

References

- Addiego, W.P., Johnson, B.Y. and Wang, L. (2016). METHOD FOR MAKING ACTIVATED CARBON-SUPPORTED TRANSITION METAL-BASED NANOPARTICLES, US Patent 20,160,023,921.
- Ahmadi, T.S., Wang, Z.L., Green, T.C., Henglein, A. and El-Sayed, M.A. (1996), "Shape-controlled synthesis of colloidal platinum nanoparticles", *Science*, Vol. 272, No. 5270, pp. 1924
- Akabori, S., Sakurai, S., Izumi, Y. and Fujii, Y. (1956), "An asymmetric catalyst", *Nature*, Vol. 178,3 pp. 323-324
- Alegre, C., Gálvez, M., Moliner, R., Baglio, V., Aricò, A.S. and Lázaro, M. (2014), "Towards an optimal synthesis route for the preparation of highly mesoporous carbon xerogel-supported Pt catalysts for the oxygen reduction reaction", *Applied Catalysis B: Environmental*, Vol. 147, pp. 947-957
- Allen, M.J., Tung, V.C. and Kaner, R.B. (2009), "Honeycomb carbon: a review of graphene", *Chemical reviews*, Vol. 110, No. 1, pp. 132-145
- Amabilino, D.B. (2016). *Supramolecular Chemistry at Surfaces*, Royal Society of Chemistry.
- Ampelli, C., Perathoner, S. and Centi, G. (2014), "Carbon-based catalysts: Opening new scenario to develop next-generation nano-engineered catalytic materials", *Chinese Journal of Catalysis*, Vol. 35, No. 6, pp. 783-791
- Aoki, S., Mikami, K., Terada, M. and Nakai, T. (1993), "Enantio- and diastereoselective catalysis of addition reaction of allylic silanes and stannanes to glyoxylates by binaphthol-derived titanium complex", *Tetrahedron*, Vol. 49, No. 9, pp. 1783-1792
- Aoyama, N. and Manabe, K. (2002), "Ligand-accelerated cadmium-catalyzed allylation of aldehydes and ketones in aqueous media", *Synlett*, Vol. 2002, No. 03, pp. 0483-0485
- Arenz, M., Mayrhofer, K.J., Stamenkovic, V., Blizanac, B.B., Tomoyuki, T., Ross, P.N. and Markovic, N.M. (2005), "The effect of the particle size on the kinetics of CO electrooxidation on high surface area Pt catalysts", *Journal of the American Chemical Society*, Vol. 127, No. 18, pp. 6819-6829
- Aspinall, H.C., Bissett, J.S., Greeves, N. and Levin, D. (2002), "Lanthanum triflate-catalysed allylation of aldehydes: crucial activation by benzoic acid", *Tetrahedron letters*, Vol. 43, No. 2, pp. 319-321
- Attard, G., Griffin, K., Jenkins, D., Johnston, P. and Wells, P. (2006), "Enantioselective hydrogenation of ethyl pyruvate catalysed by Pt/graphite: Superior performance of sintered metal particles", *Catalysis today*, Vol. 114, No. 4, pp. 346-352
- Augustine, R.L., Taneilyan, S.K. and Doyle, L.K. (1993), "Enantioselective heterogeneous catalysis I. A working model for the catalyst: modifier: substrate interactions in chiral pyruvate hydrogenations", *Tetrahedron: Asymmetry*, Vol. 4, No. 8, pp. 1803-1827
- Bagheri, S., Muehd Julkapli, N. and Bee Abd Hamid, S. (2014), "Titanium dioxide as a catalyst support in heterogeneous catalysis", *The Scientific World Journal*, Vol. 2014
- Baiker, A. (1997), "Progress in asymmetric heterogeneous catalysis: Design of novel chirally modified platinum metal catalysts", *Journal of Molecular Catalysis A: Chemical*, Vol. 115, No. 3, pp. 473-493
- Baiker, A. (2000), "Transition state analogues—a guide for the rational design of enantioselective heterogeneous hydrogenation catalysts", *Journal of Molecular Catalysis A: Chemical*, Vol. 163, No. 1, pp. 205-220
- Banks, R. (1992), "Patent, 5,086,178, 1992; b) Banks, RE; Mohialdin-Khaffaf, SN; Lal, GS; Shadf, I.; Syvret, RRJ Chem. Soc", *Chemical Communications*, Vol. 595
- Banks, R.E. (1998), "Selectfluor™ reagent F-TEDA-BF₄ in action: tamed fluorine at your service", *Journal of fluorine chemistry*, Vol. 87, No. 1, pp. 1-17
- Bartók, M., Balázsik, K., Bartók, T. and Kele, Z. (2003), "Heterogeneous asymmetric reactions 34. New data in the enantioselective hydrogenation of ethyl pyruvate catalyzed by cinchona alkaloid-modified Pt/Al₂O₃ in toluene", *Catalysis letters*, Vol. 87, No. 3-4, pp. 235-240
- Bartók, M., Balázsik, K., Szöllösi, G. and Bartók, T. (2001), "Solvent and support effects in the case of acetic acid and alumina: Oxonium cations in asymmetric hydrogenation of ethyl pyruvate over dihydrocinchonidine modified platinum", *Catalysis Communications*, Vol. 2, No. 8, pp. 269-272
- Bartók, M., Balázsik, K., Szöllösi, G. and Bartók, T. (2002), "Electrospray Ionization–Mass Spectrometry in the Enantioselective Hydrogenation of Ethyl Pyruvate Catalyzed by Dihydrocinchonidine Modified Pt/Al₂O₃ in Acetic Acid", *Journal of Catalysis*, Vol. 205, No. 1, pp. 168-176
- Bartók, M., Felföldi, K., Török, B. and Bartók, T. (1998), "A new cinchona-modified platinum catalyst for the enantioselective hydrogenation of pyruvate: the structure of the 1: 1 alkaloid–reactant complex", *Chemical Communications*, No. 23, pp. 2605-2606

- Bartók, M., Sutyinszki, M., Balázsik, K. and Szöllösi, G. (2005), "Enantioselective hydrogenation of ethyl pyruvate catalysed by cinchonine-modified Pt/Al₂O₃: tilted adsorption geometry of cinchonine", *Catal. Lett.*, Vol. 100, No. 3-4, pp. 161-167
- Bartók, M., Sutyinszki, M., Balázsik, K. and Szöllösi, G. (2005), "Enantioselective hydrogenation of ethyl pyruvate catalysed by cinchonine-modified Pt/Al₂O₃: tilted adsorption geometry of cinchonine", *Catalysis letters*, Vol. 100, No. 3-4, pp. 161-167
- Bartók, M., Sutyinszki, M. and Felföldi, K. (2003), "Enantioselective hydrogenation of ethyl pyruvate catalyzed by α - and β -isocinchonine-modified Pt/Al₂O₃ in acetic acid", *Journal of Catalysis*, Vol. 220, No. 1, pp. 207-214
- Bartók, M., Szöllösi, G., Balázsik, K. and Bartók, T. (2002), "Heterogeneous asymmetric reactions: Part 25. On the pretreatment and prehydrogenation of Pt-alumina catalyst in the hydrogenation of ethyl pyruvate", *Journal of Molecular Catalysis A: Chemical*, Vol. 177, No. 2, pp. 299-305
- Bartoli, G., Bosco, M., Giuliani, A., Marcantoni, E., Palmieri, A., Petrini, M. and Sambri, L. (2004), "Investigation into the Allylation Reactions of Aldehydes Promoted by the CeCl₃·7H₂O-NaI System as a Lewis Acid", *The Journal of organic chemistry*, Vol. 69, No. 4, pp. 1290-1297
- Baruwati, B., Polshettiwar, V. and Varma, R.S. (2009), "Magnetically recoverable supported ruthenium catalyst for hydrogenation of alkynes and transfer hydrogenation of carbonyl compounds", *Tetrahedron Letters*, Vol. 50, No. 11, pp. 1215-1218
- Baughman, R.H., Zakhidov, A.A. and de Heer, W.A. (2002), "Carbon nanotubes--the route toward applications", *Science*, Vol. 297, No. 5582, pp. 787-792
- Bedeschi, P., Casolan, S., Costa, A.L., Tagliavini, E. and Umami-Ronchi, A. (1995), "Catalytic asymmetric synthesis promoted by a chiral zirconate: Highly enantioselective allylation of aldehydes", *Tetrahedron letters*, Vol. 36, No. 43, pp. 7897-7900
- Bellucci, C., Cozzi, P.G. and Umami-Ronchi, A. (1995), "Catalytic allylation of imines promoted by lanthanide triflates", *Tetrahedron letters*, Vol. 36, No. 40, pp. 7289-7292
- Benaglia, M., Puglisi, A. and Cozzi, F. (2003), "Polymer-supported organic catalysts", *Chemical reviews*, Vol. 103, No. 9, pp. 3401-3430
- Bergbreiter, D.E. (2000), "Organic polymers as a catalyst recovery vehicle", *Chiral catalyst immobilization and recycling*, pp. 43-80
- Berova, N. and Nakanishi, K. (2000). *Circular dichroism: principles and applications*, John Wiley & Sons.
- Betz, J. and Heuschmann, M. (1995), "A new α -selective synthetic equivalent for the crotyl anion in additions to imines", *Tetrahedron letters*, Vol. 36, No. 23, pp. 4043-4046
- Bhaduri, S., Lahiri, G.K., Munshi, P. and Mukesh, D. (2000), "Asymmetric hydrogenation of methyl pyruvate using platinum carbonyl cluster supported on an anion exchanger as the catalyst", *Catalysis letters*, Vol. 65, No. 1-3, pp. 61-66
- Biot, J. (1815), "Phénomènes de polarisation successive, observés dans des fluides homogènes", *Bulletin Society Philomath*, Vol. 190, No., pp. 1815
- Blaser, H.-U. (1991), "Enantioselective synthesis using chiral heterogeneous catalysts", *Tetrahedron: Asymmetry*, Vol. 2, No. 9, pp. 843-866
- Blaser, H.-U., Jalett, H.-P., Garland, M., Studer, M., Thies, H. and Wirth-Tijani, A. (1998), "Kinetic studies of the enantioselective hydrogenation of ethyl pyruvate catalyzed by a cinchona modified Pt/Al₂O₃ catalyst", *Journal of Catalysis*, Vol. 173, No. 2, pp. 282-294
- Blaser, H.-U., Jalett, H.-P., Müller, M. and Studer, M. (1997), "Enantioselective hydrogenation of α -ketoesters using cinchona modified platinum catalysts and related systems: A review", *Catalysis today*, Vol. 37, No. 4, pp. 441-463
- Blaser, H., Garland, M. and Jallet, H. (1993), "Enantioselective hydrogenation of ethyl pyruvate: Kinetic modeling of the modification of Pt catalysts by cinchona alkaloids", *Journal of Catalysis*, Vol. 144, No. 2, pp. 569-578
- Blaser, H., Jalett, H., Lottenbach, W. and Studer, M. (2000), "Heterogeneous enantioselective hydrogenation of ethyl pyruvate catalyzed by cinchona-modified Pt catalysts: Effect of modifier structure", *Journal of the American Chemical Society*, Vol. 122, No. 51, pp. 12675-12682
- Blaser, H., Jalett, H., Monti, D., Baiker, A. and Wehrli, J. (1991), "Enantioselective hydrogenation of ethyl pyruvate: effect of catalyst and modifier structure", *Studies in Surface Science and Catalysis*, Vol. 67, No., pp. 147-155
- Blaser, H., Jalett, H., Müller, M. and Studer, M. (1997), "Review:(a) Catal", *Catalysis Today*, Vol. 37, No., pp. 441-463
- Blaser, H., Jalett, H. and Wiehl, J. (1991), "Enantioselective hydrogenation of α -ketoesters with cinchona-modified platinum catalysts: Effect of acidic and basic solvents and additives", *Journal of molecular catalysis*, Vol. 68, No. 2, pp. 215-222

- Bloch, R. (1998), "Additions of organometallic reagents to CN bonds: reactivity and selectivity", *Chemical reviews*, Vol. 98, No. 4, pp. 1407-1438
- Bond, G., Meheux, P., Ibbotson, A. and Wells, P. (1991), "Origin of enhanced rate in the platinum-catalysed enantioselective hydrogenation of methyl pyruvate", *Catalysis Today*, Vol. 10, No. 3, pp. 371-378
- Borodziński, A. (2001), "The effect of palladium particle size on the kinetics of hydrogenation of acetylene-ethylene mixtures over Pd/SiO₂ catalysts", *Catalysis letters*, Vol. 71, No. 3-4, pp. 169-175
- Bruix, A., Lykhach, Y., Matolínová, I., Neitzel, A., Skála, T., Tsud, N., Vorokhta, M., Stetsovych, V., Ševčíková, K. and Mysliviček, J. (2014), "Maximum Noble-Metal Efficiency in Catalytic Materials: Atomically Dispersed Surface Platinum", *Angewandte Chemie International Edition*, Vol. 53, No. 39, pp. 10525-10530
- Buerger, T. and Baiker, A. (2000), "Model for enantioselective hydrogenation of α -ketoesters over chirally modified platinum revisited: Influence of α -ketoester conformation", *Journal of Catalysis*, Vol. 194, No. 2, pp. 445-451
- Bürgi, T. and Baiker, A. (2004), "Heterogeneous enantioselective hydrogenation over cinchona alkaloid modified platinum: mechanistic insights into a complex reaction", *Accounts of chemical research*, Vol. 37, No. 11, pp. 909-917
- Burkart, M.D., Zhang, Z., Hung, S.-C. and Wong, C.-H. (1997), "A new method for the synthesis of fluoro-carbohydrates and glycosides using selectfluor", *Journal of the American Chemical Society*, Vol. 119, No. 49, pp. 11743-11746
- Busch, K.W. and Busch, M.A. (2011). *Chiral analysis*, Elsevier.
- Cahard, D., Audouard, C., Plaquevent, J.-C., Toupet, L. and Roques, N. (2001), "N-Fluorocinchonidinium tetrafluoroborate F-CD-BF₄: purification and structure elucidation of this novel enantioselective electrophilic fluorinating agent", *Tetrahedron Letters*, Vol. 42, No. 10, pp. 1867-1869
- Carabineiro, S., Martins, L., Avalos-Borja, M., Buijnsters, J.G., Pombeiro, A. and Figueiredo, J. (2013), "Gold nanoparticles supported on carbon materials for cyclohexane oxidation with hydrogen peroxide", *Applied Catalysis A: General*, Vol. 467, No., pp. 279-290
- Carley, A., Rajumon, M., Roberts, M. and Wells, P. (1995), "XPS and LEED studies of 10, 11-dihydrocinchonidine adsorption at Pt (111). Implications for the role of cinchona alkaloids in enantioselective hydrogenation", *J. Chem. Soc., Faraday Trans.*, Vol. 91, No. 14, pp. 2167-2172
- Carvalho Padilha, J., Noël, J.M., Bergamini, J.F., Rault-Berthelot, J. and Lagrost, C. (2016), "Functionalization of Carbon Materials by Reduction of Diazonium Cations Produced in Situ in a Brønsted Acidic Ionic Liquid", *ChemElectroChem*, Vol., No., pp.
- Chauvin, Y., Commereuc, D. and Dawans, F. (1977), "Polymer supported catalysts", *Progress in Polymer Science*, Vol. 5, No. 3-4, pp. 95-226
- Chen, D., Li, Y., Liao, S., Su, D., Song, H., Li, Y., Yang, L. and Li, C. (2015), "Ultra-high-performance core-shell structured Ru@ Pt/C catalyst prepared by a facile pulse electrochemical deposition method", *Scientific reports*, Vol. 5
- Chen, H., Rui, Z. and Ji, H. (2015), "Titania-supported Pt catalyst reduced with HCHO for HCHO oxidation under mild conditions", *Chinese Journal of Catalysis*, Vol. 36, No. 2, pp. 188-196
- Chen, J.L.Y. and Aggarwal, V.K. (2014), "Highly Diastereoselective and Enantiospecific Allylation of Ketones and Imines Using Borinic Esters: Contiguous Quaternary Stereogenic Centers", *Angewandte Chemie International Edition*, Vol. 53, No. 41, pp. 10992-10996
- Chen, Z., Guan, Z., Li, M., Yang, Q. and Li, C. (2011), "Enhancement of the performance of a platinum nanocatalyst confined within carbon nanotubes for asymmetric hydrogenation", *Angewandte Chemie International Edition*, Vol. 50, No. 21, pp. 4913-4917
- Chen, Z., Qin, S., Liu, D., Shen, Y. and Liang, F. (2013), "A Series of Coordination Polymers Exhibiting Dual Chiral Features and Diverse Interhelical Interactions", *Crystal Growth & Design*, Vol. 13, No. 8, pp. 3389-3395
- Choi, Y.C., Min, K.-I. and Jeong, M.S. (2013), "Novel method of evaluating the purity of multiwall carbon nanotubes using raman spectroscopy", *Journal of Nanomaterials*, Vol. 2013, No., pp. 2
- Coats, A. and Redfern, J. (1963), "Thermogravimetric analysis. A review", *Analyst*, Vol. 88, No. 1053, pp. 906-924
- Collier, P., Iggo, J., Hall, T., Anton Slipszenko, J. and Wells, P. (1998), "Solvent and substituent effects on the sense of the enantioselective hydrogenation of pyruvate esters catalysed by Pd and Pt in colloidal and supported forms", *Chemical Communications*, No. 14, pp. 1451-1452
- Collier, P.J., Iggo, J.A. and Whyman, R. (1999), "Preparation and characterisation of solvent-stabilised nanoparticulate platinum and palladium and their catalytic behaviour towards the enantioselective

- hydrogenation of ethyl pyruvate", *Journal of Molecular Catalysis A: Chemical*, Vol. 146, No. 1, pp. 149-157
- Consiglio, G. and Waymouth, R.M. (1989), "Enantioselective homogeneous catalysis involving transition-metal-allyl intermediates", *Chemical Reviews*, Vol. 89, No. 1, pp. 257-276
- Corma, A. (2016), "Heterogeneous Catalysis: Understanding for Designing, and Designing for Applications", *Angewandte Chemie International Edition*, Vol. 55, No. 21, pp. 6112-6113
- Corma, A. and García, H. (2002), "Lewis acids as catalysts in oxidation reactions: from homogeneous to heterogeneous systems", *Chemical Reviews*, Vol. 102, No. 10, pp. 3837-3892
- Cozzi, P.G., Floriani, C., Chiesi-Villa, A. and Rizzoli, C. (1994), "A Novel Homogeneous Lewis Acid Catalyst: Bistriflatedibenzotetramethyltetraazaannulenezirconium (IV) in a Cationic Form", *Synlett*, Vol. 1994, No. 10, pp. 857-858
- Cozzi, P.G., Orioli, P., Tagliavini, E. and Umami-Ronchi, A. (1997), "Enantioselective allylation of aldehydes promoted by chiral zinc bis (oxazoline) complexes", *Tetrahedron letters*, Vol. 38, No. 1, pp. 145-148
- Davies, A.G. (2004). *Organotin Chemistry*, 2nd, completely revised, and updated ed, Wiley-VCH Verlag GmbH & Co. KGaA: Weinheim, Germany.
- Davies, H., Green, R., Kelly, D. and Roberts, S.M. (2012). *Biotransformations Preparative Organic Chemistry: The Use of Isolated Enzymes and Whole Cell Systems in Synthesis*, Academic Press.
- Demers-Carpentier, V., Rasmussen, A.M., Goubert, G., Ferrighi, L., Dong, Y., Lemay, J.-C., Masini, F., Zeng, Y., Hammer, B. and McBreen, P.H. (2013), "Stereodirection of an α -ketoester at sub-molecular sites on chirally modified Pt (111): Heterogeneous asymmetric catalysis", *Journal of the American Chemical Society*, Vol. 135, No. 27, pp. 9999-10002
- Denmark, S.E., Edwards, J.P. and Nicaise, O. (1993), "Organocerium additions to hydrazones: effects of reagent stoichiometry on efficiency and selectivity", *The Journal of Organic Chemistry*, Vol. 58, No. 3, pp. 569-578
- Denmark, S.E., Fu, J. and Lawler, M.J. (2006), "Chiral phosphoramidate-catalyzed enantioselective addition of allylic trichlorosilanes to aldehydes. Preparative studies with bidentate phosphorus-based amides", *The Journal of organic chemistry*, Vol. 71, No. 4, pp. 1523-1536
- Denmark, S.E., Nakajima, N. and Nicaise, O.J.-C. (1994), "Asymmetric addition of organolithium reagents to imines", *Journal of the American Chemical Society*, Vol. 116, No. 19, pp. 8797-8798
- Denmark, S.E. and Weber, E.J. (1983), "On the stereochemistry of allylmethylaldehyde condensations. Preliminary communication", *Helvetica chimica acta*, Vol. 66, No. 6, pp. 1655-1660
- Denmark, S.E., Weber, T. and Piotrowski, D.W. (1987), "Organocerium additions to SAMP-hydrazones: General synthesis of chiral amines", *Journal of the American Chemical Society*, Vol. 109, No. 7, pp. 2224-2225
- Derbyshire, F., De Beer, V., Abotsi, G., Scaroni, A., Solar, J. and Skrovanek, D. (1986), "The influence of surface functionality on the activity of carbon-supported catalysts", *Applied catalysis*, Vol. 27, No. 1, pp. 117-131
- Dong, F., Guo, W., Park, S.-K. and Ha, C.-S. (2012), "Controlled synthesis of novel cyanopropyl polysilsesquioxane hollow spheres loaded with highly dispersed Au nanoparticles for catalytic applications", *Chemical Communications*, Vol. 48, No. 8, pp. 1108-1110
- Drapeau, J., Verdier, M., Touraud, D., Kröckel, U., Geier, M., Rose, A. and Kunz, W. (2009), "Effective Insect Repellent Formulation in both Surfactantless and Classical Microemulsions with a Long-Lasting Protection for Human Beings", *Chemistry & biodiversity*, Vol. 6, No. 6, pp. 934-947
- Du, X., Liu, J., Deng, J. and Yang, W. (2010), "Synthesis and chiral recognition of optically active hydrogels containing helical polymer chains", *Polymer Chemistry*, Vol. 1, No. 7, pp. 1030-1038
- Dujardin, E., Ebbesen, T., Hiura, H. and Tanigaki, K. (1994), "Capillarity and wetting of carbon nanotubes", *Science*, Vol. 265, No. 5180, pp. 1850-1852
- Elezovic, N., Radmilovic, V. and Krstajic, N. (2016), "Platinum nanocatalysts on metal oxide based supports for low temperature fuel cell applications", *RSC Advances*, Vol. 6, No. 8, pp. 6788-6801
- Endo, M. (1988), "Grow carbon fibers in the vapor phase", *Chemtech*
- Endo, M., Strano, M.S. and Ajayan, P.M. (2007). Potential applications of carbon nanotubes. *Carbon nanotubes*, Springer: 13-62.
- Escudero, M., Hontanon, E., Schwartz, S., Boutonnet, M. and Daza, L. (2002), "Development and performance characterisation of new electrocatalysts for PEMFC", *Journal of power Sources*, Vol. 106, No. 1, pp. 206-214
- Fan, Q.-H., Li, Y.-M. and Chan, A.S. (2002), "Recoverable catalysts for asymmetric organic synthesis", *Chemical Reviews*, Vol. 102, No. 10, pp. 3385-3466

- Fang, X., Johannsen, M., Yao, S., Gathergood, N., Hazell, R.G. and Jørgensen, K.A. (1999), "Catalytic approach for the formation of optically active allyl α -Amino acids by addition of allylic metal compounds to α -imino Esters", *The Journal of organic chemistry*, Vol. 64, No. 13, pp. 4844-4849
- Fard, A.K., Mckay, G., Manawi, Y., Malaibari, Z. and Hussien, M.A. (2016), "Outstanding adsorption performance of high aspect ratio and super-hydrophobic carbon nanotubes for oil removal", *Chemosphere*, Vol. 164, pp. 142-155
- Feenstra, R., Stokkingreef, E., Nivard, R. and Ottenheijm, H. (1988), "Interconversion of (R) and (S)- α -hydroxy esters: precursors of (S) and (R)-*o*-benzyl- α -hydroxylamino acid esters of high optical purity", *Tetrahedron*, Vol. 44, No. 17, pp. 5583-5595
- Fernandes, R.A. and Nallasivam, J.L. (2012), "Enantioselective allylation of imines catalyzed by newly developed (-)- β -pinene-based π -allylpalladium catalyst: an efficient synthesis of (R)- α -propylpiperonylamine and (R)-piperocolic acid", *Organic & biomolecular chemistry*, Vol. 10, No. 38, pp. 7789-7800
- Fernandez-Santin, J., Munoz-Guerra, S., Rodríguez-Galán, A., Aymami, J., Lloveras, J., Subirana, J., Giralt, E. and Ptak, M. (1987), "Helical conformations in a polyamide of the nylon-3 family", *Macromolecules*, Vol. 20, No. 1, pp. 62-68
- Ferrari, A. and Robertson, J. (2001), "Resonant Raman spectroscopy of disordered, amorphous, and diamondlike carbon", *Physical Review B*, Vol. 64, No. 7, pp. 075414
- Ferri, D., Buergi, T., Borszky, K., Mallat, T. and Baiker, A. (2000), "Enhanced enantioselectivity in ethyl pyruvate hydrogenation due to competing enantioselective aldol reaction catalyzed by cinchonidine", *Journal of Catalysis*, Vol. 193, No. 1, pp. 139-144
- Forbes, L.M., Sattayasamitsathit, S., Xu, P.F., O'Mahony, A., Samek, I.A., Kaufmann, K., Wang, J. and Cha, J.N. (2013), "Improved oxygen reduction reaction activities with amino acid R group functionalized PEG at platinum surfaces", *Journal of Materials Chemistry A*, Vol. 1, No. 35, pp. 10267-10273
- Fraga, M., Mendes, M. and Jordao, E. (2002), "Examination of the surface chemistry of activated carbon on enantioselective hydrogenation of methyl pyruvate over Pt/C catalysts", *Journal of Molecular Catalysis A: Chemical*, Vol. 179, No. 1, pp. 243-251
- Fraile, J.M., García, J.L., Mayoral, J.A. and Tarnai, T. (1998), "Clay-supported bis (oxazoline)-copper complexes as heterogeneous catalysts of enantioselective cyclopropanation reactions", *Tetrahedron: Asymmetry*, Vol. 9, No. 22, pp. 3997-4008
- Furuta, K., Mouri, M. and Yamamoto, H. (1991), "Chiral (acyloxy) borane catalyzed asymmetric allylation of aldehydes", *Synlett*, Vol. 1991, No. 08, pp. 561-562
- Gallezot, P. (2002), "Hydrogenation-heterogeneous", *Encyclopedia of catalysis*
- Gamez, A., Köhler, J. and Bradley, J. (1998), "Solvent effects in the kinetics of the enantioselective hydrogenation of ethyl pyruvate", *Catalysis letters*, Vol. 55, No. 2, pp. 73-77
- Garland, M. and Blaser, H.U. (1990), "A heterogeneous ligand-accelerated reaction: enantioselective hydrogenation of ethyl pyruvate catalyzed by cinchona-modified platinum/aluminum oxide catalysts", *Journal of the American Chemical Society*, Vol. 112, No. 19, pp. 7048-7050
- Giacalone, F., Campisciano, V., Calabrese, C., La Parola, V., Syrgiannis, Z., Prato, M. and Gruttadauria, M. (2016), "Single-Walled Carbon Nanotube-Polyamidoamine Dendrimer Hybrids for Heterogeneous Catalysis", *ACS nano*, Vol. 10, No. 4, pp. 4627-4636
- Gonsalves, K., Zhan-Ru, L. and Rausch, M.D. (1984), "Ferrocene-containing polyamides and polyureas", *Journal of the American Chemical Society*, Vol. 106, No. 13, pp. 3862-3863
- Greenfield, N.J. (2006), "Using circular dichroism spectra to estimate protein secondary structure", *Nature protocols*, Vol. 1, No. 6, pp. 2876-2890
- Groves, M.N., Malardier-Jugroot, C. and Jugroot, M. (2012), "Improving platinum catalyst durability with a doped graphene support", *The Journal of Physical Chemistry C*, Vol. 116, No. 19, pp. 10548-10556
- Gruttadauria, M., Giacalone, F. and Noto, R. (2008), "Supported proline and proline-derivatives as recyclable organocatalysts", *Chemical Society Reviews*, Vol. 37, No. 8, pp. 1666-1688
- Guan, Z., Lu, S., Chen, Z. and Li, C. (2013), "An unexpected effect of water on the asymmetric hydrogenation of α -ketoesters on platinum nanoparticles confined in carbon nanotubes", *Journal of catalysis*, Vol. 305, pp. 19-26
- Guan, Z., Lu, S. and Li, C. (2014), "Enantioselective hydrogenation of α , β -unsaturated carboxylic acid over cinchonidine-modified Pd nanoparticles confined in carbon nanotubes", *Journal of Catalysis*, Vol. 311, pp. 1-5
- Heinz, T., Wang, G., Pfaltz, A., Minder, B., Schürch, M., Mallat, T. and Baiker, A. (1995), "1-(1-Naphthyl) ethylamine and derivatives thereof as chiral modifiers in the enantioselective hydrogenation of ethyl pyruvate over Pt-alumina", *Journal of the Chemical Society, Chemical Communications*, No. 14, pp. 1421-1422

- Hisashi, Y. and Koichiro, O. (2004). *Main Group Metals in Organic Synthesis*, Wiley-VCH: Weinheim, Germany.
- Hong, J., Lee, I. and Zaera, F. (2015), "Correlated bifunctionality in heterogeneous catalysts: selective tethering of cinchonidine next to supported Pt nanoparticles", *Catalysis Science & Technology*, Vol. 5, No. 2, pp. 680-689
- Horiuti, I. and Polanyi, M. (1934), "Exchange reactions of hydrogen on metallic catalysts", *Transactions of the Faraday Society*, Vol. 30, pp. 1164-1172
- Hoxha, F., Königsmann, L., Vargas, A., Ferri, D., Mallat, T. and Baiker, A. (2007), "Role of guiding groups in cinchona-modified platinum for controlling the sense of enantiodifferentiation in the hydrogenation of ketones", *Journal of the American Chemical Society*, Vol. 129, No. 34, pp. 10582-10590
- Huang, J.M., Wang, X.X. and Dong, Y. (2011), "Electrochemical allylation reactions of simple imines in aqueous solution mediated by nanoscale zinc architectures", *Angewandte Chemie International Edition*, Vol. 50, No. 4, pp. 924-927
- Huang, Y., Chen, J., Chen, H., Li, R., Li, Y., Min, L.-e. and Li, X. (2001), "Enantioselective hydrogenation of ethyl pyruvate catalyzed by PVP-stabilized rhodium nanoclusters", *Journal of Molecular Catalysis A: Chemical*, Vol. 170, No. 1, pp. 143-146
- Huo, H.-X., Duvall, J.R., Huang, M.-Y. and Hong, R. (2014), "Catalytic asymmetric allylation of carbonyl compounds and imines with allylic boronates", *Organic Chemistry Frontiers*, Vol. 1, No. 3, pp. 303-320
- Hutchings, G.J. (1999), "New approaches to rate enhancement in heterogeneous catalysis", *Chemical Communications*, Vol., No. 4, pp. 301-306
- Iijima, S. (1991), "Helical microtubules of graphitic carbon", *nature*, Vol. 354, No. 6348, pp. 56-58
- Ikariya, T. and Blacker, A.J. (2007), "Asymmetric Transfer Hydrogenation of Ketones with Bifunctional Transition Metal-Based Molecular Catalysts†", *Accounts of chemical research*, Vol. 40, No. 12, pp. 1300-1308
- Imai, Y., Zhang, W., Kida, T., Nakatsuji, Y. and Ikeda, I. (2000), "Novel chiral bisoxazoline ligands with a biphenyl backbone: preparation, complexation, and application in asymmetric catalytic reactions", *The Journal of organic chemistry*, Vol. 65, No. 11, pp. 3326-3333
- Imelik, B. (2000). *Metal-support and metal-additive effects in catalysis*, Elsevier.
- Inoue, I., Shindo, M., Koga, K. and Tomioka, K. (1993), "Steric tuning in chiral ligand mediated enantioselective alkylation of imines", *Tetrahedron: Asymmetry*, Vol. 4, No. 7, pp. 1603-1606
- Inoue, K., Makino, Y. and Itoh, N. (2005), "Production of (R)-chiral alcohols by a hydrogen-transfer bioreduction with NADH-dependent Leifsonia alcohol dehydrogenase (LSADH)", *Tetrahedron: Asymmetry*, Vol. 16, No. 15, pp. 2539-2549
- Ishitani, H., Ueno, M. and Kobayashi, S. (1997), "Catalytic enantioselective Mannich-type reactions using a novel chiral zirconium catalyst", *Journal of the American Chemical Society*, Vol. 119, No. 30, pp. 7153-7154
- Islam, M.R., Ahamed, P., Haraguchi, N. and Itsuno, S. (2014), "Synthesis of chiral polymers containing thioetherified cinchonidinium repeating units and their application to asymmetric catalysis", *Tetrahedron: Asymmetry*, Vol. 25, No. 18, pp. 1309-1315
- Itooka, R., Iguchi, Y. and Miyaura, N. (2003), "Rhodium-catalyzed 1, 4-addition of arylboronic acids to α , β -unsaturated carbonyl compounds: Large accelerating effects of bases and ligands", *The Journal of organic chemistry*, Vol. 68, No. 15, pp. 6000-6004
- Itsuno, S. (2011). *Polymeric chiral catalyst design and chiral polymer synthesis*, John Wiley & Sons.
- Itsuno, S., Haraguchi, N. and Arakawa, Y. (2005), "Reviews on asymmetric reaction using polymer-supported catalyst, see: Recent Res", *Dev. Org. Chem*, Vol. 9, No., pp. 27-47
- Itsuno, S. and Hassan, M.M. (2014), "Polymer-immobilized chiral catalysts", *RSC Advances*, Vol. 4, No. 94, pp. 52023-52043
- Izumi, Y. (1959), "Studies on the Silk-Palladium Catalyst. I Preparation and Stability", *Bulletin of the Chemical Society of Japan*, Vol. 32, No. 9, pp. 932-936
- Jiang, J., Meng, Y., Zhang, L. and Liu, M. (2016), "Self-Assembled Single-walled Metal-helical Nanotube (M-HN): Creation of Efficient Supramolecular Catalysts for Asymmetric Reaction", *Journal of the American Chemical Society*
- Julkapli, N.M. and Bagheri, S. (2015), "Graphene supported heterogeneous catalysts: an overview", *International Journal of Hydrogen Energy*, Vol. 40, No. 2, pp. 948-979
- Jumde, R.P. and Mandoli, A. (2016), "Long-Lived Polymer Supported Dimeric Cinchona Alkaloid Organocatalyst in the Asymmetric α -Amination of 2-Oxindoles", *ACS Catalysis*, Vol. 6 No., pp. 4281-4285
- Jüntgen, H. (1986), "Activated carbon as catalyst support: a review of new research results", *Fuel*, Vol. 65, No. 10, pp. 1436-1446

- Kelvin, W.T.B. (1904). *Baltimore lectures on molecular dynamics and the wave theory of light*, CJ Clay and Sons.
- Kennedy, J.W. and Hall, D.G. (2003), "Recent advances in the activation of boron and silicon reagents for stereocontrolled allylation reactions", *Angewandte Chemie International Edition*, Vol. 42, No. 39, pp. 4732-4739
- Killinger, T.A., Boughton, N.A., Runge, T.A. and Wolinsky, J. (1977), "Alcohols as solvent for the generation and reaction of allylic zinc halides with aldehydes and ketones", *Journal of Organometallic Chemistry*, Vol. 124, No. 2, pp. 131-134
- Kim, P., Joo, J.B., Kim, W., Kim, J., Song, I.K. and Yi, J. (2006), "NaBH₄-assisted ethylene glycol reduction for preparation of carbon-supported Pt catalyst for methanol electro-oxidation", *Journal of power sources*, Vol. 160, No. 2, pp. 987-990
- Knowles, W., Sabacky, M., Vineyard, B. and Weinkauff, D. (1975), "Asymmetric hydrogenation with a complex of rhodium and a chiral bisphosphine", *Journal of the American Chemical Society*, Vol. 97, No. 9, pp. 2567-2568
- Knowles, W.S. (2002), "Asymmetric hydrogenations (Nobel lecture)", *Angewandte Chemie International Edition*, Vol. 41, No. 12, pp. 1998-2007
- Knowles, W.S. and Sabacky, M.J. (1968), "Catalytic asymmetric hydrogenation employing a soluble, optically active, rhodium complex", *Chemical Communications (London)*, Vol., No. 22, pp. 1445-1446
- Knowles, W.S., Sabacky, M.J. and Vineyard, B. (1972), "Catalytic asymmetric hydrogenation", *Journal of the Chemical Society, Chemical Communications*, No. 1, pp. 10-11
- Kobayashi, S. (1999), "Scandium triflate in organic synthesis", *European journal of organic chemistry*, Vol. 1999, No. 1, pp. 15-27
- Kobayashi, S. and Anwander, R. (1999). *Lanthanides: chemistry and use in organic synthesis*, Springer Science & Business Media.
- Kobayashi, S. and Ishitani, H. (1999), "Catalytic enantioselective addition to imines", *Chemical Reviews*, Vol. 99, No. 5, pp. 1069-1094
- Köhler, J.U. and Bradley, J.S. (1998), "A kinetic probe of the effect of a stabilizing polymer on a colloidal catalyst: accelerated enantioselective hydrogenation of ethyl pyruvate catalyzed by poly(vinylpyrrolidone)-stabilized platinum colloids", *Langmuir*, Vol. 14, No. 10, pp. 2730-2735
- Kong, J.-R., Ngai, M.-Y. and Krische, M.J. (2006), "Highly enantioselective direct reductive coupling of conjugated alkynes and α -ketoesters via rhodium-catalyzed asymmetric hydrogenation", *Journal of the American Chemical Society*, Vol. 128, No. 3, pp. 718-719
- Kristensen, T.E. and Hansen, T. (2010), "Polymer-Supported Chiral Organocatalysts: Synthetic Strategies for the Road Towards Affordable Polymeric Immobilization", *The European Journal of Organic Chemistry*, Vol. 2010, No. 17, pp. 3179-3204
- Kwong, H.-L., Lau, K.-M., Lee, W.-S. and Wong, W.-T. (1999), "Chiral zinc (II) bipyridine complex. Crystal structure and catalytic activity in asymmetric allylation reaction", *New Journal of Chemistry*, Vol. 23, No. 6, pp. 629-632
- Laliberté, M.-A., Lavoie, S., Hammer, B., Mahieu, G. and McBreen, P.H. (2008), "Activation in prochiral reaction assemblies on Pt (111)", *Journal of the American Chemical Society*, Vol. 130, No. 16, pp. 5386-5387
- Lam, E. and Luong, J.H. (2014), "Carbon materials as catalyst supports and catalysts in the transformation of biomass to fuels and chemicals", *ACS catalysis*, Vol. 4, No. 10, pp. 3393-3410
- Langlois, N., Dang, T.-P. and Kagan, H.B. (1973), "Synthese asymétrique d'amines par hydrosilylation d'imines catalysée par un complexe chiral du rhodium", *Tetrahedron Letters*, Vol. 14, No. 49, pp. 4865-4868
- Lavoie, S., Laliberté, M.-A. and McBreen, P. (2003), "Adsorption states and modifier-substrate interactions on Pt (111) relevant to the enantioselective hydrogenation of alkyl pyruvates in the Orito reaction", *Journal of the American Chemical Society*, Vol. 125, No. 51, pp. 15756-15757
- Le Bars, J., Specht, U., Bradley, J.S. and Blackmond, D.G. (1999), "A catalytic probe of the surface of colloidal palladium particles using Heck coupling reactions", *Langmuir*, Vol. 15, No. 22, pp. 7621-7625
- Le, T.P. and Gan, T.J. (2012), "Postoperative Nausea and Vomiting", *Perioperative Medicine: Medical Consultation and Co-Management*, pp. 425-437
- LeBlond, C., Wang, J., Andrews, A. and Sun, Y.-K. (2000), "Establishment and maintenance of an optimal chiral surface in cinchona-modified 1% Pt/Al₂O₃ for enantioselective hydrogenation of α -keto esters", *Topics in Catalysis*, Vol. 13, No. 3, pp. 169-174
- LeBlond, C., Wang, J., Liu, J., Andrews, A. and Sun, Y.-K. (1999), "Highly enantioselective heterogeneously catalyzed hydrogenation of α -ketoesters under mild conditions", *Journal of the American Chemical Society*, Vol. 121, No. 20, pp. 4920-4921

- Lee, I., Delbecq, F., Morales, R., Albitzer, M.A. and Zaera, F. (2009), "Tuning selectivity in catalysis by controlling particle shape", *Nature materials*, Vol. 8, No. 2, pp. 132-138
- Lei, Y., Lee, S., Low, K.-B., Marshall, C.L. and Elam, J.W. (2016), "Combining Electronic and Geometric Effects of ZnO-Promoted Pt Nanocatalysts for Aqueous Phase Reforming of 1-Propanol", *ACS Catalysis*, Vol. 6, No. 6, pp. 3457-3460
- Li, G.-I. and Zhao, G. (2005), "Efficient allylation of aldehydes promoted by carboxylic acids", *The Journal of organic chemistry*, Vol. 70, No. 11, pp. 4272-4278
- Li, Q., Zhang, X., Xiao, M. and Liu, Y. (2013), "Alumina incorporated with mesoporous carbon as a novel support of Pt catalyst for asymmetric hydrogenation", *Catalysis Communications*, Vol. 42, pp. 68-72
- Li, W., Liang, C., Zhou, W., Qiu, J., Zhou, Z., Sun, G. and Xin, Q. (2003), "Preparation and characterization of multiwalled carbon nanotube-supported platinum for cathode catalysts of direct methanol fuel cells", *The Journal of Physical Chemistry B*, Vol. 107, No. 26, pp. 6292-6299
- Li, X., Dummer, N., Jenkins, R., Wells, R.P., Wells, P.B., Willock, D.J., Taylor, S.H., Johnston, P. and Hutchings, G.J. (2004), "Enantioselective Hydrogenation Using Cinchona-Modified Pt/ γ -Al₂O₃ Catalysts: Comparison of the Reaction of Ethyl Pyruvate and Buta-2, 3-dione", *Catalysis letters*, Vol. 96, No. 3-4, pp. 147-151
- Li, Y., Boone, E. and El-Sayed, M.A. (2002), "Size effects of PVP-Pd nanoparticles on the catalytic Suzuki reactions in aqueous solution", *Langmuir*, Vol. 18, No. 12, pp. 4921-4925
- Lin, Z., Chu, H., Shen, Y., Wei, L., Liu, H. and Li, Y. (2009), "Rational preparation of faceted platinum nanocrystals supported on carbon nanotubes with remarkably enhanced catalytic performance", *Chemical Communications*, Vol., No. 46, pp. 7167-7169
- Liu, J., Cao, C.-G., Sun, H.-B., Zhang, X. and Niu, D. (2016), "Catalytic Asymmetric Umpolung Allylation of Imines", *Journal of the American Chemical Society*, Vol. 138, No. 40, pp. 13103-13106
- Liu, J. and Wong, C.-H. (2002), "An efficient method for the cleavage of p-methoxybenzylidene (PMP), tetrahydropyranyl (THP) and 1, 3-dithiane protecting groups by Selectfluor™", *Tetrahedron letters*, Vol. 43, No. 22, pp. 4037-4039
- Liu, J. and Wong, C.-H. (2002), "Selectfluor™-mediated allylstannation of aldehydes and imines", *Tetrahedron letters*, Vol. 43, No. 21, pp. 3915-3917
- Loh, T.-P., Xu, J., Hu, Q.-Y. and Vittal, J.J. (2000), "A highly chemoselective and diastereoselective trifluoromethane sulfonic acid catalyzed addition of allyltributylstannanes to a steroidal aldehyde in aqueous media", *Tetrahedron: Asymmetry*, Vol. 11, No. 7, pp. 1565-1569
- Loh, T.-P., Zhou, J.-R. and Yin, Z. (1999), "A highly enantioselective indium-mediated allylation reaction of aldehydes", *Organic Letters*, Vol. 1, No. 11, pp. 1855-1857
- López-Suárez, F.E., Bueno-López, A., Eguiluz, K.I.B. and Salazar-Banda, G.R. (2014), "Pt-Sn/C catalysts prepared by sodium borohydride reduction for alcohol oxidation in fuel cells: Effect of the precursor addition order", *Journal of Power Sources*, Vol. 268, pp. 225-232
- Lu, J., Ji, S.-J., Qian, R., Chen, J.-P., Liu, Y. and Loh, T.-P. (2004), "InCl₃-promoted allylation of aldehydes in ionic liquid: Scope and enantioselectivity studies", *Synlett*, Vol. 2004, No. 03, pp. 534-536
- Lu, S.M. and Bolm, C. (2008), "Highly Enantioselective Synthesis of Optically Active Ketones by Iridium-Catalyzed Asymmetric Hydrogenation", *Angewandte Chemie*, Vol. 120, No. 46, pp. 9052-9055
- Maitlis, P., Espinet, P. and Russell, M. (1982), "Comprehensive Organometallic Chemistry", *Wilkinson, G., Stone, FGA, and Abel, EW, Eds*, Vol. 6, No., pp.
- Mäki-Arvela, P., Hajek, J., Salmi, T. and Murzin, D.Y. (2005), "Chemoselective hydrogenation of carbonyl compounds over heterogeneous catalysts", *Applied Catalysis A: General*, Vol. 292, pp. 1-49
- Mallat, T., Orglmeister, E. and Baiker, A. (2007), "Asymmetric catalysis at chiral metal surfaces", *Chemical Reviews*, Vol. 107, No. 11, pp. 4863-4890
- Malus, E. (1809), "Sur une propriété de la lumière réfléchie", *Mém. Phys. Chim. Soc. d'Arcueil*, Vol. 2, pp. 143-158
- Margitfalvi, J.L., Hegedüs, M. and Tfirst, E. (1996), "Enantioselective hydrogenation of α -keto esters over cinchona-PtAl₂O₃ catalyst. Kinetic evidence for the substrate-modifier interaction in the liquid phase", *Tetrahedron: Asymmetry*, Vol. 7, No. 2, pp. 571-580
- Margitfalvi, J.L. and Tfirst, E. (1999), "Enantioselective hydrogenation of α -keto esters over cinchona-Pt/Al₂O₃ catalyst. Molecular modelling of the substrate-modifier interaction", *Journal of Molecular Catalysis A: Chemical*, Vol. 139, No. 1, pp. 81-95
- Marshall, J.A. (1996), "Chiral allylic and allenic stannanes as reagents for asymmetric synthesis", *Chemical reviews*, Vol. 96, No. 1, pp. 31-48
- Marshall, J.A. and Tang, Y. (1992), "Catalyzed asymmetric SE' addition of allylstannanes to aldehydes", *Synlett*, Vol. 1992, No. 08, pp. 653-654

- Martinek, T.A., Varga, T., Fülöp, F. and Bartok, M. (2007), "NMR spectroscopic and theoretical evidence of cinchona alkaloid-ketopantolactone complex formation in aprotic solvents: Implications for the mechanism of Pt-catalyzed enantioselective hydrogenation of activated ketones", *Journal of Catalysis*, Vol. 246, No. 2, pp. 266-276
- Mashima, K., Kusano, K.-h., Sato, N., Matsumura, Y.-i., Nozaki, K., Kumobayashi, H., Sayo, N., Hori, Y. and Ishizaki, T. (1994), "Cationic BINAP-Ru (II) Halide Complexes: Highly Efficient Catalysts for Stereoselective Asymmetric Hydrogenation of α - and β -Functionalized Ketones", *The Journal of Organic Chemistry*, Vol. 59, No. 11, pp. 3064-3076
- McCarty, C. and Patai, S. (1970), "the chemistry of the Carbon-Nitrogen double bond", *Interscience, London*, pp. 363-464
- McEvoy, N., Peltekis, N., Kumar, S., Rezvani, E., Nolan, H., Keeley, G.P., Blau, W.J. and Duesberg, G.S. (2012), "Synthesis and analysis of thin conducting pyrolytic carbon films", *Carbon*, Vol. 50, No. 3, pp. 1216-1226
- Meheux, P., Ibbotson, A. and Wells, P. (1991), "Enantioselective hydrogenation: II. variation of activity and optical yield with experimental variables in methyl pyruvate hydrogenation catalyzed by cinchona-modified platinum/silica (EUROPT-1)", *Journal of Catalysis*, Vol. 128, No. 2, pp. 387-396
- Melchionna, M., Marchesan, S., Prato, M. and Fornasiero, P. (2015), "Carbon nanotubes and catalysis: the many facets of a successful marriage", *Catalysis Science & Technology*, Vol. 5, No. 8, pp. 3859-3875
- Menzel, A., Swamy, K., Beer, R., Hanesch, P., Bertel, E. and Birkenheuer, U. (2000), "Electronic structure of a catalyst poison: Br/Pt (110)", *Surface science*, Vol. 454, pp. 88-93
- Mévellec, V., Mattioda, C., Schulz, J., Rolland, J.-P. and Roucoux, A. (2004), "Enantioselective hydrogenation of ethyl pyruvate in biphasic liquid-liquid media by reusable surfactant-stabilized aqueous suspensions of platinum nanoparticles", *Journal of catalysis*, Vol. 225, No. 1, pp. 1-6
- Michalska, Z. and Ostaszewski, B. (1986), "Polyamide-bound metal complex catalysts: synthesis, characterization and catalytic properties", *Journal of organometallic chemistry*, Vol. 299, No. 2, pp. 259-269
- Michalska, Z., Ostaszewski, B., Zientarska, J. and Rynkowski, J. (2002), "Novel polymer-supported platinum catalyst for selective hydrogenation of crotonaldehyde", *Journal of Molecular Catalysis A: Chemical*, Vol. 185, No. 1, pp. 279-283
- Minder, B., Mallat, T., Baiker, A., Wang, G., Heinz, T. and Pfaltz, A. (1995), "A novel aminoalcohol modifier for the enantioselective hydrogenation of ethyl pyruvate on Pt/alumina", *Journal of Catalysis*, Vol. 154, No. 2, pp. 371-378
- Minder, B., Mallat, T., Pickel, K., Steiner, K. and Baiker, A. (1995), "Enantioselective hydrogenation of ethyl pyruvate in supercritical fluids", *Catalysis letters*, Vol. 34, No. 1-2, pp. 1-9
- Minder, B., Mallat, T., Skrabal, P. and Baiker, A. (1994), "Enantioselective hydrogenation of ethyl pyruvate. Influence of oxidative treatment of cinchonidine-modified platinum catalyst and hemiketal formation in alcoholic solvents", *Catalysis letters*, Vol. 29, No. 1-2, pp. 115-124
- Minder, B., Schürch, M., Mallat, T., Baiker, A., Heinz, T. and Pfaltz, A. (1996), "Enantioselective hydrogenation of ethyl pyruvate over Pt/alumina modified by (R)-1-(1-naphthyl) ethylamine derivatives", *Journal of Catalysis*, Vol. 160, No. 2, pp. 261-268
- Molnár, Á., Sárkány, A. and Varga, M. (2001), "Hydrogenation of carbon-carbon multiple bonds: chemo-, regio- and stereo-selectivity", *Journal of Molecular Catalysis A: Chemical*, Vol. 173, No. 1, pp. 185-221
- Morawsky, V., Prüsse, U., Witte, L. and Vorlop, K.-D. (2000), "Transformation of cinchonidine during the enantioselective hydrogenation of ethyl pyruvate to ethyl lactate", *Catalysis Communications*, Vol. 1, No. 1, pp. 15-20
- Motoyama, Y., Okano, M., Narusawa, H., Makihara, N., Aoki, K. and Nishiyama, H. (2001), "Bis (oxazolonyl) phenylrhodium (III) Aqua Complexes: Synthesis, Structure, Enantioselective Allylation of Aldehydes, and Mechanistic Studies", *Organometallics*, Vol. 20, No. 8, pp. 1580-1591
- Nakamura, H., Iwama, H. and Yamamoto, Y. (1996), "Unprecedented highly chemoselective allylation of imines in the presence of aldehydes via a palladium catalyzed allylstannane reaction", *Chemical Communications*, Vol., No. 12, pp. 1459-1460
- Nakamura, H., Nakamura, K. and Yamamoto, Y. (1998), "Catalytic Asymmetric Allylation of Imines via Chiral Bis- π -allylpalladium Complexes", *Journal of the American Chemical Society*, Vol. 120, No. 17, pp. 4242-4243
- Narayanan, R. and El-Sayed, M.A. (2004), "Changing catalytic activity during colloidal platinum nanocatalysis due to shape changes: electron-transfer reaction", *Journal of the American Chemical Society*, Vol. 126, No. 23, pp. 7194-7195

- Narayanan, R. and El-Sayed, M.A. (2004), "Effect of nanocatalysis in colloidal solution on the tetrahedral and cubic nanoparticle shape: electron-transfer reaction catalyzed by platinum nanoparticles", *The Journal of Physical Chemistry B*, Vol. 108, No. 18, pp. 5726-5733
- Narayanan, R. and El-Sayed, M.A. (2005), "Catalysis with transition metal nanoparticles in colloidal solution: nanoparticle shape dependence and stability", *The Journal of Physical Chemistry B*, Vol. 109, No. 26, pp. 12663-12676
- Nørskov, J.K., Abild-Pedersen, F., Studt, F. and Bligaard, T. (2011), "Density functional theory in surface chemistry and catalysis", *Proceedings of the National Academy of Sciences*, Vol. 108, No. 3, pp. 937-943
- Noyori, R. (2002), "Asymmetric catalysis: science and opportunities (Nobel lecture)", *Angewandte Chemie International Edition*, Vol. 41, No. 12, pp. 2008-2022
- Noyori, R. and Ohkuma, T. (2001), "Asymmetric Catalysis by Architectural and Functional Molecular Engineering: Practical Chemo- and Stereoselective Hydrogenation of Ketones", *Angewandte Chemie International Edition*, Vol. 40, No. 1, pp. 40-73
- Noyori, R., Ohkuma, T., Kitamura, M., Takaya, H., Sayo, N., Kumobayashi, H. and Akutagawa, S. (1987), "Asymmetric hydrogenation of β -keto carboxylic esters. A practical, purely chemical access to β -hydroxy esters in high enantiomeric purity", *Journal of the American Chemical Society*, Vol. 109, No. 19, pp. 5856-5858
- Nuss, J.M. and Rennels, R.A. (1993), "Catalysis by Rhodium and Iridium Complexes in the Nucleophilic Addition of Allylic Stannanes to Carbonyl Compounds", *Chemistry Letters*, No. 2, pp. 197-200
- Nyffeler, P.T., Durón, S.G., Burkart, M.D., Vincent, S.P. and Wong, C.H. (2005), "Selectfluor: mechanistic insight and applications", *Angewandte Chemie International Edition*, Vol. 44, No. 2, pp. 192-212
- Ohta, T., Miyake, T., Seido, N., Kumobayashi, H. and Takaya, H. (1995), "Asymmetric hydrogenation of olefins with aprotic oxygen functionalities catalyzed by BINAP-Ru (II) complexes", *The Journal of Organic Chemistry*, Vol. 60, No. 2, pp. 357-363
- Orito, Y., Imai, S. and Niwa, S. (1979), "ASYMMETRIC HYDROGENATION OF METHYL PYRUVATE USING A PLATINUM-CARBON CATALYST MODIFIED WITH CINCHONIDINE", *Chemischer Informationsdienst*, Vol. 10, No. 49
- Orito, Y., Imai, S., Niwa, S. and NGUYENHIAHUNG (1979). Asymmetric hydrogenation of methyl benzoylformate using platinum-carbon catalysts modified with cinchonidine, SOC SYNTHETIC ORGANIC CHEM JPN CHEMISTRY HALL, 1-5 KANDA-SURUGADAI, CHIYODA-KU, TOKYO, 101, JAPAN. 37: 173-174.
- Pan, H., Li, X., Zhang, D., Guan, Y. and Wu, P. (2013), "Pt nanoparticles entrapped in mesoporous metal-organic frameworks MIL-101 as an efficient and recyclable catalyst for the asymmetric hydrogenation of α -ketoesters", *Journal of Molecular Catalysis A: Chemical*, Vol. 377, No., pp. 108-114
- Parish, A. (2011), "Production and application of carbon nanotubes, carbon nanofibers, fullerenes, graphene and nanodiamonds: a global technology survey and market analysis. Innovative Research and Products", *Stamford, Innovative Research and Products Inc*
- Pereira, C.S., Silva, V.M. and Rodrigues, A.E. (2011), "Ethyl lactate as a solvent: properties, applications and production processes—a review", *Green Chemistry*, Vol. 13, No. 10, pp. 2658-2671
- Pettinari, C., Marchetti, F. and Martini, D. (2004), "Metal complexes as hydrogenation catalysts", *Comprehensive Coordination Chemistry II*, Vol. 9, No., pp. 75-139
- Pfaltz, A. and Heinz, T. (1997), "Enantioselective hydrogenation of ethyl pyruvate over Pt/alumina: systematic variation of the modifier structure", *Topics in Catalysis*, Vol. 4, No. 3-4, pp. 229-239
- Phan, N.T., Van Der Sluys, M. and Jones, C.W. (2006), "On the nature of the active species in palladium catalyzed Mizoroki-Heck and Suzuki-Miyaura couplings—homogeneous or heterogeneous catalysis, a critical review", *Advanced Synthesis & Catalysis*, Vol. 348, No. 6, pp. 609-679
- Pirkle, W. and House, D. (1979), "Chiral high-performance liquid chromatographic stationary phases. 1. Separation of the enantiomers of sulfoxides, amines, amino acids, alcohols, hydroxy acids, lactones, and mercaptans", *The Journal of Organic Chemistry*, Vol. 44, No. 12, pp. 1957-1960
- Pradier, C., Birchem, T., Berthier, Y. and Cordier, G. (1994), "Hydrogenation of 3-methyl-butenal on Pt (110); comparison with Pt (111)", *Catalysis letters*, Vol. 29, No. 3-4, pp. 371-378
- Puentes, C.O. and Kouznetsov, V. (2002), "Recent advancements in the homoallylamine chemistry", *Journal of heterocyclic chemistry*, Vol. 39, No. 4, pp. 595-614
- Qiao, X.-C., Zhu, S.-F., Chen, W.-Q. and Zhou, Q.-L. (2010), "Palladium-catalyzed asymmetric umpolung allylation of imines with allylic alcohols", *Tetrahedron: Asymmetry*, Vol. 21, No. 9, pp. 1216-1220
- Rauls, E. and Hammer, B. (2006), "The role of the chiral modifier on the enantioselective hydrogenation of methyl pyruvate on Pt (111)", *Catalysis letters*, Vol. 106, No. 3-4, pp. 111-114

- Rauniyar, V. and Hall, D.G. (2006), "Catalytic Enantioselective and Catalyst-Controlled Diastereofacial-Selective Additions of Allyl- and Crotylboronates to Aldehydes Using Chiral Brønsted Acids", *Angewandte Chemie International Edition*, Vol. 45, No. 15, pp. 2426-2428
- Raynal, M., Portier, F.o., van Leeuwen, P.W. and Bouteiller, L. (2013), "Tunable Asymmetric Catalysis through Ligand Stacking in Chiral Rigid Rods", *Journal of the American Chemical Society*, Vol. 135, No. 47, pp. 17687-17690
- Reith, F., Campbell, S., Ball, A., Pring, A. and Southam, G. (2014), "Platinum in Earth surface environments", *Earth-Science Reviews*, Vol. 131, pp. 1-21
- Rodríguez-Reinoso, F. (1998), "The role of carbon materials in heterogeneous catalysis", *Carbon*, Vol. 36, No. 3, pp. 159-175
- Rodríguez, F., Cohen, C., Ober, C.K. and Archer, L. (2014). *Principles of polymer systems*, CRC Press.
- Rolison, D.R. (2003), "Catalytic nanoarchitectures--the importance of nothing and the unimportance of periodicity", *Science*, Vol. 299, No. 5613, pp. 1698-1701
- Ruey, J.Y. and Van Scott, E.J. (2010). Hydroxy-oligocarboxylic esters: effects on nerve and use for cutaneous and mucocutaneous organs or sites, Google Patents.
- Ruggera, J.F., Merlo, A.B., Diez, R.P. and Casella, M.L. (2016), "Experimental and theoretical investigation of the enantioselective hydrogenation of ethyl pyruvate with a Pt catalyst with new non-cinchona chiral modifiers", *Journal of Molecular Catalysis A: Chemical*, Vol. 423, No., pp. 233-239
- Rylander, P. (2012). *Catalytic hydrogenation over platinum metals*, Elsevier.
- Sain, B., Prajapati, D. and Sandhu, J.S. (1992), "Barbier-type allylation of carbonyl compounds and imines with metallic cadmium", *Tetrahedron letters*, Vol. 33, No. 33, pp. 4795-4798
- Sano, S., Beier, M.J., Mallat, T. and Baiker, A. (2012), "Potential of ionic liquids as co-modifiers in asymmetric hydrogenation on platinum", *Journal of Molecular Catalysis A: Chemical*, Vol. 357, pp. 117-124
- Satoh, T., Onda, K.-i. and Yamakawa, K. (1990), "A novel synthesis of both enantiomers of α -hydroxycarboxylic esters amides from (-)-1-chlorobutyl p-tolyl sulfoxide", *Tetrahedron Letters*, Vol. 31, No. 25, pp. 3567-3570
- Schloegl, R. (2013), "Carbon in catalysis", *Advances in Catalysis*, Vol. 56, No., pp. 103-185
- Schmidt, E., Vargas, A., Mallat, T. and Baiker, A. (2009), "Shape-selective enantioselective hydrogenation on Pt nanoparticles", *Journal of the American Chemical Society*, Vol. 131, No. 34, pp. 12358-12367
- Schrock, R.R. and Osborn, J.A. (1976), "Catalytic hydrogenation using cationic rhodium complexes. I. Evolution of the catalytic system and the hydrogenation of olefins", *Journal of the American Chemical Society*, Vol. 98, No. 8, pp. 2134-2143
- Schürch, M., Heinz, T., Aeschmann, R., Mallat, T., Pfaltz, A. and Baiker, A. (1998), "Design of new modifiers for the enantioselective hydrogenation of ethyl pyruvate", *Journal of Catalysis*, Vol. 173, No. 1, pp. 187-195
- Schwalm, O., Minder, B., Weber, J. and Baiker, A. (1994), "Enantioselective hydrogenation of α -ketoesters over Pt/alumina modified with cinchonidine: theoretical investigation of the substrate-modifier interaction", *Catalysis letters*, Vol. 23, No. 3-4, pp. 271-279
- Schwalm, O., Weber, J., Margitfalvi, J. and Baiker, A. (1993), "Ab initio and semiempirical investigations of the complexation of methyl pyruvate by ammonia and the ammonium cation", *Journal of molecular structure*, Vol. 297, pp. 285-293
- Schwalm, O., Weber, J., Minder, B. and Baiker, A. (1995), "A theoretical investigation of the enantioselective hydrogenation mechanism of α -ketoesters", *Journal of Molecular Structure: THEOCHEM*, Vol. 330, No. 1, pp. 353-357
- Semagina, N. and Kiwi-Minsker, L. (2009), "Recent Advances in the Liquid-Phase Synthesis of Metal Nanostructures with Controlled Shape and Size for Catalysis", *Catalysis Reviews*, Vol. 51, No. 2, pp. 147-217
- Sen, F. and Gökagaç, G. (2007), "Different sized platinum nanoparticles supported on carbon: an XPS study on these methanol oxidation catalysts", *The Journal of Physical Chemistry C*, Vol. 111, No. 15, pp. 5715-5720
- Sermon, P.A. and Azhari, C.H. (1990), "Formation, reactivity and catalytic activity-selectivity of Pt (CL_x)(CONH) _y species prepared by interaction of H₂PtCl₆ with nylon supports", *Journal of Molecular Catalysis*, Vol. 59, No. 2, pp. 267-277
- Sermon, P.A. and Azhari, C.H. (1990), "Formation, reactivity and catalytic activity-selectivity of Pt (CL_x)(CONH) _y species prepared by interaction of H₂PtCl₆ with nylon supports", *Journal of Molecular Catalysis*, Vol. 59, No. 2, pp. 267-277
- Serp, P. (2009). *Carbon nanotubes and nanofibers in catalysis*, John Wiley & Sons, Inc.: Hoboken, NJ.

- Sharma, P. and Sharma, R.K. (2015), "Platinum functionalized multiwall carbon nanotube composites as recyclable catalyst for highly efficient asymmetric hydrogenation of methyl pyruvate", *RSC Advances*, Vol. 5, No. 124, pp. 102481-102487
- Sharma, P. and Sharma, R.K. (2016), "Asymmetric hydrogenation of α -ketoesters on the Pt (111) surface", *New Journal of Chemistry*, Vol. 40, No. 11, pp. 9038-9041
- Sharma, R.K., Nethaji, M. and Samuelson, A.G. (2008), "Asymmetric allylic alkylation by palladium-bisphosphinites", *Tetrahedron: Asymmetry*, Vol. 19, No. 6, pp. 655-663
- Sharma, R.K. and Samuelson, A.G. (2006), "On the key role of water in the allylic activation catalysed by Pd (II) bisphosphinite complexes", *Journal of Chemical Sciences*, Vol. 118, No. 6, pp. 569-573
- Sharma, R.K. and Samuelson, A.G. (2007), "Asymmetric allylation of aldehydes with chiral platinum phosphinite complexes", *Tetrahedron: Asymmetry*, Vol. 18, No. 20, pp. 2387-2393
- Shibata, I., Nose, K., Sakamoto, K., Yasuda, M. and Baba, A. (2004), "Allylic tantalums as highly imine-selective reagents", *The Journal of organic chemistry*, Vol. 69, No. 6, pp. 2185-2187
- Shibata, I., Yoshimura, N., Yabu, M. and Baba, A. (2001), "A Highly syn-Selective Allylation of Aldehydes in Water", *European Journal of Organic Chemistry*, Vol. 2001, No. 17, pp. 3207-3211
- Shibata, N., Ishimaru, T., Suzuki, E. and Kirk, K.L. (2003), "Enantioselective fluorination mediated by N-fluoroammonium salts of cinchona alkaloids: First enantioselective synthesis of BMS-204352 (MaxiPost)", *The Journal of organic chemistry*, Vol. 68, No. 6, pp. 2494-2497
- Shibata, N., Suzuki, E. and Takeuchi, Y. (2000), "A fundamentally new approach to enantioselective fluorination based on cinchona alkaloid derivatives/selectfluor combination", *Journal of the American Chemical Society*, Vol. 122, No. 43, pp. 10728-10729
- Shimizu, M., Kimura, M., Watanabe, T. and Tamaru, Y. (2005), "Palladium-catalyzed allylation of imines with allyl alcohols", *Organic letters*, Vol. 7, No. 4, pp. 637-640
- Silverberg, L.J., Coyle, D.J., Cannon, K.C., Mathers, R.T., Richards, J.A. and Tierney, J. (2016), "Azeotropic Preparation of a C-Phenyl N-Aryl Imine: An Introductory Undergraduate Organic Chemistry Laboratory Experiment", *Journal of Chemical Education*, Vol. 93, No. 5, pp. 941-944
- Simons, K., Ibbotson, A., Johnston, P., Plum, H. and Wells, P. (1994), "Enantioselective Hydrogenation: III. Methyl Pyruvate Hydrogenation Catalyzed by Alkaloid-Modified Iridium", *Journal of Catalysis*, Vol. 150, No. 2, pp. 321-328
- Simons, K.E., Wang, G., Heinz, T., Giger, T., Mallat, T., Pfaltz, A. and Baiker, A. (1995), "A new class of chiral modifiers for the enantioselective hydrogenation of α -ketoesters with Pt/Al₂O₃", *Tetrahedron: Asymmetry*, Vol. 6, No. 2, pp. 505-518
- Soin, N., Roy, S., Ray, S.C. and McLaughlin, J. (2010), "Excitation energy dependence of Raman bands in multiwalled carbon nanotubes", *Journal of Raman Spectroscopy*, Vol. 41, No. 10, pp. 1227-1233
- Soleimani, M. and Kaghazchi, T. (2008), "Adsorption of gold ions from industrial wastewater using activated carbon derived from hard shell of apricot stones—An agricultural waste", *Bioresource Technology*, Vol. 99, No. 13, pp. 5374-5383
- Somorjai, G.A. and Park, J.Y. (2008), "Evolution of the surface science of catalysis from single crystals to metal nanoparticles under pressure", *The Journal of chemical physics*, Vol. 128, No. 18, pp. 182504
- Somorjai, G.A. and Park, J.Y. (2008), "Molecular factors of catalytic selectivity", *Angewandte Chemie International Edition*, Vol. 47, No. 48, pp. 9212-9228
- Song, H., Rioux, R.M., Hoefelmeyer, J.D., Komor, R., Niesz, K., Grass, M., Yang, P. and Somorjai, G.A. (2006), "Hydrothermal growth of mesoporous SBA-15 silica in the presence of PVP-stabilized Pt nanoparticles: synthesis, characterization, and catalytic properties", *Journal of the American Chemical Society*, Vol. 128, No. 9, pp. 3027-3037
- Stellman, J.M. (1998). *Encyclopaedia of occupational health and safety*, International Labour Organization.
- Studer, M., Blaser, H.U. and Exner, C. (2003), "Enantioselective hydrogenation using heterogeneous modified catalysts: an update", *Advanced Synthesis & Catalysis*, Vol. 345, No. 1-2, pp. 45-65
- Studer, M., Burkhardt, S., Indolese, A.F. and Blaser, H.-U. (2000), "Enantio- and chemoselective reduction of 2, 4-diketo acid derivatives with cinchona modified Pt-catalyst—Synthesis of (R)-2-hydroxy-4-phenylbutyric acid ethyl ester", *Chemical Communications*, No. 14, pp. 1327-1328
- Su, D.S. (2011), "20 Years of Carbon Nanotubes", *ChemSusChem*, Vol. 4, No. 7, pp. 811-813
- Sun, Y., Wang, J., LeBlond, C., Landau, R.N. and Blackmond, D.G. (1996), "Asymmetric hydrogenation of ethyl pyruvate: diffusion effects on enantioselectivity", *Journal of Catalysis*, Vol. 161, No. 2, pp. 759-765
- Susut, C., Chapman, G.B., Samjeské, G., Osawa, M. and Tong, Y. (2008), "An unexpected enhancement in methanol electro-oxidation on an ensemble of Pt (111) nanofacets: a case of nanoscale single crystal ensemble electrocatalysis", *Physical Chemistry Chemical Physics*, Vol. 10, No. 25, pp. 3712-3721

- Sutherland, I., Ibbotson, A., Moyes, R. and Wells, P. (1990), "Enantioselective hydrogenation I. Surface conditions during methyl pyruvate hydrogenation catalyzed by cinchonidine-modified platinum/silica (EUROPT-1)", *Journal of Catalysis*, Vol. 125, No. 1, pp. 77-88
- Sutyinszki, M., Szöri, K., Felföldi, K. and Bartók, M. (2002), "98% Enantioselectivity in the asymmetric synthesis of a useful chiral building block by heterogeneous method: Enantioselective hydrogenation of ethyl-benzoylformate over cinchona modified Pt/Al₂O₃ catalysts in the acetic acid", *Catalysis Communications*, Vol. 3, No. 3, pp. 125-127
- Szöllösi, G., Somlai, C., Szabó, P.T. and Bartók, M. (2001), "Heterogeneous asymmetric reactions: Part 21. Amino acid derived modifiers in the enantioselective hydrogenation of ethyl pyruvate over supported platinum catalyst", *Journal of Molecular Catalysis A: Chemical*, Vol. 170, No. 1, pp. 165-173
- Takahashi, J.-i., Shinjima, H., Seyama, M., Ueno, Y., Kaneko, T., Kobayashi, K., Mita, H., Adachi, M., Hosaka, M. and Katoh, M. (2009), "Chirality emergence in thin solid films of amino acids by polarized light from synchrotron radiation and free electron laser", *International journal of molecular sciences*, Vol. 10, No. 7, pp. 3044-3064
- Takeda, K., Oohara, T., Anada, M., Nambu, H. and Hashimoto, S. (2010), "A Polymer-Supported Chiral Dirhodium (II) Complex: Highly Durable and Recyclable Catalyst for Asymmetric Intramolecular C-H Insertion Reactions", *Angewandte Chemie International Edition*, Vol. 49, No. 39, pp. 6979-6983
- Taskinen, A., Nieminen, V., Hotokka, M. and Murzin, D.Y. (2007), "The role of modifier structure in heterogeneous enantioselective hydrogenation: One-to-one interactions of 1-phenyl-1, 2-propanedione and methyl pyruvate with modifiers on the Pt (111) surface", *The Journal of Physical Chemistry C*, Vol. 111, No. 13, pp. 5128-5140
- Tai, A., Sugimura, T., De Vos, D., Vankelecom, I. and Jacobs, P. (2000), "Chiral Catalyst Immobilization and Recycling", by DE De Vos, IFJ Vankelecom, and PA Jacobs, Wiley-VCH, pp. 173
- Tauster, S., Fung, S. and Garten, R. (1978), "Strong metal-support interactions. Group 8 noble metals supported on titanium dioxide", *Journal of the American Chemical Society*, Vol. 100, No. 1, pp. 170-175
- Teichner, S., Hoang-Van, C. and Astier, M. (1982), "Properties of Noble Metals Supported on Polyamides and on Transition Metal Carbides", *Studies in Surface Science and Catalysis*, Vol. 11, No., pp. 121-140
- Teranishi, T., Kurita, R. and Miyake, M. (2000), "Shape control of Pt nanoparticles", *Journal of Inorganic and Organometallic Polymers*, Vol. 10, No. 3, pp. 145-156
- Tomioka, K., Inoue, I., Shindo, M. and Koga, K. (1990), "Asymmetric organolithium additions to imines", *Tetrahedron letters*, Vol. 31, No. 46, pp. 6681-6684
- Török, B., Balázsik, K., Szöllösi, G., Felföldi, K. and Bartók, M. (1999), "Ultrasonics in asymmetric syntheses. Sonochemical enantioselective hydrogenation of prochiral C=O groups over platinum catalysts", *Chirality*, Vol. 11, No. 5-6, pp. 470-474
- Török, B., Felföldi, K., Szakonyi, G. and Bartók, M. (1997), "Sonochemical enantioselective hydrogenation of ethyl pyruvate over platinum catalysts", *Ultrasonics sonochemistry*, Vol. 4, No. 4, pp. 301-304
- Touchette, K.M. (2006), "Reductive amination: A remarkable experiment for the organic laboratory", *Journal of Chemical Education*, Vol. 83, No. 6, pp. 929
- Toukoniitty, E. and Murzin, D.Y. (2004), "Effect of cinchonidine and dissolved oxygen in continuous enantioselective hydrogenation of ethyl pyruvate", *Catalysis letters*, Vol. 93, No. 3-4, pp. 171-176
- Toy, M.S. (1967), "Stereoregular condensation polymers. I. Synthesis and comparison of optically active and inactive polycamphorates and polycamphoramides", *Journal of Polymer Science Part A-1: Polymer Chemistry*, Vol. 5, No. 10, pp. 2481-2486
- Trost, B.M. and Verhoeven, T.R. (1976), "New synthetic reactions. Catalytic vs. stoichiometric allylic alkylation. Stereocontrolled approach to steroid side chain", *Journal of the American Chemical Society*, Vol. 98, No. 2, pp. 630-632
- Tsang, S., Chen, Y., Harris, P. and Green, M. (1994), "A simple chemical method of opening and filling carbon nanotubes", *Nature*, Vol. 372, No. 6502, pp. 159-162
- Tsuji, J. (1969), "Carbon-carbon bond formation via palladium complexes", *Accounts of Chemical Research*, Vol. 2, No. 5, pp. 144-152
- Tsuji, J. (1986), "New general synthetic methods involving π -allylpalladium complexes as intermediates and neutral reaction conditions", *Tetrahedron*, Vol. 42, No. 16, pp. 4361-4401
- Tulashie, S.K., Lorenz, H. and Seidel-Morgenstern, A. (2009), "Potential of chiral solvents for enantioselective crystallization. 2. Evaluation of kinetic effects", *Crystal Growth and Design*, Vol. 9, No. 5, pp. 2387-2392
- Tungler, A., Tarnai, T., Máthé, T. and Petró, J. (1991), "Enantioselective hydrogenation of ethyl pyruvate", *Journal of molecular catalysis*, Vol. 70, No. 3, pp. L5-L8

- Vallerot, J.-M., Bourrat, X., Mouchon, A. and Chollon, G. (2006), "Quantitative structural and textural assessment of laminar pyrocarbons through Raman spectroscopy, electron diffraction and few other techniques", *Carbon*, Vol. 44, No. 9, pp. 1833-1844
- Vankelecom, I.F. and Jacobs, P.A. (2000), "Catalyst immobilization on inorganic supports", *Chiral Catalyst Immobilization and Recycling*, pp. 19-42
- Venugopal, A. (2016), "Hydrogenation for Fine Chemical Synthesis: Status and Future Perspectives", *Industrial Catalytic Processes for Fine and Specialty Chemicals*, pp. 427
- Vincent, S.P., Burkart, M.D., Tsai, C.-Y., Zhang, Z. and Wong, C.-H. (1999), "Electrophilic fluorination-nucleophilic addition reaction mediated by Selectfluor: Mechanistic studies and new applications", *The Journal of Organic Chemistry*, Vol. 64, No. 14, pp. 5264-5279
- Vineyard, B.D., Knowles, W.S. and Sabacky, M.J. (1983), " α -Amino acids by catalytic asymmetric hydrogenation", *Journal of Molecular Catalysis*, Vol. 19, No. 2, pp. 159-169
- Wang, D.-K., Dai, L.-X. and Hou, X.-L. (1995), "Allylstannane Allylation of Aldimines Activated by Chlorotrimethylsilane", *Tetrahedron letters*, Vol. 36, No. 47, pp. 8649-8652
- Wang, D.-K., Dai, L.-X., Hou, X.-L. and Zhang, Y. (1996), "Mg and Zn mediated allylation of imines with allyl bromide", *Tetrahedron letters*, Vol. 37, No. 24, pp. 4187-4188
- Wang, G., Heinz, T., Pfaltz, A., Minder, B., Mallat, T. and Baiker, A. (1994), "New chiral modifiers for the enantioselective hydrogenation of ethyl pyruvate over Pt/Al₂O₃ catalysts", *Journal of the Chemical Society, Chemical Communications*, No. 18, pp. 2047-2048
- Wang, W.-B., Lu, S.-M., Yang, P.-Y., Han, X.-W. and Zhou, Y.-G. (2003), "Highly enantioselective iridium-catalyzed hydrogenation of heteroaromatic compounds, quinolines", *Journal of the American Chemical Society*, Vol. 125, No. 35, pp. 10536-10537
- Wang, Y.-J., Wilkinson, D.P. and Zhang, J. (2011), "Noncarbon support materials for polymer electrolyte membrane fuel cell electrocatalysts", *Chemical reviews*, Vol. 111, No. 12, pp. 7625-7651
- Wang, Y., Alsmeyer, D.C. and McCreery, R.L. (1990), "Raman spectroscopy of carbon materials: structural basis of observed spectra", *Chemistry of Materials*, Vol. 2, No. 5, pp. 557-563
- Wang, Y., Meng, L., Fan, L., Wu, G., Ma, L., Zhao, M. and Huang, Y. (2016), "Carboxyl functionalization of carbon fibers via aryl diazonium reaction in molten urea to enhance interfacial shear strength", *Applied Surface Science*, Vol. 362, pp. 341-347
- Wehrli, J., Baiker, A., Monti, D. and Blaser, H. (1989), "Particle size effect on enantioselective hydrogenation of ethyl pyruvate over alumina-supported platinum catalyst", *Journal of molecular catalysis*, Vol. 49, No. 2, pp. 195-203
- Weng, Z. and Zaera, F. (2014), "Increase in activity and selectivity in catalysis via surface modification with self-assembled monolayers", *The Journal of Physical Chemistry C*, Vol. 118, No. 7, pp. 3672-3679
- Wilde, G. (2009). *Nanostructured materials*, Elsevier.
- Wilhelmus, A. (1993), "New enantioselective reactions catalysed by cinchonidine-modified platinum", *Journal of the Chemical Society, Chemical Communications*, No. 13, pp. 1053-1054
- Wilhelmus, A. (1994), "Novel alkaloid modifiers for enantioselective heterogeneous catalysis", *Journal of the Chemical Society, Chemical Communications*, No. 21, pp. 2431-2432
- Xia, Y., Xiong, Y., Lim, B. and Skrabalak, S.E. (2009), "Shape-Controlled Synthesis of Metal Nanocrystals: Simple Chemistry Meets Complex Physics", *Angewandte Chemie International Edition*, Vol. 48, No. 1, pp. 60-103
- Xing, Y. (2004), "Synthesis and electrochemical characterization of uniformly-dispersed high loading Pt nanoparticles on sonochemically-treated carbon nanotubes", *The Journal of Physical Chemistry B*, Vol. 108, No. 50, pp. 19255-19259
- Xiong, W., Ma, H., Hong, Y., Chen, H. and Li, X. (2005), "Enantioselective hydrogenation of ethyl pyruvate catalyzed by alumina support rhodium modified with quinine", *Tetrahedron: Asymmetry*, Vol. 16, No. 8, pp. 1449-1452
- Yadav, J., Reddy, B., Krishna, A., Sadasiv, K. and Chary, C.J. (2003), "Ceric (IV) Ammonium Nitrate: A Novel Reagent for the Synthesis of Homoallyl Alcohols", *Chemistry Letters*, Vol. 32, No. 3, pp. 248-249
- Yamaguchi, H., Ueno, H. and Minoura, Y. (1971), "Optically active copolyamides by interfacial condensation polymerization", *Journal of Polymer Science Part A-1: Polymer Chemistry*, Vol. 9, No. 4, pp. 897-909
- Yamamoto, Y. (2007), "From σ -to π -electrophilic lewis acids. Application to selective organic transformations", *The Journal of organic chemistry*, Vol. 72, No. 21, pp. 7817-7831
- Yamamoto, Y. and Asao, N. (1993), "Selective reactions using allylic metals", *Chemical reviews*, Vol. 93, No. 6, pp. 2207-2293

- Yanagisawa, A., Ishiba, A., Nakashima, H. and Yamamoto, H. (1997), "Enantioselective Addition of Methallyl- and Crotylins to Aldehydes Catalyzed by BINAP \times Ag (I) Complex", *Synlett*, Vol. 1, No. 01, pp. 88-90
- Yanagisawa, A., Nakamura, Y. and Arai, T. (2004), " α -Amino acid-promoted asymmetric allylation of aldehydes with allylstannanes", *Tetrahedron: Asymmetry*, Vol. 15, No. 12, pp. 1909-1913
- Yang, H.G., Sun, C.H., Qiao, S.Z., Zou, J., Liu, G., Smith, S.C., Cheng, H.M. and Lu, G.Q. (2008), "Anatase TiO₂ single crystals with a large percentage of reactive facets", *Nature*, Vol. 453, No. 7195, pp. 638-641
- Yashima, E., Maeda, K., Iida, H., Furusho, Y. and Nagai, K. (2009), "Helical polymers: synthesis, structures, and functions", *Chemical reviews*, Vol. 109, No. 11, pp. 6102-6211
- Yasuda, M., Sugawa, Y., Yamamoto, A., Shibata, I. and Baba, A. (1996), "Allylic tin (IV)-tin (II) chloride-acetonitrile as a novel system for allylation of carbonyls or imines", *Tetrahedron letters*, Vol. 37, No. 33, pp. 5951-5954
- Yasukawa, T., Kuremoto, T., Miyamura, H. and Kobayashi, S. (2016), "Asymmetric Arylation of Imines Catalyzed by Heterogeneous Chiral Rhodium Nanoparticles", *Organic letters*, Vol. 18, No. 11, pp. 2716-2718
- Yoon, T.P. and Jacobsen, E.N. (2003), "Privileged chiral catalysts", *Science*, Vol. 299, No. 5613, pp. 1691-1693
- Yu, W., Lou, L.-L., Yu, K., Li, S., Shi, Y. and Liu, S. (2016), "Pt nanoparticles stabilized by thermosensitive polymer as effective and recyclable catalysts for the asymmetric hydrogenation of ethyl pyruvate", *RSC Advances*, Vol. 6, No. 57, pp. 52500-52508
- Zeng, J., Xia, X., Rycenga, M., Henneghan, P., Li, Q. and Xia, Y. (2011), "Successive deposition of silver on silver nanoplates: lateral versus vertical growth", *Angewandte Chemie International Edition*, Vol. 50, No. 1, pp. 244-249
- Zhang, D., Song, C., Deng, J. and Yang, W. (2012), "Chiral microspheres consisting purely of optically active helical substituted polyacetylene: the first preparation via precipitation polymerization and application in enantioselective crystallization", *Macromolecules*, Vol. 45, No. 18, pp. 7329-7338
- Zhang, J., Guo, S., Wei, J., Xu, Q., Yan, W., Fu, J., Wang, S., Cao, M. and Chen, Z. (2013), "High-Efficiency Encapsulation of Pt Nanoparticles into the Channel of Carbon Nanotubes as an Enhanced Electrocatalyst for Methanol Oxidation", *Chemistry—A European Journal*, Vol. 19, No. 47, pp. 16087-16092
- Zhang, S., Nguyen, L., Liang, J.-X., Shan, J., Liu, J., Frenkel, A.I., Patlolla, A., Huang, W., Li, J. and Tao, F. (2015), "Catalysis on singly dispersed bimetallic sites", *Nature communications*, Vol. 6, pp. 7938
- Zhang, X., Li, Q., Xiao, M. and Liu, Y. (2014), "Effective one-step reduction of Pt/alumina-carbon catalysts for asymmetric hydrogenation of α -ketoesters", *Applied Catalysis A: General*, Vol. 480, pp. 50-57
- Zhang, Y. and Riduan, S.N. (2012), "Functional porous organic polymers for heterogeneous catalysis", *Chem. Soc. Rev.*, Vol. 41, No. 6, pp. 2083-2094
- Zhang, Y., Yan, T., Cheng, W., Zuo, J. and Zhao, W. (2009), "Solvent-free allylation and benzylation of aldimines mediated by zinc powder", *Tetrahedron Letters*, Vol. 50, No. 24, pp. 2925-2928
- Zhao, Y.-S., Liu, Q., Tian, P., Tao, J.-C. and Lin, G.-Q. (2015), "Copper-catalyzed asymmetric allylation of chiral N-tert-butanesulfinyl imines: dual stereocontrol with nearly perfect diastereoselectivity", *Organic & biomolecular chemistry*, Vol. 13, No. 14, pp. 4174-4178
- Zhao, Y.X., Li, Z.Y., Yuan, Z., Li, X.N. and He, S.G. (2014), "Thermal methane conversion to formaldehyde promoted by single platinum atoms in Pt/Al₂O₄⁻ cluster anions", *Angewandte Chemie International Edition*, Vol. 53, No. 36, pp. 9482-9486
- Zhou, K. and Li, Y. (2012), "Catalysis based on nanocrystals with well-defined facets", *Angewandte Chemie International Edition*, Vol. 51, No. 3, pp. 602-613
- Zhou, X., Qiao, J., Yang, L. and Zhang, J. (2014), "A Review of Graphene-Based Nanostructural Materials for Both Catalyst Supports and Metal-Free Catalysts in PEM Fuel Cell Oxygen Reduction Reactions", *Advanced Energy Materials*, Vol. 4, No. 8, pp. 1301523
- Zhou, Z.Y., Huang, Z.Z., Chen, D.J., Wang, Q., Tian, N. and Sun, S.G. (2010), "High-Index Faceted Platinum Nanocrystals Supported on Carbon Black as Highly Efficient Catalysts for Ethanol Electrooxidation", *Angewandte Chemie International Edition*, Vol. 49, No. 2, pp. 411-414

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