Josep Cornella

Date of Birth: 2nd February 1985
Nationality: Spanish
Max-Planck-Institut für Kohlenforschung
Kaiser-Wilhelm-Platz, 1, Mülheim an der Ruhr, 45470, Germany
Phone +49 (0) 208/306-2428
Email cornella@kofo.mpg.de

Academic Career

10/2017-currently	**Max-Planck Research Group Leader** – Max-Planck-Institut für Kohlenforschung (DEU), Department of Organometallic Chemistry - Prof. Alois Fürstner
04/2017-10/2017	**Group Leader** – Max-Planck-Institut für Kohlenforschung (DEU), Department of Organometallic Chemistry - Prof. Alois Fürstner
08/2015-03/2017	**Postdoctoral Research Fellow (Beatriu de Pinós Fellowship)** – The Scripps Research Institute (USA) - Prof. Phil S. Baran
02/2012-04/2015	**Postdoctoral Research Fellow (Marie Curie – FP7)** – Institute of Chemical Research of Catalonia (SPA) - Prof. Ruben Martin
09/2008-01/2012	**Ph.D. in Organic Chemistry** – Queen Mary, University of London (UK) - Prof. Igor Larrosa
09/2007-09/2008	**MSci in Organic Chemistry** – Universitat de Barcelona (SPA)
09/2003-09/2007	**Chemistry BSc.** – Universitat de Barcelona

Awards and Honours

2021	Heinz Maier-Leibnitz-Preis 2021 (Deutsche Forschungsgemeinschaft)
2020	ORCHEM Nachwuchspreis 2020
2020	Bayer Early Excellence in Science Award 2020
2020	Ruhrpreis für Kunst und Wissenchaft 2020
2020	Otto Röhm Gedächtnisstiftung Forschung Preis 2020
2020	C&EN Talented 12 - Class 2020
2020	Dozentenpreis des Fonds (Fonds der Chemischen Industrie)
2020	Marcial Moreno Award (Royal Spanish Chemical Society-Catalan Section)
2020	ERC Starting Grant 2020 (European Comission)
2019	Münster Symposium-CEC Young Researcher Award
2019	JSP Fellowship (Bürgenstock Conference)
2018	Thieme Chemistry Journals Award
2017	Independent Max-Planck Research Group Leader position at the Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr, Germany
2015	Beatriu de Pinos Postdoctoral Fellowship - Generalitat de Catalunya, Spain
2014	EXPLORA-PROJECT - Ministry of Economia y Competitividad, Spain
2013	Marie Curie Postdoctoral Fellowship – IEF – FP7
2012	COFUND-IPMP - European Research Council–Marie Curie Actions
2007	Research Scholarship - Ministry of Education and Science, Spain
2003	First Degree Scholarship - Ministry of Education and Science, Spain

Publications

Independet Career at Max-Planck-Institut für Kohlenforschung (April 2017)

47. *16-Electron Nickel(0)-Olefin Complexes in Low-Temperature C(sp^2)–C(sp^3) Kumada Cross-Couplings.*
Lutz, S.; Nattmann, L.; Nöthling, N.; **Cornella, J.*** *Organometallics* **2021***, asap*.

46. *Dialkyl Ether Formation at High-Valent Ni(IV)*.
Le Vaillant, F.; Reijerse, E.; Leutzsch, M. **Cornella, J.*** *J. Am. Chem. Soc.* **2020**, *142*, 19540.

45. *Catalytic Activation of N_2O at a Low-Valent Bismuth Redox Platform.*
Pang, Y.; Leutzsch, M.; Nöthling, N.; **Cornella, J.*** *J. Am. Chem. Soc.* **2020***, 142*, 19473.

44. *Unified Strategy for Arylsulfur(VI) Fluorides from Aryl Halides: Access to Ar-SOF_3 Compounds*.
Wang, L.; **Cornella, J.*** *Angew. Chem. Int. Ed.* **2020***, 59*, 23510.

43. *Ni($^{4\text{-}tBu}$stb)$_3$: A Robust 16-Electron Ni(0) Olefin Complex for Catalysis*.
Nattmann, L.; **Cornella, J.*** *Organometallics* **2020**, *39*, 3295.

42. *Bismuth-catalyzed Oxidative Coupling of Arylboronic Acids with Trifalte and Nonaflate Salts*.
Planas, O.; Peciukenas, V.; **Cornella, J.*** *J. Am. Chem. Soc.* **2020**, *142*, 11382.

41. *Synthesis of Sulfonyl Fluorides from Sulfonamides*.
Perez-Palau, M.; **Cornella, J.*** *Eur. J. Org. Chem,* **2020**, 2497. (invited article for YourJOC Talents).

40. *Fluorination of Arylboronic Esters Enabled by Bismuth Redox Catalysis*.
Planas, O.; Wang, F.; Leutzsch, M.; **Cornella, J.*** *Science*, **2020**, *367*, 313.

39. *An Air-Stable Binary Ni(0)-Olefin Catalyst*.
Nattmann, L.; Saeb, R.; Nöthling, N.; **Cornella, J.*** *Nat. Catal.* **2020**, *3*, 6.

38. *Radical C–N Borylation of Aromatic Amines Enabled by a Pyrylium Reagent*.
Ma, Y.; Pang, Y.; Niski, J.; Leutszch, M.; **Cornella, J.*** *Chem. Eur. J.* **2020**, *26*, 3738.

37. *Pyrylium Salts: Selective Reagents for the Activation of Primary Amino Groups in Organic Synthesis*.
Pang, Y.; Moser, D. **Cornella, J.*** *Synthesis* **2020**, *52*, 489. (Part of the Special Issue Bürgenstock 2019: Future Stars in Organic Chemistry).

36. *Facile Access to Chiral non-Natural Aminoacids*.
Planas, O.; **Cornella, J.*** *Nat. Catal.* **2019,** *2*, 839 (Perspective)

35. *Selective Late-Stage Sulfonyl Chloride Formation from Sulfonamides Enabled by Pyry-BF_4*.
Gomez-Palomino, A.; **Cornella, J.*** *Angew. Chem. Int. Ed.* **2019**, *58*, 18235.

34. *Bi(I)-catalyzed Transfer-Hydrogenation with Ammonia Borane.*
Wang, F.; Planas, O.; **Cornella, J.*** *J. Am. Chem. Soc.* **2019***, 141,* 4235.

33. *Ni-catalyzed Reductive Liebeskind-Srogl Alkylation of Heterocycles.*
Ma, Y.; Cammarata, J.; **Cornella, J.*** *J. Am. Chem. Soc.* **2019***, 141,* 1918**.**

32. *A Highly Reduced Ni-Li-Olefin Complex for Kumada-Corriu Cross-Couplings.*
Nattmann, L.; Lutz, S.; Ortsack, P.; Goddard, R. **Cornella, J.*** *J. Am. Chem. Soc.* **2018,** *140,* 13628.

31. *A Perspective in Catalysis: Development of Efficient Methods in the Age of Sustainability.*
O'Neill, M. J.; **Cornella, J.*** *Chimia* **2018**, *72*, 601. (Invited contribution to the topic "Organometallics and Catalysis")

30. *Retaining Alkyl Nucleophile Regiofidelity in Transition-Metal-Mediated Cross-Couplings to Aryl Electrophiles.*
O'Neill, M. J.; **Cornella, J.*** *Synthesis* **2018***, 50,* 3974.

29. *Selective Functionalization of Aminoheterocycles by a Pyrylium Salt*.
Moser, D.; Duan. Y.; Wang, F.; Ma, Y.; O'Neill, M. J.; **Cornella, J.***Angew. Chem. Int. Ed.* **2018**, *57*, 11035.

28. *Thorpe-Ingold Effect for Branch-Selective Alkylation of Unactivated Aryl Fluorides.*
O'Neill, M. J.; Riesebeck, T.; **Cornella, J.*** *Angew. Chem. Int. Ed*. **2018**, 57, 9103.

Previous to MPI – (§) indicates equal contribution

27. *CITU: A Peptide and Decarboxylative Agent.*

deGruyter, J. N.; Malins, L. R.; Wimmer, L.; Clay, K. J.; Lopez-Ogalla, J.; Qin, T.; **Cornella, J.**; Liu, Z.; Che, G.; Bao, D.; Stevens, J. M.; Qiao, J. X.; Allen, M. P.; Poss, M. A.; Baran, P. S. *Org. Lett*. **2017**, *19*, 6196.

26. *Alkyl-(Hetero)Aryl Bond Formation via Decarboxylative Cross-Coupling: A Systematic Analysis.*

Sandfort, F.;[§] O'Neill, M. J.;[§] **Cornella, J.**; Wimmer, L.; Baran, P. S. *Angew. Chem. Int. Ed*. **2017**, *56*, 3319.

25. *Redox-Active Esters in Fe-catalyzed Cross-Coupling.*

Toriyama, F.;[§] **Cornella, J.;[§]** Wimmer, L.; Chen, T. –G.; Dixon, D. D.; Creech, G.; Baran, P. S. *J. Am. Chem. Soc.* **2016**, *138,* 11132.

24. *Nickel-catalyzed Cross-coupling of Redox-Active Esters with Boronic Acids.*

Wang, J.; Qin, T.; Chen, T. –G.; Wimmer, L.; Edwards, J. T.; **Cornella, J.**; Vokits, B.; Shaw, S. A.; Baran, P. S. *Angew. Chem. Int. Ed.* **2016**, *55*, 9676.

23. *A General Alkyl-Alkyl Cross-Coupling Enabled by Redox-Active Esters and Alkylzinc Reagents.*

Qin, T.;[§] **Cornella, J.;**[§] Li, C.;[§] Malins, L. R.; Edwards, J. T.; Kawamura, S.; Maxwell, B. D.; Eastgate, M. D.; Baran, P. S. *Science*. **2016**, *352*, 801.

22. *Practical Ni-Catalyzed Aryl-Alkyl Cross-Coupling of Secondary Redox-Active Esters.*

Cornella, J.;[§] Edwards, J. T;[§] Qin, T.; Kawamura, S.; Wang, J.; Pan, C. –M.; Gianatassio, R.; Schmidt, M.; Eastgate, M D.; Baran, P. S*. J. Am. Chem. Soc*. **2016**, *138*, 2174.

21. *Remote Carboxylation of Aliphatic Hydrocarbons with Carbon Dioxide.*

Julia-Hernandez, F.; Moragas, T.; **Cornella, J.**; Martin, R. *Nature***, 2017**, *545*, 84.

20. *Visible-Light-Promoted Atom Transfer Radical Cyclization of Unactivated Alkyl Iodides.*

Y. Shen; **Cornella, J.**; F. Julia-Hernandez; Martin, R. *ACS Catal*., **2017**, *7*, 409.

19. *Ni-catalyzed Enantioselective C–C Bond Formation via C(sp^2)–O Cleavage in Aryl Esters.*

Cornella, J.; Jackson, E. P.; Martin, R*. Angew. Chem. Int. Ed.* **2015**, *54,* 4075*.*

18. *Ligand-controlled Regiodivergent Ni-catalyzed Reductive Carboxylation of Allyl Esters with CO_2.*

Moragas, T.;[§] **Cornella, J.**;[§] Martin, R. *J. Am. Chem. Soc.* **2014**, *136*, 17702.

17. *Ni-catalyzed Carboxylation of Unactivated Primary Alkyl Bromides and Sulfonates with CO_2.*

Liu, Y.; **Cornella, J.**; Martin, R. *J. Am. Chem. Soc*. **2014**, *136*, 11212.

16. *Metal-catalyzed Activation of Ethers via C–O Bond Cleavage: A New Strategy for Molecular Diversity*.

Cornella, J.;[§] Zarate, C.;[§] Martin, R. *Chem. Soc. Rev*. **2014**, *43*, 8081.

15. *Ni-catalyzed Reductive Cleavage of Methyl 3-Methoxy-2-Naphthoate.*

Cornella, J.; Zarate, C.; Martin*,* R. *Org. Synth.* **2014**, *91,* 60.

14*.* *Ni-catalyzed Stereoselective Arylation of Inert C–O bonds at Low Temperatures.*

Cornella, J.; Martin, R*. Org. Lett.* **2013**, *15,* 6298.

13. *A Combined Experimental and Theoretical Study on the Reductive Cleavage of Inert C–O Bonds with Silanes: Ruling out a Classical Ni(0)/Ni(II) Catalytic Couple and Evidence for Ni(I) Intermediates.*

Cornella, J.; Gomez-Bengoa, E.; Martin, R*. J. Am. Chem. Soc*. **2013**, *135,* 1997*.*

12. *Nickel-Catalyzed Decarbonylative C–H Coupling Reactions: A Strategy for Preparing Bis(Heteroaryl) Backbones.*

Correa, A.; **Cornella, J.**; Martin, R. *Angew. Chem. Int. Ed.* **2013**, *52*, 2 (Highlight).

11. *The ortho-Substituent Effect on the Ag-catalysed Decarboxylation of Benzoic Acids.*

Grainger, R.; **Cornella, J.**; Blakemore, D. C.; Larrosa, I.; Campanera, J. –M. *Chem. –Eur. J*. **2014**, *20*, 16680.

10. *Selective Deuteration of (Hetero)aromatic Compounds via Deutero-decarboxylation of Carboxylic Acids.*

Grainger, R.; Nikmal, A.; **Cornella, J.**; Larrosa, I. *Org. Biomol. Chem.* **2012**, *10*, 3172.

9. *Decarboxylative C–C Bond Forming Transformations of (Hetero)aromatic Carboxylic Acids.*
Cornella, J.; Larrosa, I. *SYNTHESIS*, **2012**, *44*, 653.

8. *Carboxylic Acids as Traceless Directing Groups for Formal meta-Selective Direct Arylation.*
Cornella, J.; Righi, M.; Larrosa, I. *Angew. Chem. Int. Ed*. **2011**, *40*, 9429.

7. *A Novel Mode of Reactivity for Gold(I): The Decarboxylative Activation of (Hetero)aromatic Carboxylic Acids*.
Cornella, J.; Rosillo-Lopez, M.; Larrosa, I. *Adv. Synth. Catal*. **2011**, *353*, 1359.

6. *Decarboxylative Homocoupling of (Hetero)aromatic Carboxylic Acids.*
Cornella, J.; Lalhali, H.; Larrosa, I. *Chem. Commun*. **2010**, *46*, 8276.

5. *Silver-Catalyzed Protodecarboxylation of Heteroaromatic Carboxylic Acids.*
Lu, P. F.; Sanchez, C.; **Cornella, J.**; Larrosa, I. *Org. Lett*. **2009**, *11*, 5710.

4. *Intermolecular Decarboxylative Direct C-3 Arylation of Indoles with Benzoic Acids*.
Cornella, J.; Lu, P. F.; Larrosa, I. *Org. Lett*. **2009**, *11*, 5506.

3. *Silver-catalysed Protodecarboxylation of ortho-Substituted Benzoic Acids.*
Cornella, J.; Sanchez, C.; Banawa, D.; Larrosa, I. *Chem. Comm*. **2009**, *46*, 7176.

2. *Stereodivergent Addition of 4-Sililoxy-1,2-Allenes to Aldehydes.*
Sanchez, C.; Ariza, X.; **Cornella, J.**; Farras, J.; Garcia, J. *Chem. Eur. J*. **2010**, *16*, 11535.

1. *Silver Stereocontrolled Synthesis of Highly Functionalized Quaternary Carbon Centers: A Route to α-Substituted Serines*.
Ariza, X.; **Cornella, J.**; Font-Bardia, M.; Garcia, J.; Ortiz, J.; Sanchez, C.; Solans, X. *Angew. Chem. Int. Ed*. **2009**, *48*, 4202.

Patents

2. *Air-Stable Ni(0)-Olefin Complex and its Use as Catalyst and Pre-catalyst.*
Nattmann, L.; **Cornella, J. 2019**. EP19189236.3.

1. *Catalytic Carboxylation of Alkyl Bromides and Olefins with CO_2.*
Juliá-Hernandez, F.; **Cornella, J.**; Martin, R. **2016**. EP16382336.