List of Publications

1. “Synthesis and Characterization of Methylphosphinediacetic Acid.”

2. “Oxidative Addition of Quinones to Planar Cobalt(II) Dithiolato, Dithioacetylacetonato
   and Schiff-base Complexes.”


4. “Re-examination of the Photochemical Oxidative Decarbonylation of Cr(CO)₆ by ortho-
   Quinones: Low-Temperature Photolysis of Cr(CO)₆ with para- and ortho- Quinone
   Isomers.”

   Synthesis and Characterization of the Unsaturated Mn(CO)₃(DBCat)- Anion.”

6. “Redox properties of [Mn(CO)₃(3,5-di-tert.butyl-catecholate)]⁻: Formation and
   Characterization of a Four-Membered Redox Series.”

7. “Simple Construction of an Infrared Optically Transparent Thin-Layer Electrochemical
   (OTTLE) Cell: Applications to Redox Reactions of Ferrocene, Mn₂(CO)₁₀
   and Mn(CO)₃(3,5-di-tert.butyl-catecholate)]⁻.”

   Resonance Raman Spectra of Re(CO)₄(DBSQ) and Re(CO)₃(PPh₃)(DBSQ) Complexes.”
9. “Nature of the Mn(I)-Dioxolene Bonding as a Function of the Ligand Oxidation State: UV-Vis, IR and Resonance Raman Study of \([\text{Mn(CO)}_3\text{L}_n(\text{Diox})]\)^z, n=0,1; z=-2, -1, 0, +1, and \([\text{Mn(CO)}_2\{(\text{P(OEt)}_3)\}_m(\text{Diox})]\)^z, m=1,2; z= -1, 0, +1, Complexes.”

10. “Rhenium(I) Carbonyl Complexes: Electrochemical and Spectroelectrochemical (Resonance Raman, UV-Vis, IR) Study of \([\text{Re(CO)}_3\text{L}(\text{Diox})]\)^z and \([\text{Re(CO)}_2(\text{PPh}_3)_2\text{L}(\text{Diox})]\)^z (L = CO, PPh_3, P-dppe, THF, Ph_3PO, Me_2CO, py; z = -1, 0, +1) Redox Series.”

11. “Wavelength-Dependent Photosubstitution and Excited-State Dynamics of \([\text{Cr(CO)}_4(2,2’-\text{bipyridine})]\): A Quantum Yield and Picosecond Absorption Study.”

12. “Bond Activation by MLCT Excitation of Organometallic Compounds: Prompt CO-Photodissociation from \([\text{Cr(CO)}_4(\text{bpy})]\).”

13. “Unusually Stable Radical Anionic Complexes \([\text{(CO)}_6\text{MnRe(CO)}_3(\text{BPM})]\)^- , \([\text{(CO)}_3\text{MnRe(CO)}_3(\text{BPM})\text{Re(CO)}_3\text{Br}]^- , [\text{Os}_3(\text{CO})_{10}(\text{BPM})]\)^- , and \([\text{Os}_3(\text{CO})_{10}(\text{BPM})\text{Re(CO)}_3\text{Br}]^- (\text{BPM} = 2,2’-\text{Bipyrimidine})\) Studied with Cyclic Voltammetry and IR Spectroelectrochemistry at Variable Temperatures.”


15. “Spectroelectrochemical (IR, UV-Vis) Determination of the Reduction Pathways for a Series of \([\text{Re(CO)}_3(\alpha-\text{dimine})\text{L}]^{0+/+} (\text{L}’ = \text{Halide, Ott}^-, \text{THF}, \text{MeCN}, \text{n-PrCN}, \text{PPh}_3, \text{P(OMe)}_3)\) Complexes.”
16. “Variable-Temperature IR Spectroelectrochemical Investigation of the Stability of the Metal-Metal Bonded Radical Anions \([\text{(CO)}_5\text{MnRe(CO)}_3(\text{L})]^- \) (L = 2,2’-Bipyridine (BPY), 2,2’ -Bipyrimidine (BPM), 2,3-Bis-(2-Pyridyl)Pyrazine (DPP)) and \([\text{(CO)}_5\text{MnRe(CO)}_3(\text{L})\text{Re(Br)(CO)}_3]^- \) (L = BPM, DPP) Controlled by the Lowest \(\pi^* \) \((\alpha\text{-diimine})\) Orbital Energy.

17. “Spectroscopic Characterization of Some Unstable ortho- Semiquinone and ortho-Quinone Complexes of Mn(I) by Variable-Temperature Thin-Layer Spectroelectrochemistry at Optically Transparent Electrodes.”

18. “Photochemistry of the Clusters Os\(_3\)(CO)\(_{10}\)(L) (L = 2,2’-Bipyridine, 2,2’-Bipyrimidine, 2,3-Dipyrid-2-ylpyrazine, 2,3-Dipyrid-2-ylbenzoquinoxaline). Reversible Opening of an Os-Os Bond with Formation of a Zwitterion.”


20. “Proton-Coupled Electron-Transfer Reactions in \([\text{Mn}^{IV}_2(\mu-\text{O})_2\text{L’}_2]^2+ \) (L’ = 1,4,7-trimethyl-1,4,7-triazacyclononane).”


22. “Role of an Electron-Transfer Chain Reaction in the Unusual Photochemical Formation of Five-Coordinated Anions \([\text{Mn(CO)}_3(\alpha\text{-diimine})]\)\(^{-}\) from \(\text{fac-}[\text{Mn(X)(CO)}_3(\alpha\text{-diimine})]\) (X = halide) at Low Temperatures.”

23. “Bonding Properties of the 1,2-Semiquinone Radical-Anionic Ligand in the \([\text{M(CO)}_{4-n}(\text{L})_n(\text{DBSQ})]\) Complexes (M = Re, Mn; DBSQ = 3,5-di-tert-butyl-1,2-benzosemiquinone; \(n = 0,1,2\)). A Comprehensive Spectroscopic (UV-Vis and IR Absorption, Resonance Raman, EPR) and Electrochemical Study.”

24. “Electrocatalytic Reduction of \(\text{CO}_2\) using the Complexes \([\text{Re(bpy)(CO)}_3\text{L}]^n\) (\(n = +1, L = \text{P(OEt)}_3, \text{CH}_3\text{CN}; n = 0, L = \text{Cl}^-, \text{Otf}^-; \text{bpy} = 2,2’\text{-bipyridine; } \text{Otf}^\text{=} = \text{CF}_3\text{SO}_3\)) as Catalyst Precursors: An Infrared Spectroelectrochemical Investigation.”


26. “Bonding Properties of a Novel Inorganometallic Complex \(\text{Ru(SnPh}_3)_2(\text{CO})_2(\text{iPr-DAB})\) (\(\text{iPr-DAB} = N,N’\text{-diisopropyl-1,4-diaza-1,3-butadiene}) and its Stable Radical-Anion, Studied by UV-vis, IR, and ESR Spectroscopy, (Spectro)Electrochemistry, and by Density Functional Calculations.”
27. “Reduction of [Re(X)(CO)3(R’-DAB)] (X = Otf-, Br-; DAB = diazabutadiene; R’ = iPr, pTol, pAn) and [Re(R)(CO)3(iPr-DAB)] (R = Me, Et, Bz) Complexes: A (Spectro)electrochemical Study at Variable Temperatures.”

28. “Infrared Spectroelectrochemical Investigation of Carbon Dioxide Reduction Mediated by the Anion [Ru(SnPh3)(CO)2(iPr-DAB)]+ (iPr-DAB = N,N’-diisopropyl-1,4-diaza-1,3-butadiene).”

29. “Valence Localization in [M(triphos)(3,5-di-tert-butylcatecholate)]+ Ions, M = Co, Rh, or Ir, Probed by Resonance Raman Spectroscopy.”

30. “Synthesis and Redox Properties of [{Cp(Ru(L2)}2(μ-fumaronitrile)]{OTf}2 and [CpRu(L2)(σN-fumaronitrile)][OTf] with L2 = N,N’-diisopropyl-1,4-diaza-1,3-butadiene (iPr-DAB) or L = PPh3.”

31. “Real-Time FT-IR Spectroscopy in Organometallic Chemistry: Mechanistic Aspects of the fac- to mer- Photoisomerization of fac-[Mn(Br)(CO)3(R-DAB)].”

32. “Redox Properties of Zerovalent Palladium Complexes Containing α-Diimine and p-Quinone Ligands.”

33. “Electrochemical and IR/UV-vis Spectroelectrochemical Studies of fac-[Mn(X)(CO)3 (iPr-DAB)]n (n = 0, X = Br, Me, Bz; n = +1, X = THF, MeCN, nPrCN, P(OMe)3; iPr-DAB = 1,4-Diisopropyl-1,4-diaza-1,3-butadiene) at Variable Temperatures: Relation between Electrochemical and Photochemical Generation of [Mn(CO)3(α-diimine)]+.”
34. "Spectro-Electrochemical (UV-vis, IR, NMR, and EPR) Study of the Inorganometallic Complexes Ru(E)(E')(CO)2(iPr-DAB) (E = Cl, E' = SnPh3, PbPh3; E = Me, SnPh3, GePh3, E' = SnPh3; E = E' = PbPh3; iPr-DAB = 1,4-Diisopropyl-1,4-diaza-1,3-butadiene)."
M.P. Aarnts, F. Hartl*, K. Peelen, D.J. Stufkens, C. Amatore and J.-N. Verpeaux
Organometallics 16 (1997) 4686.

35. "Nucleophilic Attack at the Five-Coordinate Anion [Mn(CO)3(3,5-di-tert-butyl-catecholate)]⁻ Controlled by Electronic and Steric Effects."

36. "Electron Distribution in the [Cr(CO)4(bpy)]⁻ Radical Anion as Revealed by ESR Spectroscopy and IR Spectroelectrochemistry of 13CO-enriched Species."

37. "Photochemistry of the Triangular Clusters Os₃(CO)₁₀(α-diimine): Homolysis of an Os-Os Bond and Solvent Dependent Formation of Biradicals and Zwitterions."

38. "Electrochemical and Binding Properties of a Novel Ferrocene-Containing Redox-Active Basket-Shaped Host Molecule."

39. "Mechanistic Aspects of the Thermal mer-to-fac Isomerization of mer-[Mn(X)(CO)₃(α-diimine)] (X = Cl, Br, I)."
40. "Spectroscopic (UV-vis, Resonance Raman) and Spectro-Electrochemical Study of Pt(II) Complexes with 2,2'-Bipyridine and Aromatic Thiolate Ligands."

41. "Syntheses, Crystal Structures and (Spectro)electrochemical Studies of Novel Clusters Ru₄(µ-H)₄(CO)₁₀(L) (L = 2,2'-bipyrimidine (bpym), 2,3-dipyrid-2-ylpyrazine (dpp) and 2,2'-bipyridine (bpy))."

42. "Comparison of Electrochemically and Photochemically Induced Electron-Transfer Processes of a Series of Copper(II)-Schiff Base Complexes with Thiolate Coordination."

43. "Mechanistic Study of the Photoisomerization of Os₃(CO)₁₀(L) in which L (L = 1,4-di-R-1,4-diaza butadiene (R-DAB) or pyridine-2-carbaldehyde N-R-imine (R-PyCa)) Changes its Coordination from σ,σ'-N,N' into σ-N, µ₂-N', η₂-C=N'."

44. "Remarkably Stable Radical Anions Derived from Clusters [HOs₃(CO)₉(L)], L = ortho-Metallated α-Diimine: A Spectro-Electrochemical Study and Theoretical Rationalization."

45. "Charge Separation in a Triosmium Cluster Zwitterion Revealed by Time-Resolved Microwave Conductivity: First Application of TRMC in Organometallic Chemistry."

46. “Light-Induced Insertion of a CO Ligand into an Os-N bond of the Clusters [Os₃(CO)₁₀(L)], where L Represents a Potentially Terdentate N,N'-Chelating α-Diimine.”
47. “Unprecedented Coordination of 4,4’,5,5’-tetramethyl-2,2’-Biphosphinine Doubly Bridging over an Open Triosmium Core.”

48. “Temperature-Dependent Photophysical and Redox Properties of Novel Complexes [Ru(L¹)(L²)(CO)₂(iPr-DAB)] (L¹ = RuCp(CO)₂ or SnPh₃; iPr-DAB = N,N’-diisopropyl-1,4-diaza-1,3-butadiene).”

49. “Mechanistic Study of the Photofragmentation of the Clusters [Os₃(CO)₁₀(diene)] (diene = cis-1,3-butadiene, 1,3-cyclohexadiene): Direct Observation of the Open-Triangle Primary Photoproduct with Nanosecond Time-Resolved Infrared and UV-visible Spectroscopy.”

50. "Stepwise versus Direct Long-Range Charge Separation in Molecular Triads."

51. “Changes in Excited-State Character of [M(L₁)(L₂)(CO)₂(α-diimine)] (M = Ru, Os) Induced by Variation of L₁ and L₂.”

52. “Alkene-Stabilized Biradicals and Zwitterions Produced Photochemically from the Clusters [Os₃(CO)₁₀(α-diimine)]: Reaction Mechanism and Bonding Properties Studied by Nanosecond UV-Vis and Infrared Spectroscopies.”
53. “The Spectroscopic, Electrochemical and Photophysical Effects of the $b_{1}/a_{2}$ $\pi^{*}$ Lowest Unoccupied Molecular Orbital Switching in $[M(CO)_{4}(N,N)]$; $M = Cr, W; N,N = 1,10$-phenanthroline or 3,4,7,8-tetramethyl-1,10-phenanthroline. An Experimental and DFT Computational Study.”


55. “Theoretical Studies of $[Os_{3}(CO)_{10}(\alpha$-diimine)]: Structures, Frontier Orbitals and Bonding.”


58. ”Electrochemical Oxidation of $[Cr(CO)_{4}(tmp)]$ to the Low-spin Cr(I) Species $[Cr(CO)_{4}(tmp)]^{+}$ (tmp = 3,4,7,8-tetramethyl-1,10-phenanthroline): an IR, UV-Vis , and EPR Spectroelectrochemical and DFT Computational Study of the Accompanying Changes in Molecular and Electronic Structure.”
59. “Influence of Metal Core Composition on Redox Properties and Photoreactivity of the Clusters $\text{[H}_{4-x}\text{Ru}_{4-x}\text{Rh}_x(\text{CO})_{12}]$ ($x = 0, 2, 3, 4$).”
*Special Issue, on invitation. (Excellent Czech chemists abroad).

60. “On the Structure, Carbonyl-Stretching Frequencies and Relative Stability of trans- and cis-$\text{[W(CO)}_4(\eta^2\text{-alkene})_{2}]^{0/+}$: A Theoretical and IR Spectroelectrochemical Study.”

61. “Redox-Control of Conformation and Luminescence of a Dinuclear Ruthenium(II) Complex with a Bis-dipyridophenazine Bridging Ligand.”


63. Bonding and Redox Properties of Clusters $\text{[Os}_3(\text{CO})_6(tmbp)(L)]$ ($tmbp = 4,4’,5,5’,-\text{Tetramethyl-2,2’-biphosphinine; } L \text{ = CO, PPh}_3$) with Unprecedented Electron Deficient Metallic Core and Doubly Bridging Biphosphinine Dianion.”

64. “Photo-induced Ligand Substitution at a Remote Site via Electron Transfer in a Porphyrin-appended Rhenium carbonyl Supermolecule.”

65. “First Direct Observation of a CO-Bridged Primary Photoproduct of $\text{[Ru}_3(\text{CO})_{12}]$ by Picosecond Time-resolved Infrared Spectroscopy.”
66. “Light-induced Formation of Zwitterions and Biradicals from the Cluster \([\text{Os}_3(\text{CO})_{10}(\text{Pr-AcPy})]\) Studied with Picosecond UV-Vis and Nanosecond IR Spectroscopies.”

67. “Photophysical, Electrochemical and Electrochromic Properties of Copper-Bis(4,4’-dimethyl,6,6’-diphenyl-2,2’-bipyridine) Complexes.”

68. “Electrochemistry of Different Types of Photoreactive Ruthenium(II) Dicarbonyl \(\alpha\)-Diimine Complexes.”

69. “Photophysical Properties of Homodinuclear Ruthenium(II) and Osmium(II) Complexes with a Bis(dipyridophenazine) Bridging Ligand: From Pico- to Microsecond Time Resolution.”

70. “Novel Complexes \([\text{trans(Cl)}-\text{[Os(bpy)(CO)(CH}_3\text{CN)Cl}_2]]^n (n = 0, +1); \text{bpy = 2,2’-Bipyridine})\): Photo- and Electrochemical Syntheses and Comparative Study of Their Bonding and Redox Properties.”

71. “Electronic Properties of 4,4’,5,5’-Tetramethyl-2,2’-biphosphinine (tmbp) in the Redox Series \(\text{fac-[Mn(Br)(CO)3(tmbp)]}, \text{[Mn(CO)3(tmbp)]}_2\) and \(\text{[Mn(CO)3(tmbp)]}^\text{-}\): Crystallographic, Spectro-Electrochemical and DFT Computational Study”
   
   **Patent** Boomgaard, Ritse Eltjo; Schier, Herbert; Kirchner, Eric Jacob Jan; Klaasen, Robert Paul; Hartl, Frantisek; Van Der Leeuw, Ronald Petrus Catharina; Bakkeren, Frank Johannes Alfred Dirk. PCT Int. Appl. (2003), CODEN: PIXXD2 WO 0329371 A1 20030410 AN 2003:282671 CAPLUS

73. “Synthesis, Spectroscopy and Spectroelectrochemistry of Chlorocarbonyl \(\{1,2\text{-Bis[(2,6-diisopropylphenyl)imino]acenaphthene-}\kappa^{2}\text{-N,N'}\}\text{rhodium(I)}\).”

74. “Marked Influence of the Bridging Carbonyl Ligands on the Photo- and Electrochemistry of the Clusters \([\text{Ru}_3\text{(CO)}_8\text{(µ-CO)}_2(\alpha\text{-diimine})]\) (\(\alpha\text{-diimine} = 2,2'\text{-bipyridine, 4,4’-dimethyl-2,2’-bipyridine and 2,2’-bipyrimidine}\)).”

75. “Multimetallic Ruthenium(II) Complexes as ECL Labels.”

76. “Electrochemical and Photochemical Conversion of \([\text{Ru}_3\text{Ir(µ}_{3}\text{-H})(\text{CO})_{13}]\) into \([\text{Ru}_3\text{Ir(µ-H)}_3\text{(CO)}_{12}]\).”

77. “Strongly Nucleophilic Rh\(^{I}\) Centre in Square-Planar Complexes with Terdentate (\(\kappa^3\)) 2,2’-6’,2’’-Terpyridine Ligands: Crystallographic, Electrochemical and Density Functional Theoretical Studies.”
78. “Photochromic Dithienylethene Derivatives Containing Ru(II) or Os(II) Metal Units. Sensitized Photocyclization from a Triplet State.”

79. Low-Lying Excited States and Primary Photoproducts of Clusters \([\text{Os}_3(\text{CO})_{10}(s\text{-cis-L})]\) (L = cyclohexa-1,3-diene, buta-1,3-diene) Studied by Picosecond Time-Resolved UV/Vis and IR Spectroscopies and Density Functional Theory.”

80. Re-to-Benzoylpyridine and Re-to-Bipyridine MLCT Excited States of \(\text{fac-}[\text{Re(Cl)}(4\text{-benzoylpyridine}_2(\text{CO})_3)]\) and \(\text{fac-}[\text{Re(4-benzoylpyridine)}(\text{CO})_3(\text{bpy})]^{+}\): A Time-Resolved Spectroscopic and Spectroelectrochemical Study.”

81. “Redox Active Polymers Based on Non-Bridged Metal-Metal Bonds. Electrochemical Formation of \([\text{Os(bpy)(CO)(L)})_n\) (bpy = 2,2’-bipyridine; L = CO, MeCN) and of Their Reduced Forms: A Spectro-Electrochemical Study.”

82. Redox Control of Light-Induced Charge-Separation in a Transition Metal Cluster. The Photochemistry of a Methylviologen Substituted \([\text{Os}_3(\text{CO})_{10}(\alpha\text{-diimine})]\) Cluster.”

83. “Heterosite Effects in Novel Heteronuclear Clusters \([\text{Os}_2\text{Ru(CO)}_{12-n}(\text{L})]\) (n = 1, L = PPh$_3$; n = 2, L = 2-acetylpyridine-$N$-isopropylimine).”
84. “Excited States of Nitro-Polypyridine Metal Complexes and Their Ultrafast Decay. Time-Resolved IR Absorption, Spectroelectrochemistry, and TD-DFT Calculations of fac-[Re(Cl)(CO)3(5-Nitro-1,10-phenanthroline)].”

85. “Electronic Energy Transfer in a Dinuclear Ru/Os Complex Containing Photoresponsive Dithienylethene Derivative as Bridging Ligand.”

86. “A Ru(II) Complex Stabilized by a Highly Fluorinated PCP Pincer Ligand”.


88. “Electrochemical Series of Bi- and Polymetallic Complexes Featuring Acetylide-Based Bridging Ligands.”


91. “Syntheses, Structures, Some Reactions and Electrochemical Oxidation of Ferrocenylethynyl Complexes of Iron, Ruthenium and Osmium”

92. “Luminescence of a New Ru(II) Polypyridine Complex Controlled by a Redox-Responsive Protonatable Anthra[1,10]phenanthrolinequinone”

93. “Syntheses, X-ray Structures, Photochemistry and Redox Properties of Inter-Switchable of \(\text{fac- and mer-}[\text{Mn(SPS)(CO)}_3]\) Isomers Containing a Flexible SPS-Based Pincer Ligand.”


**Submitted Papers**

95. “New Insight into Electronic Transitions and Structure of 3,6-Diphenyl-1,2-dithiin Radical Cation. A Spectroelectrochemical and Quantumchemical Study.”

96. “Heterosite Photoreactivity of the Triangular Mixed-Metal Cluster \([\text{Os}_2\text{Rh(CO)}_9(\eta^5-C_5\text{Me}_5)]\). An Experimental and Theoretical Study.”
97. “Sub-picosecond Charge Separation in a Photo-Reactive Rhenium-Appended Porphyrin Assembly Monitored by Picosecond Transient Infrared Spectroscopy.”

98. “Electronic and Redox Properties and Interactions with H₂O₂ of a pH Sensitive 1,2,4-Triazole-phenolate Based Oxo-Vanadium(V) Complexes”


100. “Electrochemical Reduction Path of Clusters [Os₃(CO)₁₀(α-diimine)] Controlled by Electronic Properties of the Diimine Ligand.”

101. “A Novel Heteroditopic Terpyridine-Pincer Ligand as Building Block for Mono- and Heterometallic Pd(II) and Ru(II) Complexes.”

102. Photophysical and Redox Properties of Novel Photochromic Nitrospiropyrans Monosubstituted with [M(bpy)₃]²⁺ (M = Ru, Os) Chromophores.”