

List of Publications

Iwao Ojima

Book Edited

1. Iwao Ojima, "Catalytic Asymmetric Synthesis", VCH Publishers, New York, 1993.
2. G. I. Georg, T. Chen, I. Ojima, and D. M. Vyas (Eds.), "*Taxane Anticancer Agents: Basic Science and Current Status*", ACS Symp. Series 583; American Chemical Society, Washington, D. C., 1995.
3. I. Ojima, J. McCarthy, and J. T. Welch (Eds.), "*Biomedical Frontiers of Fluorine Chemistry*", ACS Symp. Series 639; The American Chemical Society, Washington, D. C., 1996.
4. Iwao Ojima, "Catalytic Asymmetric Synthesis, Second Edition", John Wiley & Sons, New York, 2000.
5. Iwao Ojima, Gregory D. Vite, Karh-Heinz Altmann (Eds.), "*Anticancer Agents: Frontiers in Cancer Chemotherapy*", ACS Symp. Series 796, American Chemical Society, Washington, D. C., 2001.
6. Iwao Ojima (Volume Editor), "*Volume 10, Applications to Organic Synthesis I*" in "*Comprehensive Organometallic Chemistry III*" Robert H. Crabtree, Michael P. Mingos (Eds. in-Chief), Elsevier, Oxford, 2006.
7. Iwao Ojima, "Fluorine in Medicinal Chemistry and Chemical Biology", Wiley-Blackwell, Chichester (2009).
8. Iwao Ojima, "Catalytic Asymmetric Synthesis, Third Edition", John Wiley & Sons, New York (2010).

Guest Editor for Special Journal Issues

1. Current Topics in Medicinal Chemistry, Volume 7, Number 5 (2007), "Drug-Resistant Tuberculosis – A Challenge in Chemotherapy".
2. Accounts of Chemical Research, Volume 41, Number 1 (2008), "Modern Molecular Approaches to Drug Design and Discovery".
3. Journal of Medicinal Chemistry, Volume 51, Number 9 (2008), Mini-Perspective, "Modern Natural Products Chemistry and Drug Discovery".

Articles

1. "Reactions of Diarylphosphines, Their Oxides and Sulfides with Isothiocyanates and Thiocyanic Acid", I. Ojima, K. Akiba, and N. Inamoto, *Bull. Chem. Soc., Japan*, **42**, 2975 (1969).
2. "A Novel Series of Transition-metal Chelates of Diphenylphosphino thioylthiourea Anion", I. Ojima, T. Iwamoto, T. Onishi, N. Inamoto, and K. Tamaru, *Chem. Commun.*, 1501 (1969).
3. "A New Route to Metal Chelates of Dimethyldithiocarbamate and Their Far Infrared Spectra", I. Ojima, T. Onishi, T. Iwamoto, N. Inamoto, and K. Tamaru, *Inorg. Nucl. Chem. Lett.*, **6**, 65 (1970).
4. "1,2-Cycloaddition of Phosphinothioyl and Sulfonyl Isothiocyanates with Carbodiimides", I. Ojima and N. Inamoto, *Chem. Commun.*, 1629 (1970).
5. "Syntheses of a New Series of Transition Metal Chelates of Diphenyl phosphinothioylthiourea Anion", I. Ojima, T. Onishi, T. Iwamoto, N. Inamoto, and K. Tamaru, *Bull. Chem. Soc. Japan*, **44**, 2150 (1971).
6. "Intramolecular Reactions of α - and β -Allylthioalkylcarbenes", K. Kondo and I. Ojima, *Chem. Commun.*, 62 (1972).
7. "Intramolecular Cycloadditions of α - and β -Allylthioalkyl Diazoalkanes", K. Kondo and I. Ojima, *Chem. Commun.*, 63 (1972).
8. "Intramolecular Formation of Ylides from Carbenes Bearing Sulfide Linkages at the γ -Position", K. Kondo and I. Ojima, *Chem. Lett.*, 119 (1972).
9. "Reactions of Carbenes Bearing Sulfide Linkages at the γ -Position", K. Kondo and I. Ojima, *Chem. Commun.*, 860 (1972).
10. "Cycloadditions of Diazoalkanes to Vinyl and Allyl Sulfides Systems", K. Kondo and I. Ojima, *Chem. Lett.*, 771 (1972).
11. "Rhodium Complex Catalyzed Hydrosilylation of Carbonyl Compounds", I. Ojima, M. Nihonyanagi, and Y. Nagai, *Chem. Commun.*, 938 (1972).
12. "Reduction of Carbonyl Compounds with Various Hydrosilane-Rhodium(I) Complex Combinations", I. Ojima, T. Kogure, M. Nihonyanagi, and Y. Nagai, *Bull. Chem. Soc. Japan*, **45**, 3506 (1972).
13. "Stereoselective Reduction of Ketones with Hydrosilane-Rhodium(I) Complex Combinations", I. Ojima, M. Nihonyanagi, and Y. Nagai, *Bull. Chem. Soc. Japan*, **45**, 3722 (1972).
14. "Selective Reduction of α,β -Unsaturated Terpene Carbonyl Compounds Using Hydrosilane-Rhodium(I) Complex Combinations", I. Ojima, T. Kogure, and Y. Nagai, *Tetrahedron Lett.*, 5035 (1972).

15. "Acid Catalyzed Ring Opening Reactions of Episufoxides", K. Kondo, A. Negishi, and I. Ojima, *J. Amer. Chem. Soc.*, **94**, 5786 (1972).
16. "Intramolecular Participation of Sulfide Linkage in the Reactivity of Carbenes and Diazoalkanes. I. Alkylcarbenes and Diazoalkanes Bearing Alkylthio, Arylthio and Allylthio Groups on α -Carbon", I. Ojima and K. Kondo, *Bull. Chem. Soc. Japan*, **46**, 1539 (1973).
17. "Chemical Evidence of the Existence of $p\pi$ - $d\pi$ Interaction between the Unsaturated Bond and Sulfur Atom in Allyl and Vinyl Sulfide Systems", I. Ojima and K. Kondo, *Bull. Chem. Soc. Japan*, **46**, 2571 (1973).
18. "Reactions of Diphenylphosphinothioyl Isothiocyanate and Related Compounds with Some Nucleophiles and Carbodiimides", I. Ojima, K. Akiba, and N. Inamoto, *Bull. Chem. Soc. Japan*, **46**, 2559 (1973).
19. "A Novel Route to Silylthioethers", I. Ojima, M. Nihonyanagi, and Y. Nagai, *J. Organometal. Chem.*, **50**, C26 (1973).
20. "Asymmetric Reduction of Ketones via Hydrosilylation Catalyzed by a Rhodium(I) Complex with Chiral Phosphine Ligands", I. Ojima, T. Kogure, and Y. Nagai, *Chem. Lett.*, 541 (1973).
21. "Hydrosilane-Rhodium(I) Complex Combinations as Silylating Agents of Alcohols", I. Ojima, T. Kogure, M. Nihonyanagi, H. Kono, S. Inaba, and Y. Nagai, *Chem. Lett.*, 501 (1973).
22. "A Convenient Route to Aminosilanes Using Hydrosilane-Rhodium(I) Complex Combinations", H. Kono, I. Ojima, and Y. Nagai, *Org. Prep. Proc. Internat.*, **5**, 135 (1973).
23. "Action of Tris(triphenylphosphine)chlororhodium on Polyhydrosilanes", I. Ojima, S. Inaba, and Y. Nagai, *J. Organometal. Chem.*, **55**, C7 (1973).
24. "Reactions of Polyhydrosilanes with Alcohols Catalyzed by Tris(triphenylphosphine)chloro-rhodium", I. Ojima, S. Inaba, T. Kogure, M. Matsumoto, H. Matsumoto, H. Watanabe, and Y. Nagai, *J. Organometal. Chem.*, **55**, C4 (1973).
25. "A Novel Method for the Reduction of Schiff Bases Using Catalytic Hydrosilylation", I. Ojima, T. Kogure, and Y. Nagai, *Tetrahedron Lett.*, 2475 (1973).
26. "A Novel Route to Formamides and Their Derivatives. Reduction of Isocyanates via Hydrosilylation Catalyzed by Palladium", I. Ojima, S. Inaba, and Y. Nagai, *Tetrahedron Lett.*, 4363 (1973).
27. "Reactions of Triethylsilyl Thiophenoxide with Ketones Having Electron withdrawing Group on α -Carbon", I. Ojima and Y. Nagai, *J. Organometal. Chem.*, **57**, C42 (1973).
28. "A Novel Route to 2-Carbamoylcycloalkanones by the Addition Reaction of Silyl Enol Ethers to Isocyanates", I. Ojima, S. Inaba, and Y. Nagai, *Tetrahedron Lett.*, 4271 (1973).
29. "The Stereochemistry of the Addition of Hydrosilanes to Alkyl Acetylenes Catalyzed by Tris(triphenylphosphine)-chlororhodium", I. Ojima, M. Kumagai, and Y. Nagai, *J. Organometal. Chem.*, **66**, C14 (1974).
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31. "Syntheses of *N*-Silylformamidines by the Hydrosilylation of Carbodiimides", I. Ojima, S. Inaba, and Y. Nagai, *J. Organometal. Chem.*, **72**, C11 (1974).
32. "Asymmetric Reduction of α -Keto Esters via Hydrosilylation Catalyzed by a Rhodium(I) Complex with Chiral Phosphine Ligands", I. Ojima, T. Kogure, and Y. Nagai, *Tetrahedron Lett.*, 1889 (1974).
33. "A Facile Synthesis of *N*-(*p*-Toluenesulfonyl)-2-oxoalkanecarbonamides by the Reaction of Silyl Enol Ethers with *p*-Toluenesulfonyl Isocyanate", I. Ojima, S. Inaba, and Y. Nagai, *Chem. Lett.*, 1069 (1974).
34. " α -Silylpropionitriles: A New Reagent for the Synthesis of α,β -Unsaturated Nitriles", I. Ojima, M. Kumagai, and Y. Nagai, *Tetrahedron Lett.*, 4005 (1974).
35. "Reaction of Trimethylsilyl Cyanide with Isocyanates", I. Ojima, S. Inaba, and Y. Nagai, *Chem. Commun.*, 826 (1974).
36. "The Intramolecular Participation of Sulfide Linkage on the Reactivity of Carbenes and Diazoalkanes. II. Alkylcarbenes and Diazoalkanes Bearing Arylthio and Allylthio Groups on β -Carbon", K. Kondo and I. Ojima, *Bull. Chem. Soc. Japan*, **48**, 1490 (1975).
37. "Selective and Asymmetric Reductions of Carbonyl Compounds Using Hydrosilylation Catalyzed by Rhodium(I) Complexes", I. Ojima, In "*Organotransition Metal Chemistry*"; Y. Ishii and M. Tsutsui (Eds.); Plenum Press, New York, 1975, pp 255-264.
38. "The Formation of Silylrhodium Complexes by Oxidative Addition of Hydrosilanes to Hydrido-tetrakis(triphenylphosphine)rhodium(I). A Homogeneous Catalyst for Hydrosilylation", H. Kono, N. Wakao, I. Ojima, and Y. Nagai, *Chem. Lett.*, 189 (1975).
39. "Double Asymmetric Reduction" of (-)Menthyl Benzoylformate Using Catalytic Hydrosilylation", I. Ojima and Y. Nagai, *Chem. Lett.*, 191 (1975).
40. "Reduction of Carbonyl Compounds via Hydrosilylation I. Hydrosilylation of Carbonyl Compounds Catalyzed by Tris(triphenylphosphine)chlororhodium", I. Ojima, M. Nihonyanagi, T. Kogure, M. Kumagai, S. Horiuchi, K. Nakatsugawa, and Y. Nagai, *J. Organometal. Chem.*, **94**, 449 (1975).

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52. "3-TMS-cyclopentene-1. A New Reagent for the Synthesis of Cyclopentene Derivatives", I. Ojima, M. Kumagai, and Y. Miyazawa, *Tetrahedron Lett.*, 1385 (1977).
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54. "Novel and Convenient Route to Substituted Succinates. The Dimerization of Ketene Silyl Acetals Promoted by Titanium Tetrachloride", S. Inaba and I. Ojima, *Tetrahedron Lett.*, 2009 (1977).
55. "New and effective Route to β -Lactams. The Reaction of Ketene Silyl Acetals with Schiff Bases Promoted by Titanium Tetrachloride", I. Ojima, S. Inaba, and K. Yoshida, *Tetrahedron Lett.*, 3643 (1977).
56. "Effective Homogeneous Hydrogenation of α -Keto Esters Catalyzed by Neutral Rhodium(I) Complexes with Phosphine Ligands and Application to the Asymmetric Synthesis of Lactates", I. Ojima, T. Kogure, and K. Achiwa, *J. Chem. Soc., Chem. Commun.*, 428 (1977).
57. "Catalytic Asymmetric Synthesis of *R*-(-)- and *S*-(+)-Pantolactone", K. Achiwa, T. Kogure, and I. Ojima, *Tetrahedron Lett.*, 4431 (1977).
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82. "A Facile Synthesis of trans- β -Trifluoromethylstyrene, trans-2,3,4,5,6-Pentafluorostilbene and Their Derivatives", T. Fuchikami, M. Yatabe, and I. Ojima, *Synthesis*, 365 (1981).
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89. "Direct Conversion of Allylic Alcohols into *N*-Acyl- α -amino Acids by Catalytic Amidocarbonylation by Means of Homogeneous Binary Systems", K. Hirai, Y. Takahashi and I. Ojima, *Tetrahedron Lett.*, **23**, 2491 (1982).
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99. "Novel Approaches to the Chiral Synthesis of Oligopeptides (I). Asymmetric Hydrogenation and β -Lactam Method", I. Ojima, N. Yoda, R. Abe, M. Yatabe, N. Hatanaka and M. Yamashita in "*Peptide Chemistry 1982*"; S. Sakakibara (Ed.); Protein Research Foundation, 1983, pp 29-34.
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104. "New Aspects of Transition Metal Complex Catalyzed Carbonylations", I. Ojima, T. Fuchikami and K. Hirai in "*New Frontiers in Organometallic and Inorganic Chemistry*"; Y.-Z. Huang, A. Yamamoto and B.-T. Teo (Eds.); Science Press, Beijing, 1984, pp 169-178.
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List of Patents and Patent Applications

Iwao Ojima

(a) Patents and Patent Applications in U. S. A. and European Countries

1. (i) "Process for producing silylether", Y. Nagai, I. Ojima, **U.S. Pat.** 3856843.
 (ii) "Procede pour produire des silylether", Y. Nagai, I. Ojima, **French Pat.** 7321542.
2. "Process for producing alkoxyasilane", Y. Nagai, I. Ojima, T. Kogure, **U.S. Pat.** 3846463.
3. "Process for producing silylthioethers", Y. Nagai, I. Ojima, **U.S. Pat.** 3856842.
4. "Process for producing a substituted organosilane compound", Y. Nagai, I. Ojima, H. Kono, T. Kogure, S. Inaba, **Brit. Pat.** 1381463.
5. (i) "Process for preparing monosilanes from polysilanes", Y. Nagai, I. Ojima, S. Inaba, **U.S. Pat.** 3910980.
 (ii) "Process for preparing monosilanes from polysilanes", Y. Nagai, I. Ojima, S. Inaba, **Brit. Pat.** 1401948.
 (iii) "Verfahren zur Herstellung von Organosilanen", Y. Nagai, I. Ojima, S. Inaba, **German Pat.** 2409010.
 (iv) "Procede de Preparation dun monosilane a partir de polysilane", Y. Nagai, I. Ojima, S. Inaba, **French Pat.** 2219168.
6. (i) "Vinylsilanes", Y. Nagai, I. Ojima, **Brit. Pat.** 1418609.
 (ii) "Procede de preparation dun vinylsilane fonctionnel", Y. Nagai, I. Ojima, **French Pat.** 7422639.
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 (iv) "Procede de production daldehydes ayant un groupe perfluorocarbone", I. Ojima, T. Fuchikami, **French Pat.** 8104597.
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2. "Process for Producing β -Acyl Silyl Enol Ethers", Y. Nagai, I. Ojima, *Japan Kokai Tokkyo Koho*, S49 110633 (1974).
3. "Process for Producing Acyloxysilanes", Y. Nagai, I. Ojima, S. Inaba, *Japan Kokai Tokkyo Koho*, S49 110634 (1974).
4. "Process for Producing Functionalized Vinylsilanes Containing Nitrogen or Sulfur", Y. Nagai, I. Ojima, *Japan Kokai Tokkyo Koho*, S50 24224 (1975).
5. "Process for Producing Formamidines", Y. Nagai, I. Ojima, S. Inaba, *Japan Kokai Tokkyo Koho*, S50 116410 (1975).
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8. "Process for Producing α -Silylalkanonitriles", Y. Nagai, I. Ojima, M. Kumagai, *Japan Kokai Tokkyo Koho*, S51 32528 (1976).
10. "Process for Cleaving more than Two Kinds of Polysilanes into Monosilanes", Y. Nagai, I. Ojima, S. Inaba, *Japan Kokai Tokkyo Koho*, S51 13723 (1976).
11. "Process for Production of Alkoxysilanes", Y. Nagai, I. Ojima, T. Kogure, **Jpn. Pat.** 818620.
12. "Process for Production of Silyl Thioethers", Y. Nagai, I. Ojima, **Jpn. Pat.** 820674.
13. "Process for Producing Carboxylic Esters Bearing α - or β -Silyl Groups", Y. Nagai, I. Ojima, M. Tajima, *Japan Kokai Tokkyo Koho*, S51 98225 (1976).
14. "Process for Producing *N,N'*-Disubstituted-*N*-silyl-1-cyanoforamidines", Y. Nagai, I. Ojima, S. Inaba, *Japan Kokai Tokkyo Koho*, S51 101921 (1976).
15. "Process for Producing 2-(Siloxyamino)alkanonitriles", Y. Nagai, I. Ojima, S. Inaba, *Japan Kokai Tokkyo Koho*, S51 125218 (1976).
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18. "Process for Production of Silyl Ethers", Y. Nagai, I. Ojima, **Jpn. Pat.** 826120.
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20. "Process for Production of Silylamines", Y. Nagai, I. Ojima, T. Kogure, **Jpn. Pat.** 826122.
21. "Process for Producing Optically Active γ -Valerolactones", I. Ojima, *Japan Kokai Tokkyo Koho*, S52 17461 (1977).
22. "Process for Producing 5-Silylimidazolidine Derivatives", I. Ojima, S. Inaba, *Japan Kokai Tokkyo Koho*, S52 39673 (1977).
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24. "Process for Cleaving Polysilanes into Monosilanes", Y. Nagai, I. Ojima, S. Inaba, **Jpn. Pat.** 832026.
25. "Process for Producing Alkoxysilanes from Polysilanes", Y. Nagai, I. Ojima, S. Inaba, **Jpn. Pat.** 832027.
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33. "Process for Producing Optically Active Alcohols", Y. Nagai, I. Ojima, T. Kogure, **Jpn. Pat.** 851468.
34. "Process for Producing Optically Active α -Hydroxycarboxylic Esters", Y. Nagai, I. Ojima, **Jpn. Pat.** 865560.
35. "Process for Cleavage of Polysilanes", Y. Nagai, I. Ojima, S. Inaba, **Jpn. Pat.** 867542.
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44. "Process for Producing Trialkoxysilanes", Y. Nagai, I. Ojima, I. Ono, Y. Hiraga, Y. Suzuki, **Jpn. Pat.** 1033313.
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