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► **To cite this version:**

Matthieu Sollogoub, Emmanuelle Schulz. Spotlight on the Winners of the DCO-SCF 2021 Awards – An Ever Valuable Collaboration with EurJOC. *European Journal of Organic Chemistry*, 2023, 26 (7), pp.e202300006. 10.1002/ejoc.202300006 . hal-04273796

**HAL Id: hal-04273796**

**<https://hal.science/hal-04273796>**

Submitted on 9 Nov 2023

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## Spotlight on the Winners of the DCO-SCF 2021 Awards – An Ever Valuable Collaboration with EurJOC

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Close connection between a chemical society and its journals is an essential component of their respective successes, as it ensures mutual promotion. We are therefore delighted to continue the collaboration, started in 2019, between the Division de Chimie Organique (DCO) of the Société Chimique de France (SCF) and the European Journal of Organic Chemistry with this spotlight on the 2021 DCO-prizes awardees. Of course, SCF has always been highly involved in Chemistry Europe since 1995 as one of the sixteen founding chemical societies, but EurJOC and the DCO decided to further strengthen their links through a series of actions. For instance, this partnership has consisted of setting up many fruitful joint events over the past three years. In particular, the support of EurJOC was essential for the organization, broadcasting, advertising and success of the DCO's Journées de Chimie Organique (Organic Chemistry Days) which are held twice a year. This has been particularly precious during the pandemic where we have been able to organize pure videoconferences; but it is still the case now as we could set up a hybrid mode, with the exciting possibility of being able to meet for in person exchanges, but also for those for whom traveling was not possible, to enjoy the very high quality of the lectures given by our guests. Another important part of our collaboration is the edition of a special issue of EurJOC highlighting the recipients of the prizes delivered by the SCF-DCO at all stages of a scientific career. The collection prepared by the 2020 winners can be read at this [link](#). Beyond the organization of meetings for fruitful exchanges and dissemination, a role that is particularly close to the heart of the DCO is indeed the promotion of the excellence of SCF members, in France and abroad, at all stages of their career. Thus, each year, the DCO awards 8 prizes to brilliant researchers, which we are pleased to present to you here. All awardees were indeed invited to contribute an original research article or a review to EurJOC with the possibility of highlighting their work with a free front cover (Figure 1). We are very grateful to our recipients, most of whom answered positively to this invitation.

The DCO is very proud to highlight two particularly talented PhD students with the Henri Kagan and the Dina Surdin Prizes. The 2021 *PhD Henri Kagan prize* was awarded to *Johanna Frey* who studied chemistry at the École Nationale Supérieure de Chimie de Paris, concurrently obtaining a Master's degree in Molecular Chemistry at Sorbonne University. She then began her PhD at Strasbourg University under the guidance of Drs. Françoise Colobert, Joanna Wencel-Delord and Sabine Choppin. She defended her thesis entitled "Copper-catalyzed atroposelective C-N couplings with hypervalent iodides" in mid-

2020. She described efficient atropodistereoselective copper-couplings with chiral sulfoxides as chirality inducers. She also succeeded performing an atropoenantioselective version of these couplings using an enantiopure bis(oxazoline) copper complex in the presence of Lewis acids.

The *Dina Surdin PhD award* was presented to *Charlotte Lorton* for her doctoral work on new methodologies in asymmetric redox organocatalysis by phosphines for the preparation of valuable cyclic compounds. She studied chemistry at the Paris-Saclay University where she obtained a Master in organic chemistry as well as a Magister diploma from École Normale Supérieure Paris-Saclay in 2017. Her PhD has been conducted at the Institut de Chimie des Substances Naturelles (ICSN) in Gif-sur-Yvette, under the direction of Dr. Arnaud Voituriez. She succeeded in running a highly efficient and enantioselective phosphine-catalyzed tandem Michael addition/Wittig reaction, demonstrating for instance the successful use of trifluoropentane-2,4-dione derivatives together with chiral HypPhos phosphines. She thus described the first P(III)/P(V)=O redox process for the asymmetric synthesis of fluorinated cyclobutenes and spiro-cyclobutenes isolated with up to 95 % ee. After defending her thesis in November 2020, Charlotte joined the team of Pr. John F. Bower in Liverpool to synthesize new chiral Au(III) complexes.

The DCO further awards young researchers with the Marc Julia prize at the very beginning of their career. The 2021 *Marc Julia prize* was awarded to *Sophie Feuillastre* who studied chemistry at the CPE engineering school in Lyon before carrying out her PhD in total synthesis with Pr. Olivier Piva at the ICBMS, Lyon University. During this time, she prepared high added value compounds such as nhatrangine A and (+)-guaymasol, and she also developed new synthetic methodologies based on metathesis reactions and radical chemistry. She then joined the CEA for a postdoctoral position under the guidance of Drs Bernard Rousseau and Grégory Pieters where she worked on isotopic labelling with hydrogen isotopes and on the design of new molecules for energy. As a senior chemist at Cortecnet society, she considered synthetic routes towards <sup>13</sup>C- et D-labelled molecules for applications in medical imaging. She then obtained a permanent position in the CEA team of Dr. Pieters to develop new routes of deuteration/tritiation of molecules of biological interest but also in the field of materials. Very involved in national and international collaborative projects, she is also interested in isotopic labelling in continuous flow. She shares with us in this special issue another of her expertise, which deals with regioselective cross-dehydrogenative homocouplings,

performed via ruthenium-promoted heterogeneous catalysis. The efficiency of this methodology is demonstrated for the coupling of 2-aryl-*N*-heterocycles, in the presence of iron chloride as oxidant, for the study of the photophysical properties of the corresponding borane dimer complexes.



Figure 1. EurJOC Front Covers designed by the 2021 awardees.

In France, the status of researcher is not identical with regard to the teaching load in the case where one works for the CNRS or for a university. Therefore, the *Jean-Pierre Sauvage award* was created for young CNRS researchers who have been practicing their profession for less than eight years. *Davide Audisio* was the recipient of the 2021 prize. He underwent his undergraduate studies in Turin (Italy) before moving to France at the faculty of pharmacy from the Paris-Sud University to prepare a PhD in medicinal chemistry under the supervision of Drs Mouâd Alami and Samir Messaoudi. He synthesized new derivatives of novobiocine as potential Hsp90 inhibitors. In 2010, he joined the group of Pr. Nuno Maulide at the Max-Planck-Institut für Kohlenforschung in Mülheim an der Ruhr (Germany), where he conducted asymmetric catalysis studies and developed the enantio- and diastereoselective synthesis of substituted cyclobutenes. He further spent two years at the chemistry department of Eli Lilly & Co. (Windlesham, UK), to work on the development of clinical candidates for neurodegenerative diseases. In 2014, he was appointed to the CEA Saclay with a permanent position, and joined the group of Dr. Frédéric Taran to develop the chemistry of mesoionic heterocycles and “click and release” reactions. His research interests currently cover various areas of organic chemistry, including carbon isotope labeling methodologies, the chemistry of helicene and polyaromatic compounds, and the development of new tools for bio-orthogonal chemistry. He presents in this special issue an approach to evaluate the robustness of the Staudinger aza-Wittig reaction for carbon isotope labeling, based on  $[^{14}\text{C}]\text{CO}_2$  screening with most of the representative heterocycles and functional groups found in FDA approved drugs.

The *Jean Normant Prize* is awarded to a young assistant professor at the same stage of his or her career as the previous one, and was awarded in 2021 to *William Erb*. He completed his undergraduate training at the Paris-Sud University and prepared his doctoral thesis with Pr. Jieping Zhu at the ICSN, where he developed various approaches towards an antibiotic, the lipiarmycine A3, and new palladium-catalyzed reactions. He then carried out several post-doctoral stays in the teams of Prs.

Varinder Aggarwal (Bristol), Janine Cossy (Paris), Jacques Rouden (Caen) and Géraldine Gouhier (Rouen) on various topics such as the application of organocatalyzed reactions for the synthesis of prostaglandins, the total synthesis of triterpenes, the chemistry of boronic acids or cyclodextrins. He was recruited in 2015 as a Lecturer at the University of Rennes, in the Organic Chemistry & Interfaces team, where he works, in particular, on the use of bimetallic reagents and reactions catalyzed by copper complexes to access biologically active compounds. He is also developing a research axis dedicated to the chemistry of ferrocenes looking for new synthetic methodologies towards derivatives presenting either original functional groups or substitution patterns for applications in catalysis or at the interface with biology. It is in this latter field that he proposes here a new synthetic route involving an HFIP-promoted substitution for the preparation of new ligands in the ferrocene series.

*Samir Messaoudi* received the *Jean-Marie Lehn prize* as recognition of the excellence of the work he has carried out over the past decade. Samir Messaoudi completed his studies at the Blaise Pascal University in Clermont Ferrand, preparing a PhD with Pr. Michelle Prudhomme on the synthesis of rebecamycin, staurosporine and granulatimide analogues, as antitumor agents. He obtained a first postdoctoral position for the synthesis of the southeast fragment of microsclerodermin A, with Pr. David Aitken. He then joined the Paris-Sud University (BioCIS), first as a postdoctoral researcher for the synthesis of new anastrozole analogues as antitumor agents (with Pr. Jean-Daniel Brion and Dr. Mouâd Alami), then as CNRS researcher in 2007. His research activities were mainly centered on the functionalization of heterocyclic frameworks via organometallic couplings. He is also interested in medicinal chemistry projects, in particular inhibitors of the heat shock protein Hsp90, anti-mitotic compounds or modulators of the TCTP protein for the treatment of cancers. He then initiated a new theme in the field of glycochemistry to study and understand the reactivity of sugars in the presence of transition metals in order to develop innovative catalytic approaches for their functionalization. He recently embarked on the exploration of new chemical spaces such as glycopeptides or glycopolymers as well as the design of bioactive glycomimetics (S- and C-glycosides). He proposes in this issue a facile synthetic protocol leading to azolium thioglycosides and their transformation into corresponding Ag(I)-*N*-heterocyclic carbenes via a mechanochemistry approach, developed in collaboration with the group of Dr. Frédéric Lamaty at IBMM (Montpellier). Promising results are also obtained for their potential bioactivity.

Our most prestigious prize, the *Organic Chemistry Division Prize* is awarded to an experienced chemist who has performed nationally and internationally recognized research work. It was awarded in 2021 to *Gilles Guichard* for the originality and excellence of his work. Gilles Guichard studied chemistry at the École Nationale Supérieure de Chimie in Toulouse, at the Strathclyde University (UK) and obtained his master degree from the University of Montpellier. He obtained his PhD thesis from Strasbourg University, working on peptides chemistry, at the interface between chemistry and immunology. He then joined the group of Pr. Dieter Seebach at the ETH Zürich where he studied the synthesis and the folding properties of  $\beta$ -peptides. He then obtained a permanent position as CNRS searcher at the IBMC in Strasbourg and moved to the Institut de Chimie et Biologie des Membranes et Nanoobjets (CBMN) and the Institut Européen de Chimie et Biologie (IECB) in Bordeaux where he

created the Peptidomimetic Chemistry team. His research activity focuses on the biomimetic chemistry of peptides and proteins and their applications related to biology, with notable development of bioactive molecules and molecular tools to interfere with biological processes. A strong focus of his work deals with foldamer chemistry, with the design and synthesis of artificial molecular strands with controlled folding properties. He for instance demonstrated that aliphatic oligomers with urea junctions fold to form helical secondary structures related to polypeptide helices. An essential part of this work is based on the structural characterization of objects alone or in complexes with (macro)molecules of interest. Current developments aim to exploit these systems for applications in molecular recognition: creation of self-assembled architectures, specific recognition of protein surfaces, transport of active ingredients, and catalysis. Together with Guillaume Compain, he describes in this issue the efficiency of the *in situ* generated DBU.HF salt as fluorinating agent in a hexafluoroisobutylation tandem reaction allowing the preparation of enantiopure polyfluorinated leucine, a procedure efficient also at a large scale.

We do hope you will enjoy reading this issue highlighting the beautiful organic chemistry done by DCO-SCF members and we invite you to stay tuned to follow the presentation of the prizes awarded by the DCO-SCF, once again, to very talented researchers in 2022. Coming soon!

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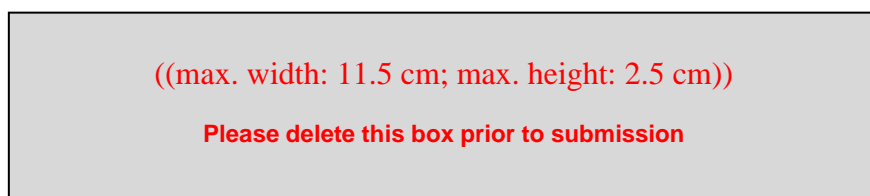
Prof. Matthieu Sollogoub (President of the DCO-SCF 2017-2021) and Dr. Emmanuelle Schulz (President of the DCO-SCF 2021-2024)



## Entry for the Table of Contents

### Key topic

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The Division de Chimie Organique (DCO) of the Société Chimique de France (SCF) and the European Journal of Organic Chemistry are coming together for the second consecutive year to celebrate the winners of the 2021 Division awards.

Institute and/or researcher Twitter usernames: ((optional))