

Dr. Contel's List of Scientific Publications & Patents (Chronological Order)

Publications

1. 'Mesityl Gold Complexes. Synthesis and Reactivity. X-Ray structure of $[(PPh_3Au(\mu\text{-mes})Ag(tht))_2][SO_3CF_3]_2$ (mes=mesityl, tht = tetrahydrothiophene)'. **M. Contel**, J. Jiménez, P.G. Jones, A. Laguna and M. Laguna., *J. Chem. Soc., Dalton Trans.*, **1994**, 2515.
2. 'Triamidogerma- and -Stanna-aurates (I): First Structural Characterisation of a Ge-Au-Ge Unit'. **M. Contel**, K.W. Hellmann, L.H. Gade, I.J. Scowen, M. McPartlin and M. Laguna, *Inorg. Chem.*, **1996**, 35, 3713.
3. 'Trinuclear Au_2Ag and Au_2Cu Complexes with Mesityl Bridging Ligands. X-Ray Structure of the One-dimensional Chain Polymer $[Au(\mu\text{-mes})(AsPh_3)_2Ag]ClO_4$ '. **M. Contel**, J. Garrido, M.C. Gimeno, P.G. Jones, A. Laguna and M. Laguna, *Organometallics*, **1996**, 15, 4939.
4. 'Polynuclear Mesityl-gold and -gold-silver Derivatives. Crystal Structure of $[Ag(\mu\text{-dppm})\{Au(mes)\}_2]ClO_4 \cdot 3CH_2Cl_2$ (dppm=bis(diphenylphosphino)methane, mes=mesityl). **M. Contel**, J. Garrido, M.C. Gimeno, J. Jiménez, P.G. Jones, A. Laguna and M. Laguna, *Inorg. Chim. Acta*, **1997**, 254, 157.
5. 'Triamidostannagold Complexes in Different Oxidation States. First Structural Characterization of a Sn-Au-Au-Sn Linear Chain'. B. Findeis, **M. Contel**, L.H. Gade, M. Laguna, M.C. Gimeno, I. Scowen y M. McPartlin, *Inorg. Chem.*, **1997**, 36, 2386.
6. 'Trimethylsilylmethyl Gold (I) Complexes. X-Ray Structure of $[Au(CH_2SiMe_3)(PPh_2CH_2PPh_2Me)]ClO_4 \cdot 0,25CH_2Cl_2$ '. **M. Contel**, J. Garrido, J. Jiménez, P.G. Jones, M. Laguna and A. Laguna, *J. Organomet. Chem.*, **1997**, 543, 71.
7. 'Hexanuclear Mercury-Silver Complexes. Novel Coordination for Bridging Mesityl and Triflate Groups'. M. Laguna, M.D. Villacampa, **M. Contel** and J. Garrido, *Inorg. Chem.*, **1998**, 37, 133.
8. 'A silver (I) center solely bonded to four gold (I) atoms'. **M. Contel**, J. Garrido, M.C. Gimeno and M. Laguna, *J. Chem. Soc, Dalton Trans*, **1998**, 1083.
9. 'Bis{2-diphenylphosphino}phenyl}mercury: a novel bidentate ligand and transfer reagent for the $o\text{-}C_6H_4PPh_2$ group'. M.A. Bennett, **M. Contel**, D.C.R. Hockless and L.L. Welling, *Chem. Commun.*, **1998**, 2401.
10. 'A New, Simple Route to Novel Gold Clusters: Structure of an Au_6Ag Wheel with a Gold Rim'. E. Cerrada, **M. Contel**, A.D. Valencia, M. Laguna, T. Gelbrich and M.B. Hursthouse. *Angew. Chem. Int. Ed.*, **2000**, 39, 2353.
11. 'Cyclometallated Complexes of Ruthenium and Osmium Containing the $o\text{-}C_6H_4PPh_2$ ligand'. M.A. Bennett, A.M. Clark, **M. Contel**, C.E.F. Rickard, W.R. Roper and L.J. Wright. *J. Organomet. Chem.*, **2000**, 601, 299.
12. 'Reactivity of Bis- $[2,6\text{-bis}(\text{dimethylaminomethyl})\text{phenyl}]\text{gold}(I)$, an Unusual Intermolecularly Stabilized Bis(amino)-Aryl-Gold(I) Dimer, Towards Alkyl Halides. X-ray Crystal Structures of its Iodomethane and Methylene Iodide Adducts'. **M. Contel**, D. Nobel, G. van Koten, and A. L. Spek. *Organometallics*, **2000**, 19, 3288.
13. 'Mesityl Gold(III) Complexes. X-ray Structure of Mononuclear $[Au(mes)_2Cl(PPh_3)]$ and the Dimer $[Au(mes)_2Cl]_2$ '. **M. Contel**, A.J. Edwards, J. Garrido, M.B. Hursthouse, M. Laguna and R. Terroba, *J. Organomet. Chem.*, **2000**, 607, 129.

14. 'Mesityl-Gold(I) Complexes'. M. Laguna, J. Garrido and **M. Contel**, *Inorg. Synth.*, **2002**, 33, 181.
15. 'Bis{(2-diphenylphosphino)phenyl}mercury: A P-Donor Ligand and Precursor to Mixed Metal-Mercury (d^8 - d^{10}) Cyclometalated Complexes Containing 2- $C_6H_4PPh_2$ '. M.A. Bennett, **M. Contel**, D.C.R. Hockless, L.L. Welling and A.C. Willis. *Inorg. Chem.*, **2002**, 41, 844.
16. 'A Bis(ortho-amine)aryl-Gold(I) Compound as an Efficient, Nontoxic, Arylating Reagent'. **M. Contel**, M. Stol, M.A. Casado, G.P.M. van Klink, D.D. Ellis, A.L. Spek and G. Van Koten. *Organometallics*, **2002**, 21, 4556.
17. 'Fluorous Biphasic Catalysis: Synthesis and Characterization of Copper (I) and Copper (II) Fluoroponytailed 1,4,7- R_f -TACN and 2,2'-Bipyridine Complexes, and Demonstration of their Catalytic Activity in the Oxidation of Hydrocarbons, Olefins, and Alcohols, Including Mechanistic Implications'. **M. Contel**, C. Izuel, R.H. Fish, M. Laguna, P.R. Villuendas and P.J. Alonso. *Chem. A. Eur. J.*, **2003**, 9, 4168.
18. 'Organometallic Gold(III) Compounds as catalysts for the Addition of Water and Methanol to Terminal Alkynes'. R. Casado, **M. Contel**, M. Laguna, P. Romero and S. Sanz. *J. Am. Chem. Soc.* **2003**, 125, 11925.
19. 'Synthesis of Fluorous Nitrogen Ligands and Their Metal Complex as Precatalysts for Application in Alkane, Alkene, and Alcohol Oxidation, and Atom Transfer Radical Reactions'. J.-M. Vincent, D. Lastécouères, **M. Contel**, M. Laguna and R.H. Fish. *Handbook of Fluorous Chemistry* (Wiley-VHC). **2004**, Chap. 10.12. 298.
20. ' $Mn^{2+}/Co^{2+}/Cu^{2+}/Cu^+$ Complexes of Fluoroponytailed R_f -Tris-N-1,4,7-triazacyclononane and R_f -Carboxylate, $C_8F_{17}(CH_2)_2COOH$. Precatalysts for FBC Alkane, Alkene, and Alcohol Oxidation Chemistry'. J.-M. Vincent, **M. Contel**, M. Laguna and R.H. Fish. *Handbook of Fluorous Chemistry* (Wiley-VHC). **2004**, Chap. 11.15. 394.
21. 'Organometallic Gold(III) and Gold(I) Complexes as Catalysts for the 1,3-Dipolar Cycloaddition to Nitrones: Synthesis of Novel Gold-Nitrone Derivatives'. A. Adé, E. Cerrada, **M. Contel**, M. Laguna, P. Merino and T. Tejero. *J. Organomet. Chem.*, **2004**, 689, 1788.
22. 'Precatalyst Separation Paradigms: Alkane Functionalization in Water Utilizing in situ Formed $[Fe_2O(\eta^1-H_2O)(\eta^1-Oac)(TPA)_2]^{3+}$, Embedded in Surface-Derivatized Silica, as an MMO Model, and Fluorous Biphasic Catalysis for Alkane, Alkene, and Alcohol Oxidation Chemistry'. R.H. Fish, A. Rabion, K. Neimann, R. Neumann, J.-M. Vincent, **M. Contel**, C. Izuel, P.R. Villuendas, and P.J. Alonso. *Topics in Catalysis*, **2005**, 32, 185.
23. 'Synthesis of fluorous nitrogen ligands and applications, including atom-transfer radical reactions'. J.-M., Vincent, D. Lastecoueres, M. Contel, M. Laguna, and R.H., Fish. *Multiphase Homogeneous Catalysis*, **2005**, 1, 375.
24. 'Fluorocarbon Soluble Copper(II) Carboxylate Complexes with Non-Fluoroponytailed Ligands as Precatalysts for the Oxidation of Alkenols and Alcohols Under Fluorous Biphasic or Thermomorphic Modes: Structural and Mechanistic Aspects'. **M. Contel**, P.R. Villuendas, J. Fernández-Gallardo, P.J. Alonso, J.-M. Vincent and R.H. Fish. *Inorg. Chem.* **2005**, 44, 9971.
25. 'Fluorous Phosphine Assisted Recycling of Gold Catalysts for Hydrosilylation of Aldehydes'. D. Lantos, **M. Contel**, A. Larrea, D. Szabó, and I.T. Horváth. *QSAR Comb. Sci.*, **2006**, 25, 719.
26. 'Homogeneous Gold-Catalyzed Hydrosilylation of Aldehydes'. D. Lantos, **M. Contel**, S. Sanz, A. Bodor and I.T. Horváth. *J. Organomet. Chem.* **2007**, 692, 1799.
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28. 'Regioselective Orthopalladation of Stabilized Iminophosphoranes in ExoPosition: Scope, Limitations and Mechanistic Insights'. D. Aguilar, R. Bielsa, **M. Contel**, A. Lledos, R. Navarro, T. Soler, and E.P. Urriolabeitia. *Organometallics*, **2008**, 27, 2929.
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31. 'Water Soluble Phosphane-Gold(I) Complexes. Applications as Recyclable Catalysts in a Three-Component Coupling Reaction and as Anticancer and Antimicrobial Agents'. B.T. Elie, C. Levine, Iban Ubarretxena-Belandia, A. Varela, R. Aguilera, R. Ovalle, and **M. Contel**. *Eur. J. Inorg. Chem.* **2009**, 3421.
32. 'Gold Chemistry, Applications and Future Directions in the Life Sciences'. Ed. Fabian Mohr. Wiley-VCH 2009. Book Review. **M. Contel**. *Angew. Chem. Int. Ed.* **2010**, 49, 250.; *Angew. Chem.* **2010**, 122, 258.
33. 'Orthopalladation of (Z)-2-Aryl-4-Arylidene-5(4H)-Oxazolones. Structure and Functionalization'. G.-D. Roiban, E. Serrano, T. Soler, **M. Contel**, I. Grosu, C. Cativiela, and E.P. Urriolabeitia. *Organometallics*. **2010**, 29, 1428-1435.
34. 'Mechanistic Insights in the One-Pot Synthesis of Propargylamines from Terminal Alkynes and Amines in Chlorinated Solvents Catalyzed by Gold Compounds and Nanoparticles'. D. Aguilar, **M. Contel**, and E.P. Urriolabeitia. *Chem. A Eur.* **2010**, 16, 9287.
35. 'Group 11 Metal Compounds with Tripodal Bis(imidazole) Thioether Ligands. Applications as Catalysts in the Oxidation of Alkenes and as Antimicrobial Agents'. F. Liu, R. Amis, E. Hwang, A. Varela-Ramirez, R.J. Aguilera, R. Ovalle, and **M. Contel**. *Molecules* (invitation to a special issue on Pincer Complexes). **2011**, 16, 6701.
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37. 'Titanocene-Phosphine Derivatives as Precursors to Cytotoxic Heterometallic $TiAu_2$ and TiM (M = Pd, Pt) Compounds. Studies of their Interactions with DNA'. J.F. González-Pantoja, M. Stern, A.A. Jarzecki, E. Royo, E. Robles-Escajeda, A. Varela-Ramirez, R.J. Aguilera, and **M. Contel**. *Inorg. Chem.* **2011**, 50, 11099-11110.
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39. 'Fluorous Hydrosilylation'. M. Carreira, and **M. Contel**. *Top. Curr. Chem.* **2012**, 308, 247-274. Invited Chapter to the Special Volume on Fluorous Chemistry (Ed. I.T. Horváth). Published on line Sept 2011.
40. 'Luminescent Di and Trinuclear Organometallic Gold(I)-M (Au_2 , Au_2Ag and Au_2Cu) Compounds Containing Bidentate Phosphanes as Active Antimicrobial Agents'. M. Frik, J. Jimenez, I. Gracia, L.R. Falvello, S. Abi-Habib, K. Suriel, T.R. Muth, and **M. Contel**. *Chem. A Eur. J.* **2012**, 18, 3659-3674.
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42. 'Organometallic Palladium Complexes with a Water-Soluble Iminophosphorane Ligand as Potential Anticancer Agents' M. Carreira, R. Calvo-Sanjuán, M. Sanaú, I. Marzo, and **M. Contel**. *Organometallics*. **2012**, 31, 5572 (Special issue on Organometallics in Medicine and Biology).

43. 'Potential Anticancer Heterometallic Fe–Au and Fe–Pd Agents: Initial Mechanistic Insights'. N. Lease, V. Vasilevski, M. Carreira, A. de Almeida, M. Sanaú, P. Hirva, A. Casini and **M. Contel**. *J. Med. Chem.* **2013**, *56*, 5806.
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45. 'Auranofin and Related Heterometallic Gold(I)-Thiolates as Potent Inhibitors of Methicillin-Resistant Staphylococcus aureus Bacterial Strains'. Y. Hokai, B. Jurkowicz, J. Fernández-Gallardo, N. Zakirkhodjaev, M. Sanaú, T.R. Muth, and **M. Contel**. *J. Inorg. Biochem.* **2014**, *138*, 81.
46. 'Organometallic Titanocene-Gold Compounds as Potential Chemotherapeutics in Renal Cancer. Study of their Protein Kinase Inhibitory Properties'. J. Fernández-Gallardo, B.T. Elie, F. Sulzmaier, M. Sanaú, J.W. Ramos, and **M. Contel**. *Organometallics*. **2014**, *33*, 6669.
47. 'In vitro and in vivo Evaluation of Water-soluble Iminophosphorane Ruthenium(II) Compounds. A Potential Chemotherapeutic Agent for Triple Negative Breast Cancer'. M. Frik, A. Martinez, B.T. Elie, O. Gonzalo, D. Ramirez de Mingo, M. Sanaú, R. Sánchez-Delgado, T. Sadhukha, S. Prabha, J.W. Ramos, I. Marzo, and **M. Contel**. *J. Med. Chem.* **2014**, *57*, 9995.
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50. 'Heterometallic titanium–gold complexes inhibit renal cancer cells *in vitro* and *in vivo*'. J. Fernández-Gallardo, B. T. Elie, T. Sadhukha, S. Prabha, M.Sanaú, S.A. Rotenberg, J. W. Ramos, and **M. Contel**. *Chem. Sci.* **2015**, *6*, 5269 (open access).
51. 'Cyclometalated Iminophosphorane Gold(III) and Platinum (II) Complexes. A Highly Permeable cationic Platinum (II) Compound with Promising Anticancer Properties. M. Frik, J. Fernández-Gallardo, O. Gonzalo, Victor Mangas-Sanjuan, M. González-Alvarez, A. Serrano del Valle, C. Hu, I. González-Alvarez, M. Bermejo, I. Marzo, **M. Contel**. *J. Med. Chem.* **2015**, *58*, 5825. (ACS author choice open access).
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52. 'Versatile Synthesis of Cationic N-Heterocyclic Carbene-Gold(I) Complexes Containing a Second Ancillary Ligand. Design of Heterobimetallic Ruthenium-Gold Anticancer Agents'. *Chem. Commun.* J. Fernández-Gallardo, B. T. Elie, M. Sanaú, and **M. Contel**. *Chem. Commun.* **2016**, *52*, 3155.
54. 'Synthesis and anticancer activity of carbosilane metallodendrimers based on arene ruthenium (II) complexes'. M. Maroto-Díaz, B.T. Elie, P. Gómez-Sal, J. Perez-Serrano, R. Gómez, **M. Contel** and F.J. de la Mata. *Dalton Trans.* **2016**, *45*, 7049.
55. 'Titanocene-gold complexes containing N-heterocyclic carbene ligands inhibit growth of prostate, renal and colon cancers *in vitro*.' Y.F. Mui, J. Fernández-Gallardo, A. Gubran, B.T. Elie, I. Maluenda, M. Sanaú, O. Navarro and **M. Contel**. *Organometallics*. **2016**, *35*, 1218. (ACS author choice open access).

56. 'Auranofin and N-heterocyclic carbene gold- analogs are potent inhibitors of the bacteria *Helicobacter. Pylori*'. J.P. Owings, N.N. McNair, Y.F. Mui, T.N. Gustafsson, A. Holmgren, **M. Contel**, J.B. Goldberg and J.R. Mead. *FEMS Microbiol. Lett.* 2016, 363, fnw148. DOI: <http://dx.doi.org/10.1093/femsle/fnw148>.

57. 'Water-compatible gold and silver nanoparticles as catalysts for the oxidation of alkenes'. E. Fisher, L. Kenisqberg, M. Carreira, J. Fernández-Gallardo, R. Baldwin and M. Contel. *Polyhedron*. Special Issue to honor Prof. Martin A. Bennett. *In press*. DOI:10.1016/j.poly.2016.06.012.

Patents

1. 'Titanocene Gold Derivatives Comprising Thiolato Ligands'. **M, Contel**, J. Fernández-Gallardo, B.T. Elie, J.W. Ramos. US Patent 9,315,531 (04/19/2016).

2. 'Arene ruthenium (II) derivatives containing iminophosphorane ligands and their use in cancer therapy'. **M, Contel**, I. Marzo, M, Frik, B.T. Elie. Publication Number: US-2015-0374724-A1.