CV Nicola Della Ca'

Prof. Nicola Della Ca' graduated in Industrial Chemistry (with honors) at the University of Parma (Italy) in 2000. In 2004 he completed his Ph.D. in Chemical Sciences (University of Parma), mainly working on catalytic carbonylation reactions. During the Ph.D. he was *visiting scholar* at the Department of Chemistry – Iowa State University in the group of Professor Richard C. Larock. In 2005 he joined Catellani's group (SSD CHIM/04). As co-worker of Prof. Marta Catellani, former leader of one of the main research group on homogeneous catalysis in Italy, Della Ca' has worked on the internationally recognized *Catellani reactions* in the **C-H activation area** for many years. The two Accounts on *Account of Chemical Research Journal* (*Acc. Chem. Res.* **2008**, *41*, 1512, and *Acc. Chem. Res.* **2016**, *49*, 1389), that include his major achievements in the field, have registered more than 500 citations to date, testifying the wide interest and the outstanding impact of his research in this area. Actually, Prof. Della Ca' leads his research group and continues to work on this topic maintaining high standards (for example: *Chem. Eur. J.* **2018**, 24, 14079, *ChemCatChem* **2018**, 10, 4346). Over the years, important advancements in the **carbonylation chemistry** were successfully achieved, and actually Prof. Della Ca' carries on the study on carbonylative cascade reactions aimed at the synthesis of complex polycyclic structures (for example: *Chem. Eur. J.* **2018**, 24, 4835, HOT PAPER, and *Org. Lett.* **2020**, *22*, 1569–1574). In addition, from an applicative point of view, a carbonylative protocol was recently used to prepare anti-HIV agents (Italian patent application UA2016A001346 in 03-2016, and PCT/IB2017/051261 in 03-2017). Among the authors, Della Ca' holds the main percentage (17%). Prof. Della Ca' has developed important sustainable methodologies for the synthesis of industrial products, such as linear and cyclic carbonates, carbamates and urea derivatives, starting from CO_2 by means of **organocatalysts**. Highly cited articles, where Della Ca' figures as co-author (*Adv. Synth. Catal.* **2011**, *353*, 133) and corresponding author (*J. CO_2 Utilization* **2017**, *21*, 553), have been published in this field.

Curriculum Studiorum:

- April 2000: Degree in Industrial Chemistry with honors (University of Parma, Italy)
- September 2000-December 2001: Research stage and EU Fellowship (1y) at University of Parma (Italy) under the supervision of Prof. Rocco Ungaro
- January 2002 - December 2004: PhD in Chemical Sciences (University of Parma, Italy)
- August 2003 - February 2004: Visiting Scholar at Department of Chemistry – Iowa State University - Ames (USA) under the supervision of Prof. Richard C. Larock
- January 2005 - June 2005: Postdoctoral Fellowship at University of Parma (Italy) under the supervision of Prof. Pietro Moggi

Academic Career:

- November 2005 - September 2020: Researcher (RU) of Industrial Chemistry (CHIM/04), University of Parma
- September 2020 - to date: Associate Professor of Industrial Chemistry (CHIM/04), University of Parma

Current Research Activity:

The current research activity of Nicola Della Ca' spreads in the field of Homogeneous Catalysis. More specifically, his research has produced a significant impact in the following research fields: 1) C-H activation: Transition metal-catalyzed synthesis of complex organic molecules through sequential reactions involving C-H bond activation and subsequent C-C, C-O and C-N bond formation (Catellani Reactions); 2) Carbonylation reactions: Development of innovative carbonylation protocols for the synthesis of pharmaceutical / industrial products: 3) CO_2 fixation: Development of new carbon dioxide fixation methods based on the use of organocatalysts.

Scientific production and bibliometric data (updated January, 15, 2021):

- Author or co-author of 68 papers in international peer-reviewed journals (18 as corresponding author, covers = 3), 1 chapters in international book, 1 italian patent, and more than 50 communications in national or international conferences.
- Total citations: 2713 (Scopus), 2497 (ISI), 2808 (Google Scholar)
- h-index: 25 (Scopus), 24 (ISI), 26 (Google Scholar)

Awards:

- *Seal of Excellence* has been released for the project proposal 842885, CO-META, "Enabling sequential META C-H activation and carbonylation of arenes", Submitted under the Horizon 2020's Marie Skłodowska-Curie actions call H2020-MSCA-IF-2018 of 12 September 2018.
- "*Giorgio Squinzi Prize*" for the Master Thesis of Elena Bombonato (supervisors: Proff. Nicola Della Ca' and Elena Motti) entitled "*Synthesis of ortho-substituted aromatic iodides by Catellani reactions*" in collaboration with Chiesi Farmaceutici.
- Several publications have been reviewed by international journals, such as *ChemInform* and *Synfacts*, highlighted on *Organic Chemistry Portal*, published together with an Inside Back Cover or Frontispieces, or classified as Hot Paper.

Scientific and academic Activities:

- Member of the Italian Chemical Society (Divisione Chimica Industriale, Gruppi Interdivisionali di Catalisi e di Chimica Organometallica, 2000-present)
- Member of the "Consorzio Interuniversitario Reattività Chimica e Catalisi" (CIRCC, Parma Unit, 2005-Present)
- Member of the "Centro Interdipartimentale per l'energia e l'ambiente" (CIDEA, 2013-Present)
- Member of the National Committee for the Evaluation of the University System (Committee 103) for Chemical and Pharmaceutical Sciences (2014-2017)
- Directory Board Member of the Emilia Romagna Section of the Italian Chemical Society (2018-2020)
- Member of the Scientific Committee of the PhD course in Chemical Sciences (Doctorate School in Chemical Sciences and Technologies) at University of Parma, from 2017
- Member of the scientific and organizing committee of the "Giornata della Chimica dell'Emilia Romagna" (2006, 2018, 2019).
- Responsible for the organization of the *Researchers' Night*, in the years 2011, 2013, 2014 and 2015 at the Department of Chemistry of University of Parma.
- Member of the "Commissione Orientamento" for the Industrial Chemistry area (2010-present)
- Member of the "Piano Nazionale Lauree Scientifiche" (PLS, Parma - Chemistry Area, 2010-present)
- Member of GAV (Gruppo di Autovalutazione) and RAQ (Responsabile Assicurazione Qualità) for the Bachelor Degree in Chemistry (3024) until 2016, and for the Master Degree in Industrial Chemistry (5041) from 2017 to date.
- Scientific referee for NCN (National Science Center) of Ministry of Science and Higher Education (Poland) (2014).
- PhD External Examiner for the XXVIII cycle of the Ph.D. program in Chemical Sciences (Doctorate School in Chemical Sciences and Technologies) at the Faculty of Science and Technology of the University of Milan (2015).
- Chair di conferenza internazionale (Euro chemistry conference, June 12, 2018, Rome, Italy).
- Editorial board member for the international scientific journal "Catalysts" (MDPI journal).
- Guest Editor of the Topical Collection "*Molecules from Catalytic Processes*" on Molbank (MDPI journal)

- Guest Editor of the Special Issue " *Palladium-Catalyzed Reactions*" on Catalysts (MDPI journal)
- Guest Editor of the Special Issue "*Palladium-Catalyzed Reactions: Chapter II*" on Catalysts (MDPI journal)
- Referee for several international scientific journals, including: Chemistry - A European Journal (Wiley-VCH); Advanced Synthesis and Catalysis (Wiley-VCH); Chem (CellPress); ACS Catalysis (ACS), Organic Letters (ACS); Journal of Organic Chemistry (ACS); RSC Advances (Royal Society of Chemistry, UK).

Participation in recent research projects:

2021-2023 Scientific Coordinator of a Proof of Concept (PoC) project ("PARMA – PoC PAtent and Research results valorisation and MAnagement through PoC projects") funded by MISE (Ministero dello Sviluppo Economico) related to the patent "Uso di derivati 2-oxo-2H-pirrol-1(H)-carbossamidici come agenti anti-HIV e processo per la loro produzione" 102016000022765 (UA2016A001346), Granted: 14-09-2018.
2020-2022 Scientific Coordinator of the MSCA-IF-ST action "METACYL" in H2020 ("Catalytic META C-H ACYLation of arenes") 24 months (183.473 euro, Grant Agreement n. 894026, https://cordis.europa.eu/project/id/894026/it).
2018-2019 Scientific Coordinator of the project: "Study of a system for the elimination of chemical species such as acetic acid, peracetic acid and hydrogen peroxide from the rinse water of an aseptic filling line" between UNIPR and GEA-Procomac SpA
2016-2020 Member of the COST Action CA15106 "C-H Activation in Organic Synthesis" (CHAOS)
2017 Fondo di Finanziamento individuale delle Attività Base di Ricerca (FFABR, MIUR)
2015-2016 Scientific Coordinator of the project: "Preparation of abrasive materials and evaluation of their thermal stability" between UNIPR and Paolo Corazzi Fibre s.r.l.
2014-2015 Scientific Coordinator of the project: "Study of the effect of comonomers in the polymerization of acrylic monomers" between UNIPR and Chimica Pomponesco s.p.a. (Frati Group)
2008-2009 Member in the project: "*Development of catalysts to accelerate and inhibit the cross-linking of plastic materials (cross-linked polyethylene)*" between UNIPR and Padanaplast (Solvay Group)
2006-2010 Member in national projects funded by the Italian Ministry for University and Scientific Research (MIUR): PRIN 2008: Scientific Project "*Catalytic synthesis in ordered sequences: introduction of carbon monoxide and carbon dioxide in organic substrates*", (2 years) and PRIN 2006: Scientific Project "*Complex catalytic systems for the realization of new selective syntheses from a multiplicity of components under mild conditions*",(2 years)