

**Scientific Production**  
Prof. Dominique Armspach  
Professor at the University of Strasbourg

● **Peer-reviewed articles in international journals**

- [1] *Oxidation of the triterpenic hopane skeleton by peracids*  
P. Bisseret, D. Armspach, S. Neunlist, M. Rohmer, *Tetrahedron Lett.* **1990**, 45, 6523-6526.
- [2] *The self-assembly of catenated cyclodextrins*  
D. Armspach, P. R. Ashton, C. P. Moore, N. Spencer, J. F. Stoddart, T. J. Wear, D. J. Williams, *Angew. Chem. Int. Ed.* **1993**, 32, 854-858.
- [3] *Cyclodextrins: 'linking lampshades'*  
D. Armspach, P. R. Ashton, N. Spencer, J. F. Stoddart, D. J. Williams, *Pestic. Sci.* **1994**, 41, 232-235.
- [4] *Catenated cyclodextrins*  
D. Armspach, P. R. Ashton, R. Ballardini, V. Balzani, A. Godi, C. P. Moore, L. Prodi, N. Spencer, J. F. Stoddart, M. S. Tolley, T. J. Wear, D. J. Williams, *Chem. Eur. J.* **1995**, 1, 33-55.
- [5] *Carboranyl cluster-functionalised ligands for metallocupramolecular chemistry*  
D. Armspach, E. C. Constable, C. E. Housecroft, M. Neuburger, M. Zehnder, *Supram. Chem.* **1996**, 7, 97-100.
- [6] *Cluster-functionalised ligands; metal-cluster interactions and nuclearity changes in carboranyl-2,2':6',2''-terpyridines*  
D. Armspach, E. C. Constable, C. E. Housecroft, M. Neuburger, M. Zehnder, *New J. Chem.* **1996**, 20, 331-335.
- [7] *Boron-rich metallodendrimers — mix-and-match assembly of multi-functional metallocupramolecules.*  
D. Armspach, M. Cattalini, E. C. Constable, C. E. Housecroft, D. Phillips, *Chem. Commun.* **1996**, 1823-1824.
- [8] *Bucky-ligands: fullerene-substituted oligopyridines for metallocupramolecular chemistry.*  
D. Armspach, E. C. Constable, F. Diederich, C. E. Housecroft, J.-F. Nierengarten, *Chem. Commun.* **1996**, 2009-2010.
- [9] *Carbaborane-functionalised 2,2':6',2''-terpyridine ligands for metallocupramolecular chemistry: Syntheses, complex formation, and the crystal and molecular structures of 4'-(ortho-carboranyl)-2,2':6',2''-terpyridine and 4'-(ortho-carboranylpropoxy)-2,2':6',2''-terpyridine.*  
D. Armspach, E. C. Constable, C. E. Housecroft, M. Neuburger, M. Zehnder, *J. Organometal. Chem.* **1998**, 550, 193-206.
- [10] *Bucky ligands: synthesis, ruthenium(II) complexes, and electrochemical properties*  
D. Armspach, E. C. Constable, F. Diederich, C. E. Housecroft, J.-F. Nierengarten, *Chem. Eur. J.* **1998**, 4, 723-733.
- [11] *The tris(4-tert-butylphenyl)methyl group: a bulky substituent for effective regioselective difunctionalisation of cyclomaltohexaose*  
D. Armspach, D. Matt\*, *Carbohydr. Res.* **1998**, 310, 129-133.
- [12] *Metal-capped  $\alpha$ -cyclodextrins: the crowning of the oligosaccharide torus with precious metals*  
D. Armspach\*, D. Matt\*, *Chem. Commun.* **1999**, 1073-1074.
- [13] *The first Ru(II) bipyridyl-capped cyclodextrin. Evidence of electron-transfer through the cavity*  
D. Armspach\*, D. Matt\*, A. Harriman, *Eur. J. Inorg. Chem.* **2000**, 1147-1150.
- [14] *Anchoring an helical handle across a cavity: the first 2,2'-bipyridyl-capped  $\alpha$ -cyclodextrin capable of encapsulating transition metals*  
D. Armspach\*, D. Matt\*, N. Kyritsakas, *Polyhedron* **2001**, 663-668.

- [15] *Dicobalt cluster functionalized 2,2':6',2"-terpyridines ligands and their ruthenium(II) complexes*  
E. C. Constable, C. E. Housecroft, L. A. Johnston, D. Armspach, M. Neuburger, M. Zehnder, *Polyhedron* **2001**, *20*, 483-492.
- [16] *Metal-capped  $\alpha$ -cyclodextrins: squaring the circle*  
D. Armspach\*, D. Matt\*, *Inorg. Chem.* **2001**, *40*, 3505-3509.
- [17] *Cyclodextrin cavities as probes for ligand-exchange processes*  
E. Engeldinger, D. Armspach\*, D. Matt\*, *Angew. Chem. Int. Ed.* **2001**, *40*, 2526-2529.
- [18] *A cyclodextrin diphosphane as a first and second coordination sphere cavitand: Evidence for weak C—H•••Cl—M hydrogen bonds within metal-capped cavities*  
E. Engeldinger, D. Armspach\*, D. Matt\*, P. G. Jones, R. Welter, *Angew. Chem. Int. Ed.* **2002**, *41*, 2593-2596.
- [19] *Synthesis of large chelate rings with diphosphites built on a cyclodextrin scaffold. Unexpected formation of 1,2-phenylene-capped  $\alpha$ -cyclodextrins*  
E. Engeldinger, D. Armspach, D. Matt, L. Toupet, M. Wesolek, *C. R. Chim.* **2002**, *5*, 359-372.  
Numéro spécial en l'honneur de **John Osborn**
- [20] *Selective tetrafunctionalisation of  $\alpha$ -cyclodextrin using the supertrityl protecting group - Synthesis of the first C<sub>2</sub>-symmetric tetraphosphane based on a cavitand ( $\alpha$ -TEPHOS)*  
L. Poorters, D. Armspach\*, D. Matt\*, *Eur. J. Org. Chem.* **2003**, 1377-1381.
- [21] *Cyclodextrin-encapsulated iron catalysts for the polymerization of ethylene*  
D. Armspach\*, D. Matt\*, F. Peruch, P. Lutz, *Eur. J. Inorg. Chem.* **2003**, 805-809.
- [22] *Cyclodextrin phosphanes as first and second coordination sphere cavitands*  
E. Engeldinger, D. Armspach, D. Matt, P. G. Jones, *Chem. Eur. J.* **2003**, *9*, 3091-3105.
- [23] *Capped cyclodextrins*  
E. Engeldinger, D. Armspach\*, D. Matt\*, *Chem. Rev.* **2003**, *103*, 4147-4174.
- [24] *Diastereospecific synthesis of phosphinidene-capped cyclodextrins leading to "introverted" ligands*  
E. Engeldinger, L. Poorters, D. Armspach\*, D. Matt\*, L. Toupet, *Chem. Commun.* **2004**, 634-635.
- [25] *Conical cavitands as second coordination spheres and protecting environments. Towards metal-centred, intra-cavity reactions*  
D. Armspach, I. Bagatin, E. Engeldinger, J. Harrowfield, C. Lejeune, D. Matt\*, *J. Iran. Chem. Soc.* **2004**, *1*, 10-19.
- [26] *A new approach to A,B-difunctionalisation of cyclodextrins using bulky 1,3-bis[bis(aryl)chloromethyl]benzenes as capping reagents*  
D. Armspach\*, L. Poorters, D. Matt\*, B. Benmerad, F. Balegrone, L. Toupet, *Org. Biomol. Chem.* **2005**, *3*, 2588-2592.
- [27] *Playing with podands based on cone-shaped cavities. How can a cavity influence the properties of an appended metal centre?*  
C. Jeunesse, D. Armspach, D. Matt, *Chem. Commun.* **2005**, 5603-5614.
- [28] *Sulfur-capped cyclodextrins: a new class of cavitands with extroverted as well as introverted donor functionalities*  
B. Benmerad, P. Clair, D. Armspach\*, D. Matt\*, F. Balegrone, L. Toupet, *Chem. Commun.* **2006**, 2678-2680.
- [29] *Cyclodextrin-based thiocavitands as building blocks for the construction of metallo-nanotubes*  
D. Armspach\*, L. Poorters, D. Matt\*, B. Benmerad, P. Jones, I. Dix, L. Toupet, *J. Incl. Phenom. Macrocycl. Chem.*, **2007**, *57*, 243-250.

- [30] *A metallocavitand functioning as a container for anions. Formation of non-covalent, linear assemblies mediated by a cyclodextrin-entrapped NO<sub>3</sub> anion*  
L. Poorters, D. Armspach\*, D. Matt\*, L. Toupet, *Angew. Chem. Int. Ed.* **2007**, *46*, 2663-2665.
- [31]  *$\alpha$ -TEPHOS: A cyclodextrin-derived tetraphosphine for multiple metal binding*  
L. Poorters, D. Armspach\*, D. Matt\*, L. Toupet, *Dalton Trans.* **2007**, 3195-3202.
- [32] *Synthesis of chiral, monodentate aminophosphine and phosphoramidite ligands derived from amino acid esters. Application in the Rh-catalysed asymmetric olefin hydrogenation*  
L. Eberhardt, D. Armspach\*, D. Matt\*, L. Toupet, B. Oswald, *Eur. J. Inorg. Chem.* **2007**, 4153-4161.
- [33] *Efficient, rhodium-catalyzed hydrogenation of  $\alpha$ -dehydroamino acid esters with chiral monodentate aminophosphanes bearing two binaphthyl groups*  
L. Eberhardt, D. Armspach\*, D. Matt\*, L. Toupet, B. Oswald, *Eur. J. Org. Chem.* **2007**, 5395-5403.
- [34] *Chiral selectors for enantioresolution and quantitation of the antidepressant drug uoxetine in pharmaceutical formulations by <sup>19</sup>F NMR spectroscopic method*  
M. Shamsipur\*, L. S. Dastjerdi, S. Haghgoo, D. Armspach, D. Matt, H. Y. Aboul-Enein, *Anal. Chim. Acta* **2007**, *601*, 130-138.
- [35] *Efficient asymmetric hydrogenation of olefins with hydrazine-derived diphosphoramidites*  
L. Eberhardt, D. Armspach\*, D. Matt\*, B. Oswald, L. Toupet, *Org. Biomol. Chem.* **2007**, *5*, 3340-3346.
- [36] *Synthesis and properties of TRANSDIP, a rigid chelator built upon a cyclodextrin cavity. Is TRANSDIP an authentic trans-spanning ligand?*  
L. Poorters, D. Armspach\*, D. Matt\*, L. Toupet, S. Choua, P. Turek, *Chem. Eur. J.* **2007**, *13*, 9448-9461.
- [37] *BINOL-derived phosphoramidites in asymmetric hydrogenation: can the presence of a functionality in the amino group influence the catalytic outcome?*  
L. Eberhardt, D. Armspach\*, J. Harrowfield, D. Matt\*, *Chem. Soc. Rev.* **2008**, *37*, 839-864.
- [38] *Self-assembled monolayers of  $\alpha$ -cyclodextrin derivatives on gold and their host-guest behavior*  
A. Perl, L. Kumprecht, T. Kraus\*, D. Armspach\*, D. Matt, D. N. Reinhoudt, J. Huskens\*, *Langmuir* **2009**, *25*, 1534-1539.
- [39] *Self-mediated stereoselective oxidation of thia-capped cyclodextrins*  
D. Armspach\*, D. Matt\*, L. Toupet, *Angew. Chem. Int. Ed.* **2009**, *48*, 4555-4558.
- [40] *Crystal structure of nonadecamethylated 6A,6C-epithio-6A,6C-dideoxy- $\alpha$ -cyclodextrin - pentane - water (1:1:1), C<sub>61</sub>H<sub>106</sub>O<sub>33</sub>S · C<sub>5</sub>H<sub>12</sub> · H<sub>2</sub>O*  
D. Armspach\*, D. Matt\*, L. Toupet, *Z. Kristallogr. NCS* **2009**, 224.
- [41] *“Through-space” nuclear spin-spin couplings in ferrocenyl polyphosphanes and diphosphino cavitands: A new way of gathering structural information in constrained P(III) ligands by NMR*  
J.-C. Hierso, D. Armspach\*, D. Matt\*, *C. R. Chim.* **2009**, *12*, 1002-1013.
- [42] *A cavity-shaped diphosphane displaying “oschelating” behavior*  
R. Gramage-Doria, D. Armspach\*, D. Matt\*, L. Toupet, *Angew. Chem. Int. Ed.* **2011**, *50*, 1554-1559.
- [43] *Ditopic binding of cyclodextrin-included ligands in trigonal silver(I) complexes*  
D. Armspach\*, D. Matt\*, L. Poorters, R. Gramage-Doria, P. Jones, *Polyhedron* **2011**, *30*, 573-578.
- [44] *Regioselective double capping of cyclodextrin scaffolds*  
R. Gramage-Doria, D. Rodriguez-Lucena, D. Armspach\*, C. Egloff, M. Jouffroy, D. Matt\*, L. Toupet, *Chem. Eur. J.* **2011**, *17*, 3911-3921.
- [45] *Methylated cyclodextrins as preorganisation platforms for the synthesis of multidentate chelating ligands aimed*

*at transition metal coordination and industrially relevant catalysis*

D. Armspach\*, D. Matt\*, *C. R. Chim.* **2011**, *14*, 135-148.

- [46] *Regioselective opening of proximally sulfato-capped cyclodextrins*  
M. Jouffroy, R. Gramage-Doria, D. Armspach\*, D. Matt\*, L. Toupet, *Chem. Commun.* **2012**, *48*, 6028-6030.
- [47] *Non-conventional coordination of cavity-confined metal centres*  
R. Gramage-Doria, D. Armspach, D. Matt, L. Toupet, *Dalton Trans.* **2012**, *41*, 8786-8796.
- [48] *TRANS DIP: a trans-chelating ligand tailor-made for probing unusual Pd<sup>0</sup> and Pd<sup>II</sup> intermediates*  
R. Gramage-Doria, D. Armspach\*, D. Matt\*, L. Toupet, *Chem. Eur. J.* **2012**, *18*, 10813-10816.
- [49] *Chelating properties of permethylated 6A,6D-dideoxy-6A,6D-bis(1-imidazolyl)cyclodextrins towards Pt(II) and Ru(III).*  
C. Egloff, R. Gramage-Doria, M. Jouffroy, D. Armspach\*, D. Matt\*, L. Toupet, *C. R. Chim.* **2013**, *16*, 509-514.
- [50] *Regioselective di- and tetra-functionalisation of  $\gamma$ -cyclodextrin using capping methodology*  
M. Jouffroy, D. Armspach\*, D. Matt\*, L. Toupet, *Org. Biomol. Chem.* **2013**, *11*, 3699-3705.
- [51] *Phosphane-phosphite chelators built on a  $\alpha$ -cyclodextrin scaffold: Application in Rh-catalysed asymmetric hydrogenation and hydroformylation.*  
M. Jouffroy, D. Sémeril, D. Armspach\*, D. Matt\*, *Eur. J. Org. Chem.* **2013**, 6069-6077.
- [52] *Metallated cavitands (calixarenes, resorcinarenes, cyclodextrins) with internal coordination sites*  
R. Gramage-Doria, D. Armspach\*, D. Matt\*, *Coord. Chem. Rev.* **2013**, *257*, 776-816.
- [53] *Capping methodology in cyclodextrin chemistry: Use of a symmetrical diketone reagent for regiospecific installation of unsymmetrical imine- enamine and imidazole caps.*  
M. Jouffroy, D. Armspach\*, A. Louati, D. Matt\*, L. Toupet, *Chem. Eur. J.* **2014**, *20*, 2565-2573.
- [54] *Confining phosphanes derived from cyclodextrins for efficient regio- and enantioselective hydroformylation.*  
M. Jouffroy, R. Gramage-Doria, D. Armspach\*, D. Sémeril, W. Oberhauser, D. Matt\*, L. Toupet, *Angew. Chem. Int. Ed.* **2014**, *53*, 3937-3940.
- [55] *Phosphinocyclodextrins as confining units for catalytic metal centres. Applications to carbon-carbon bond forming reactions*  
M. Jouffroy, R. Gramage-Doria, D. Sémeril, D. Armspach\*, D. Matt\*, W. Oberhauser, L. Toupet, *Beilstein J. Org. Chem.* **2014**, *10*, 2388-2405.
- [56] *Cyclodextrin and phosphorus(III): a versatile combination for coordination chemistry and catalysis*  
M. Jouffroy, D. Armspach\*, D. Matt\*, *Dalton Trans.* **2015**, *44*, 12942-12969.
- [57] *Synthesis of optically active polystyrene catalyzed by monophosphine Pd complexes*  
M. Jouffroy, D. Armspach, D. Matt, K. Osakada, D. Takeuchi\*, *Angew. Chem. Int. Ed.* **2016**, *55*, 8367-8370.
- [58] *Aza-capped cyclodextrins for intra-cavity metal complexation*  
D. Sechet, Z. Kaya, T.-A. Phan, M. Jouffroy, E. Bentouhami, D. Armspach\*, D. Matt\*, L. Toupet, *Chem. Commun.* **2017**, 11717-11720.
- [59] *Benzimidazolium- and benzimidazolilydene-capped cyclodextrins: new perspectives in anion encapsulation and gold-catalyzed cycloisomerization of 1,6-enynes*  
Z. Kaya, L. Andna, D. Matt, E. Bentouhami, J.-P. Djukic, D. Armspach\*, *Chem. Eur. J.* **2018**, *24*, 17921-17926.
- [60] *A comparative study of confining ligands derived from methylated cyclodextrins in gold-catalyzed cycloisomerization of 1,6-enynes*  
Z. Kaya, L. Andna, D. Matt, E. Bentouhami, J.-P. Djukic, D. Armspach\*, *Eur. J. Org. Chem.* **2019**, 4528-4537.

- [61] *Cavity-shaped ligands for asymmetric metal catalysis*  
Z. Kaya, E. Bentouhami, K. Pelzer, D. Armspach\*, *Coord. Chem. Rev.* **2021**, 445, 214066.
- [62] *A cavity-shaped cis-chelating P,N ligand for highly selective nickel-catalysed ethylene dimerisation*  
Y. Li, K. Pelzer, D. Sechet, G. Creste, D. Matt, P. Braunstein\*, D. Armspach\*, *Dalton Trans.* **2022**, 51, 11226-11230.
- [63] *Stable luminescent [Cu(NN)(PP)]<sup>+</sup> complexes incorporating a β-cyclodextrin-based diphosphane Ligand with metal-confining properties*  
T. A. Phan, N. Armaroli, A. S. Moncada, E. Bandini, B. Delavaux-Nicot\*, J. F. Nierengarten\*, D. Armspach\*, *Angew. Chem. Int. Ed.* **2023**, 62, e202214638.
- **Articles in national journals**
- [64] *TRANSDIP : un trans-chélateur authentique*  
L. Poorters, M. Lejeune, D. Armspach, D. Matt, *Actual. Chim.* **2009**, 326, 15-18.
- **Book chapters**
- [65] *Carborane-functionalized ligands for metallocsupramolecular chemistry*  
D. Armspach, M. Cattalini, E. C. Constable, C. E. Housecroft, M. Neuburger, M. Zehnder, in *Advances in Boron Chemistry*, RSC Special Publication N°. 201, Cambridge, **1997**, p 297.
- [66] *Cyclodextrins*  
D. Armspach, G. Gattuso, R. Königer, J. F. Stoddart, in *Bioorganic Chemistry: Carbohydrates* (Ed.: S. M. Hecht), Oxford University Press, New York, **1999**, p. 458.
- [67] *Coordination chemistry and catalysis (with regard to calixarenes)*  
C. Wieser-Jeunesse, S. Steyer, D. Armspach, D. Matt, J. Harrowfield in *Calix 2001* (Eds: J. Vicens, Z. Asfari, J. M. Harrowfield, V. Böhmer), Kluwer Academic Publishers, Dordrecht, **2001**, p. 513.
- **Patents**
- [68] *Cyclodextrin catenane compounds capable of forming inclusion complexes*  
D. Armspach, C. P. Moore, J. F. Stoddart, T. J. Wear, *US Patent* 5,438,133, **1995**.
- [69] *Aza-capped cyclodextrins and process of preparing them*  
D. Armspach, D. Matt, M. Jouffroy, *Eur. Pat. Appl.* EP 3281957 A1 20180214, **2018**.
- **Proceedings**
- [70] *Phosphinidene-capped cyclodextrins – A new generation of introverted ligands.*  
L. Poorters, D. Armspach, E. Engeldinger, D. Matt, *Proceedings of the 12<sup>th</sup> International Cyclodextrin Symposium*, Montpellier, France, APGI, **2004**, 73-76.
- [71] *Effective A,B-disubstitution of cyclodextrins using capping reagents containing two "trityl" subunits*  
L. Poorters, D. Armspach, D. Matt, B. Benmerad, F. Balegroune, *Proceedings of the 12<sup>th</sup> International Cyclodextrin Symposium*, Montpellier, France, APGI, **2004**, 117-120.