Young Career Focus: Dr. Eduardo Anaya Plaza (Aalto University, Finland)

Background and Purpose. SYNFORM regularly meets young up-and-coming researchers who are performing exceptionally well in the arena of organic chemistry and related fields of research, in order to introduce them to the readership. This Young Career Focus presents Dr. Eduardo Anaya Plaza (Aalto University, Finland).

Biographical Sketch

Dr. E. A. Plaza

Eduardo Anaya Plaza obtained a PhD in organic chemistry in 2016 from Autonomous University of Madrid (Spain) and then moved as postdoctoral researcher to the University of Birmingham (UK). In 2018 he moved to Aalto University (Finland) with the help of the Marie Skłodowska-Curie-Actions (MSCA) grant. He established his research group, focused on photoactive organic materials, in late 2021 upon securing a total funding amount over 1.7 M€, which includes the prestigious Academy of Finland Research Fellowship. The group has published 19 articles in journals such as Nature Nanotechnology, Nature Communications, Angewandte Chemie International Edition or Advanced Materials. Additionally, the excellence of their research has been awarded with several recognitions including the Thieme Chemistry Journals Award in 2023.

INTERVIEW

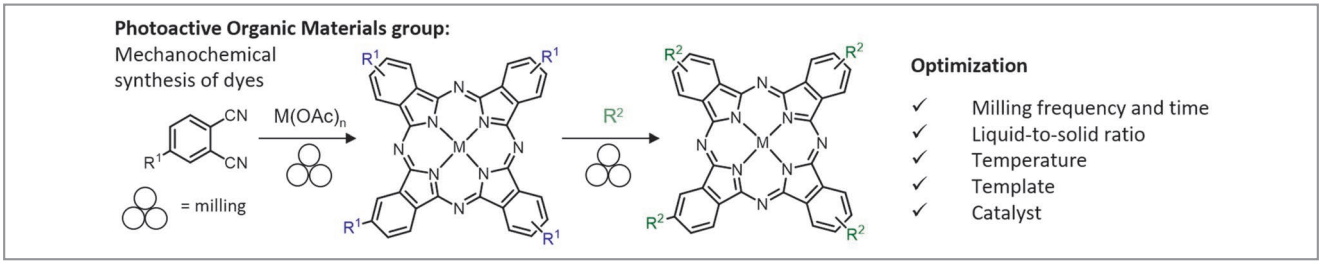
SYNFORM *What is the focus of your current research activity?*

Dr. E. A. Plaza I have always been dealing with the synthesis of dyes, as well as their properties in their aggregated/solid state, to then be exploited in a wide range of applications ranging from light-management technologies to phototherapies. This has brought me in recent years to the solid-state synthesis (e.g. mechanochemistry) of dyes (Scheme 1). Their large aromatic structures lead to poor solubilities, limiting the choice of solvents. That is easily overcome by this technique, opening the field to richer and more sustainable synthetic routes.

SYNFORM *When did you get interested in synthesis?*

Dr. E. A. Plaza During my undergrad at Autonomous University of Madrid, the research labs were on the way to class. From all of them, the one where I did my PhD had these big, colourful chromatography columns all over the place and I was immediately fascinated.

SYNFORM *What do you think about the modern role and prospects of organic synthesis?*



Scheme 1

Dr. E. A. Plaza Organic synthesis has a capital role in our modern society providing from daily life items like cosmetic dyes for our clothes to life-saving antibiotics. While research in new synthetic methodologies is very much needed, pressing societal/environmental issues must be considered, especially when dealing with the scaling-up of processes. Therefore, new approaches like photochemistry, mechanochemistry or electrochemistry have a chance to make a bigger impact.

SYNFORM *Could you tell us more about your group's areas of research and your aims?*

Dr. E. A. Plaza The Photoactive Organic Materials group at Aalto University focuses on the synthesis and application of dyes for a vast array of technologies, ranging from light-emitting devices or solar cells, to phototherapeutic agents (Figure 1). We develop novel synthetic technologies based on mechanochemistry, as well as photoactive biomaterials and in the latest period small organic molecule-based solid-state emitters.

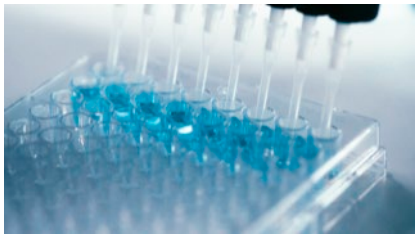


Figure 1 Application of phthalocyanines in biomedical applications, such as photodynamic therapy

SYNFORM *What is your most important scientific achievement to date and why?*

Dr. E. A. Plaza My biggest achievement up to date has been to create my research group in 2021. It has given me the independence to pursue my own research lines and interests, while educating the next generation of researchers.

SYNFORM *If you had not become a chemist, what other profession do you think you would have entered?*

Dr. E. A. Plaza I have been also very much attracted to cooking, which is basically the same with different starting materials.

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