalization of saturated hydrocarbons. Part 43. Modified Gif oxidation in acetonitrile, Tetrahedron*, **1998**, 54, 1735-1744.
48. Carter, M.K. *Catalytic air oxidation of ambient temperature hydrocarbons, J. Mol. Catal. A: Chemical*, **2003**, 200, 191-203.
49. Punniyamurthy, T. and Vellusamy, S. *Copper(II)-catalyzed C-H oxidation of alkylbenzenes and cyclohexane with hydrogen peroxide, Tetrahedron Lett.* **2003**, 44, 8955-8957.
50. Kumar, A.; Amit, K. and Gopal, S. M. *Covalantly bonded Schiff base cobalt complex catalyst for the selective oxidation of linear alkanes using molecular oxygen, J. Mol. Catal. A: Chemical*, **2003**, 201, 179-188.
51. Yamanaka, I. and Otsuka, K. *Catalysis of Sm<sup>3+</sup> for the oxidation of alkanes with O<sub>2</sub> in the liquid phase, J. Mol. Catal. A: Chemical*, **1995**, 95, 115-120.
52. Barton, D. H. R.; Beck, A. H. and Taylor, D. K. *The functionalization of saturated hydrocarbons. Part 31. The Fe(PA)<sub>3</sub> and [Fe(TPA)Cl<sub>2</sub>]ClO<sub>4</sub> catalyzed oxidations of saturated hydrocarbons by hydrogen peroxide: A comparative mechanistic study, Tetrahedron*, **1995**, 51, 5245-5254.

## VITA

Miss. Julaluk Phunnoi was born on December 1, 1979 in Khon kaen, Thailand. She graduated with Bachelor's Degree in Chemistry from the Faculty of Science and Technology, Thammasat University in 2002. She continued her study in the Program Master degree of Petrochemistry and Polymer Science, Faculty of Science, Chulalongkorn University in 2002 and completed the Master Degree of Petrochemistry and Polymer Science in April, 2004.

Her present address is 19 Moo.10 Ban fhang, Khonkaen, Thailand 40270, Tel. 0-4342-1037.

