



Pavel Kočovský – Representative Publications

Total >250; Hirsch index = 53; papers cited $\geq 100\times$ (27 in total) are marked with *; ~40 citations per paper.

Credo: Man reist nicht, um anzukommen, sondern um zu reisen. (J. W. Goethe)

- (1) Carbamates: A Method of Synthesis and Some Synthetic Applications
Kočovský, P. *Tetrahedron Lett.* **1986**, 27, 5521. *
- (2) The First Observation of Syn-Anti Dichotomy in the Formation of (π -Allyl)palladium Complexes
Starý, I.; **Kočovský, P.** *J. Am. Chem. Soc.* **1989**, 111, 4981.
- (3) Synthesis of Strophanthidin
Kočovský, P.; Stieborová, I. *Tetrahedron Lett.* **1989**, 30, 4295.
- (4) Steric Control of Epoxidation by Carbamate and Amide Groups. An Evidence for the Carbonyl-Directed Epoxidation
Kočovský, P.; Starý, I. *J. Org. Chem.* **1990**, 55, 3236.
- (5) Corner Attack on Cyclopropane by Thallium(III) Ions. A Highly Stereospecific Cleavage and Skeletal Rearrangement of 3 α ,5-Cyclo-5 α -cholestan-6 α -ol
Kočovský, P.; Pour, M.; Gogoll, A.; Hanuš, V.; Smrčina, M. *J. Am. Chem. Soc.* **1990**, 112, 6735.
- (6) Stereo- and Regiocontrol of Electrophilic Additions to Cyclohexene Systems by Neighboring Groups. Competition of Electronic and Stereoelectronic Effects and Comparison of the Reactivity of Selected Electrophiles
Kočovský, P.; Pour, M. *J. Org. Chem.* **1990**, 50, 5580.
- (7) Synthesis of Enantiomerically Pure 2,2'-Dihydroxy-1,1'-binaphthyl, 2,2'-Diamino-1,1'-binaphthyl, and 2-Amino-2'-hydroxy-1,1'-binaphthyl. Comparison of Processes Operating as Diastereoselective Crystallization and as Second Order Asymmetric Transformation
Smrčina, M.; Lorenc, M.; Hanuš, V.; Sedmera, P.; **Kočovský, P.** *J. Org. Chem.* **1992**, 57, 1917. *
- (8) Synthesis of Enantiomerically Pure Binaphthyl Derivatives. Mechanism of the Enantioselective Binaphthyl Coupling and Designing a Catalytic Cycle
Smrčina, M.; Poláková, J.; Vyskočil, Š.; **Kočovský, P.** *J. Org. Chem.* **1993**, 58, 4534. *
- (9) Corner Opening of Cyclopropanes by Mercury(II) and Thallium(III) and Transmetalation of the Intermediate Organomercurials. A Novel, Stereoselective Approach to Cyclobutanes and Cyclopropanes
Kočovský, P.; Šrogl, J.; Pour, M.; Gogoll, A. *J. Am. Chem. Soc.* **1994**, 116, 186.
- (10) Stereoelectronically Controlled, Thallium(III)-Mediated C-19 Degradation of 19-Hydroxy Steroids. An Expedient Route to Estrone and its Congeners via 19-Nor-10 β -hydroxy Intermediates
Kočovský, P.; Baines, R. S. *J. Org. Chem.* **1994**, 59, 5439.
- (11) Stereochemistry of the Molybdenum(0)-Catalyzed Allylic Substitution: The First Observation of a Syn-Syn Mechanism
Dvořák, D.; Starý, I.; **Kočovský, P.** *J. Am. Chem. Soc.* **1995**, 117, 6130.
- (12) The S_N2 Reaction in Solid State. An Unusual, B_{Al}2 Aminolysis of an Ester Group in Crystalline (\pm)-2-Amino-2'-hydroxy-3'-(methoxycarbonyl)-1,1'-binaphthyl Elucidated by X-Ray Diffraction and Isotope Labeling. New Experimental Evidence for Linearity in S_N2 Substitution
Smrčina, M.; Vyskočil, Š.; Hanuš, V.; Polášek, M.; Langer, V.; Zax, D. B.; Chew, B. G. M.; Verrier, H.; Harper, K.; Claxton, T. A.; **Kočovský, P.** *J. Am. Chem. Soc.* **1996**, 118, 487.
- (13) Ruthenium-Catalyzed Oppenauer-Type Oxidation of 3 β -Hydroxy-Steroids. A Highly Efficient Entry into the Steroid Hormones with the 4-en-3-one Functionality
Almeida, M. L. S.; **Kočovský, P.**; Bäckvall, J.-E. *J. Org. Chem.* **1996**, 61, 6587.
- (14) The Stereochemical Dichotomy in Palladium(0)- and Nickel(0)-Catalyzed Allylic Substitution
Farthing, C. N.; **Kočovský, P.** *J. Am. Chem. Soc.* **1998**, 120, 6661.

- (15) Synthesis of *N*-Alkylated and *N*-Arylated Derivatives of 2-Amino-2'-hydroxy-1,1'-binaphthyl (NOBIN) and 2,2'-Diamino-1,1'-binaphthyl and their Application in the Enantioselective Addition of Diethylzinc to Aromatic Aldehydes
Vyskočil, Š.; Jaracz, J.; Smrčina, M.; Štícha, M.; Hanuš, V.; Polášek, M.; **Kočovský, P.** *J. Org. Chem.* **1998**, *63*, 7727. *
- (16) Derivatives of 2-Amino-2'-diphenylphosphino-1,1'-binaphthyl (MAP) and their Application in Asymmetric Palladium(0)-Catalyzed Allylic Substitution
Vyskočil, Š.; Smrčina, M.; Hanuš, V.; Polášek, M.; **Kočovský, P.** *J. Org. Chem.* **1998**, *63*, 7738. *
- (17) Palladium(II) Complexes of 2-Dimethylamino-2'-diphenylphosphino-1,1'-binaphthyl (MAP) with Unique P,C_σ-Coordination and Their Catalytic Activity in Allylic Substitution, Hartwig-Buchwald Amination, and Suzuki Coupling
Kočovský, P.; Vyskočil, Š.; Císařová, I.; Sejbal, J.; Tišlerová, I.; Smrčina, M.; Lloyd-Jones, G. C.; Stephen, S. C.; Butts, C. P.; Murray, M.; Langer, V. *J. Am. Chem. Soc.* **1999**, *121*, 7714. *
- (18) An Approach Toward the Triquinane-Type Skeleton via a Reagent-Controlled Skeletal Rearrangement. A Facile Method for Protection-Deprotection of Organomercurials, Tuning the Selectivity of Wagner-Meerwein Migrations, and a New Route to Annulated Lactones
Kočovský, P.; Dunn, V.; Gogoll, A.; Langer, V. *J. Org. Chem.* **1999**, *64*, 101.
- (19) Diastereoisomeric Cationic π -allyl-Pd-(*P,C*)-MAP and MOP Complexes and their Relationship to Stereochemical Memory Effects in Allylic Alkylation
Lloyd-Jones, G. C.; Stephen, S. C.; Murray, M.; Butts, C. P.; Vyskočil, Š.; **Kočovský, P.** *Chem. Eur. J.* **2000**, *6*, 4348. *
- (20) Synthesis of New Chiral 2,2'-Bipyridyl-Type Ligands, their Coordination to Molybdenum(0), Copper (II), and Palladium(II), and Application in Asymmetric Allylic Substitution, Allylic Oxidation, and Cyclopropanation
Malkov, A. V.; Baxendale, I. R.; Bella, M.; Langer, V.; Fawcett, J.; Russell, D. R.; Mansfield, D. J.; Valko, M.; **Kočovský, P.** *Organometallics* **2001**, *20*, 673. *
- (21) Chiral 2,2'-Bipyridine-Type *N*-Oxides as Catalysts in the Enantioselective Allylation of Aldehydes with Allyltrichlorosilane
Malkov, A. V.; Orsini, M.; Pernazza, D.; Muir, K. W.; Langer, V.; Meghani, P.; **Kočovský, P.** *Org. Lett.* **2002**, *4*, 1047. *
- (22) Analysis of Stereochemical Convergence and Halide Effects in Asymmetric Pd-Catalysed Allylic Alkylation Reactions by Memory Effects: Ionic Bidentate versus Neutral Monodentate 'Pd-MAP' and 'Pd-MOP' Intermediates
Fairlamb, I. J. S.; Lloyd-Jones, G. C.; Vyskočil, Š.; **Kočovský, P.** *Chem. Eur. J.* **2002**, *8*, 4443.
- (23) Chiral Quinoline-Type *N*-Oxide QUINOX as Organocatalyst in the Enantioselective Allylation of Electron-Poor Aromatic Aldehydes with Allyltrichlorosilanes: The Role of Arene-Arene Interactions
Malkov, A. V.; Dufková, L.; Farrugia, L.; **Kočovský, P.** *Angew. Chem. Int. Ed.* **2003**, *42*, 3674. *
- (24) Synthesis of α -Amino Acids via Asymmetric Phase Transfer-Catalyzed Alkylation of Achiral Nickel(II) Complexes of Glycine-Derived Schiff Bases
Belokon, Y. N.; Bupalova, N. B.; Churkina, T. D.; Císařová, I.; Ezernitskaya, M. G.; Harutyunyan, S. R.; Hrdina, R.; Kagan, H. B.; **Kočovský, P.**; Kochetkov, K. A.; Larionov, O. V.; Lyssenko, K. A.; North, M.; Peregudov, A. S.; Prisyazhnyuk, V. V.; Vyskočil, Š. *J. Am. Chem. Soc.* **2003**, *125*, 12860. *
- (25) New Lewis-Basic *N*-Oxides as Chiral Organocatalysts In Asymmetric Allylation of Aldehydes
Malkov, A. V.; Bell, M.; Orsini, M.; Pernazza, D.; Massa, A.; Herrmann, P.; Meghani, P.; **Kočovský, P.** *J. Org. Chem.* **2003**, *68*, 9659.
- (26) Role of Noncovalent Interactions in the Enantioselective Reduction of Aromatic Ketimines with Trichlorosilane
Malkov, A. V.; Mariani, A.; MacDougall, K. N.; **Kočovský, P.** *Org. Lett.* **2004**, *6*, 2253. *
- (27) METHOX – a New Pyridine *N*-Oxide Organocatalyst for the Asymmetric Allylation of Aldehydes with Allyltrichlorosilanes
Malkov, A. V.; Bell, M.; Castelluzzo, F.; **Kočovský, P.** *Org. Lett.* **2005**, *7*, 3219. *

- (28) Remote Chiral Induction in the Organocatalytic Hydrosilylation of Aromatic Ketones and Ketimines
Malkov, A. V.; Stewart Liddon, A. J. P.; Ramírez-López, P.; Bendová, L.; Haigh, D.; **Kočovský, P.** *Angew. Chem. Int. Ed.* **2006**, *45*, 1432. *
- (29) Asymmetric Allylic Substitution Catalyzed by C_1 -Symmetrical Complexes of Molybdenum: Structural Requirements of the Ligand and Stereochemical Course of Reaction
Malkov, A. V.; Gouriou, L.; Lloyd-Jones, G. C.; Starý, I.; Langer, V.; Spoor, P.; Vinader, V.; **Kočovský, P.** *Chem. Eur. J.* **2006**, *12*, 6910.
- (30) Enantioselective Synthesis of 1,2-Diarylaziridines via Organocatalytic Reductive Amination of α -Chloro Ketones
Malkov, A. V.; Stončius, S.; **Kočovský, P.** *Angew. Chem. Int. Ed.* **2007**, *46*, 3722.
- (31) Amino Alcohols as Organocatalysts in Asymmetric Cross-Aldol Reaction of Ketones: Application in the Synthesis of Convolutamydine A
Malkov, A. V.; Kabeshov, M. A.; Bella, M.; Kysilka, O.; Malyshev, D. A.; Pluháčková, K.; **Kočovský, P.** *Org. Lett.* **2007**, *9*, 5473. *
- (32) On the Mechanism of Asymmetric Allylation of Aldehydes with Allyltrichlorosilanes Catalyzed by QUINOX, a Chiral Isoquinoline *N*-Oxide
Malkov, A. V.; Bell, M.; Ramírez-López, P.; Biedermannová, L.; Rulišek, L.; Dufková, L.; Kotora, M.; Zhu, F.; **Kočovský, P.** *J. Am. Chem. Soc.* **2008**, *130*, 5341. *
- (33) Dynamic Kinetic Resolution in the Asymmetric Synthesis of β -Amino Acids by Organocatalytic Reduction of Enamines
Malkov, A. V.; Stončius, S.; Vranková, K.; Arndt, M.; **Kočovský, P.** *Chem. Eur. J.* **2008**, *14*, 8082.
- (34) Asymmetric Reduction of Imines with Trichlorosilane Catalyzed by Amino Acid-Derived Formamides: Scope and Limitations
Malkov, A. V.; Vranková, K.; Stončius, S.; **Kočovský, P.** *J. Org. Chem.* **2009**, *74*, 5839. *
- (35) Mechanistic Dichotomy in the Asymmetric Allylation of Aldehydes with Allyltrichlorosilanes Catalyzed by Chiral Pyridine *N*-Oxides
Malkov, A. V.; Stončius, S.; Bell, M.; Castelluzzo, F.; Ramírez-López, P.; Biedermannová, L.; Rulišek, L.; Langer, V.; **Kočovský, P.** *Chem. Eur. J.* **2013**, *19*, 9167.
- (36) Palladium Catalyzed Alkoxyacylation of Terminal Alkenes to Produce α,β -Unsaturated Esters: The Key Role of Acetonitrile as a Ligand
Malkov, A. V.; Derrien, N.; Barlóg, M.; **Kočovský, P.** *Chem. Eur. J.* **2014**, *20*, 4542.
- (37) Cross-Aldol Reaction of Ketones Catalyzed by Leucinol: A Mechanistic Investigation
Kabeshov, M. A.; Kysilka, O.; Rulišek, L.; Sulejmanov, Y. V.; Bella, M.; Malkov, A. V.; **Kočovský, P.** *Chem. Eur. J.* **2015**, *21*, 12026. (*Hot paper + cover page*)
- (38) A New Insight into the Stereoelectronic Control of the Pd(0)-Catalyzed Allylic Substitution: Application for the Synthesis of Multisubstituted Pyran-2-ones via an Unusual 1,3-Transposition
Brůža, Z.; Kratochvíl, J.; Harvey, J. N.; Rulišek, L.; Nováková, L.; Maříková, J.; Kuneš, J.; **Kočovský, P.**; Pour, M. *Chem. Eur. J.* **2019**, *25*, 8053. (*Hot paper + cover page*)
- (39) Reaction Outcome Critically Dependent on the Method of Workup: An Example from the Synthesis of 1-Isoquinolones
Matouš, P.; Májek, M.; Kysilka, O.; Kuneš, J.; Maříková, J.; Růžička, A.; Pour, M.; **Kočovský, P.** *J. Org. Chem.* **2021**, *86*, 8078. (*Cover page*)
- (40) Reductive Amination Revisited: Reduction of Aldimines with Trichlorosilane Catalyzed by Dimethylformamide – Functional Groups Tolerance, Scope, and Limitations
Popov, K. K.; Campbell, J. L. P.; Kysilka, O.; Hošek, J.; Davies, C.; Pour, M.; **Kočovský, P.** *J. Org. Chem.* **2022**, *87*, 920. (*Cover page*)

Books

- (1) **Kočovský, P.**; Tureček, F.; Hájiček, J.: *Synthesis of Natural Products: Problems of Stereoselectivity*, Vol. 1 and 2, CRC Press, Boca Raton, Florida **1986**.
- (2) **Kočovský, P.**: Electrophilic Additions to C=X Bonds, In: *Chemistry of Functional Groups; Supp. A3: The Chemistry of Double-Bonded Functional Groups* (S. Patai, Ed.); J. Wiley & Sons, Chichester **1997**, p 1135.
- (3) **Kočovský, P.**; Starý, I.: Rearrangements of Allylpalladium and Related Derivatives, In: *Organopalladium Chemistry for Organic Synthesis*, (E. Negishi, Ed.), J. Wiley & Sons: New York **2002**, p. 2011.
- (4) **Kočovský, P.**; Malkov, A. V.: Chiral Lewis Bases as Catalysts, In: *Enantioselective Organocatalysis – Reactions and Experimental Procedures* (P. I. Dalko, Ed.), Wiley–VCH, Weinheim: **2007**; p 255.
- (5) **Kočovský, P.**; Stončius, S.: Reduction of Imines with Trichlorosilane Catalyzed by Chiral Lewis Bases, In: *Chiral Amine Synthesis (Methods, Developments and Applications)* (T. Nugent, Ed.), J. Wiley & Sons: Chichester **2010**, p. 131.
- (6) **Kočovský, P.**; Malkov, A. V.: Chiral Lewis Bases as Catalysts, In: *Comprehensive Enantioselective Organocatalysis – Catalysts, Reactions, and Applications* (P. I. Dalko, Ed.), Wiley–VCH, Weinheim: **2013**; Vol. 2, p 381.
- (7) Malkov A. V.; **Kočovský, P.**: Lewis Base-Catalyzed Reactions of SiX₃-Based Reagents with C=O, C=N ($n \rightarrow \sigma^*$), in: *Lewis Base Catalysis in Organic Synthesis*, (E. Vedejs, S. E. Denmark, Eds.), Wiley-VCH: New York **2016**, Vol. 3, 1013-1037.
- (8) **Kočovský, P.**; Malkov A. V.: Lewis Base-Catalysts in the Reduction of Imines and Ketones with Silanes ($n \rightarrow \sigma^*$), in: *Lewis Base Catalysis in Organic Synthesis*, (E. Vedejs, S. E. Denmark, Eds.), Wiley-VCH: New York **2016**, Vol. 3, 1077-1112.
- (9) **Kočovský, P.**: Addition Reactions – Polar Additions, In: *Organic Reaction Mechanisms – 1988- to date* (A. C. Knipe, Ed.), J. Wiley & Sons: Chichester (annual reports; continued).

Selected Reviews

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- (2) Non-Symmetrically Substituted 1,1'-Binaphthyls in Enantioselective Catalysis
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- (3) Chiral N-Oxides in Asymmetric Catalysis
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- (4) Asymmetric Synthesis: From Transition Metals to Organocatalysis
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- (5) C-Nucleosides: Synthetic Strategies and Biological Applications
Štambaský, J.; Hocek, M.; **Kočovský, P.** *Chem. Rev.* **2009**, *109*, 6729. *
- (6) The *syn-anti* Dichotomy in the Palladium-Catalyzed Addition of Nucleophiles to Alkenes
Kočovský, P.; Bäckvall, J.-E. *Chem. Eur. J.* **2015**, *21*, 36.

Personal Recollections

- (1) Laudatio for Professor Otakar Červinka
Kočovský, P. *Collect. Czech. Chem. Commun.* **2000**, *65*, Issue 4, pp. i-vii.
- (2) In Memoriam Václav Černý
Kočovský, P. *Collect. Czech. Chem. Commun.* **2001**, *66*, Issue 12, pp. i-vii.
- (3) Professor Otakar Červinka – In Memoriam
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- (4) Reactivity control in palladium-catalyzed reactions: A personal account
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