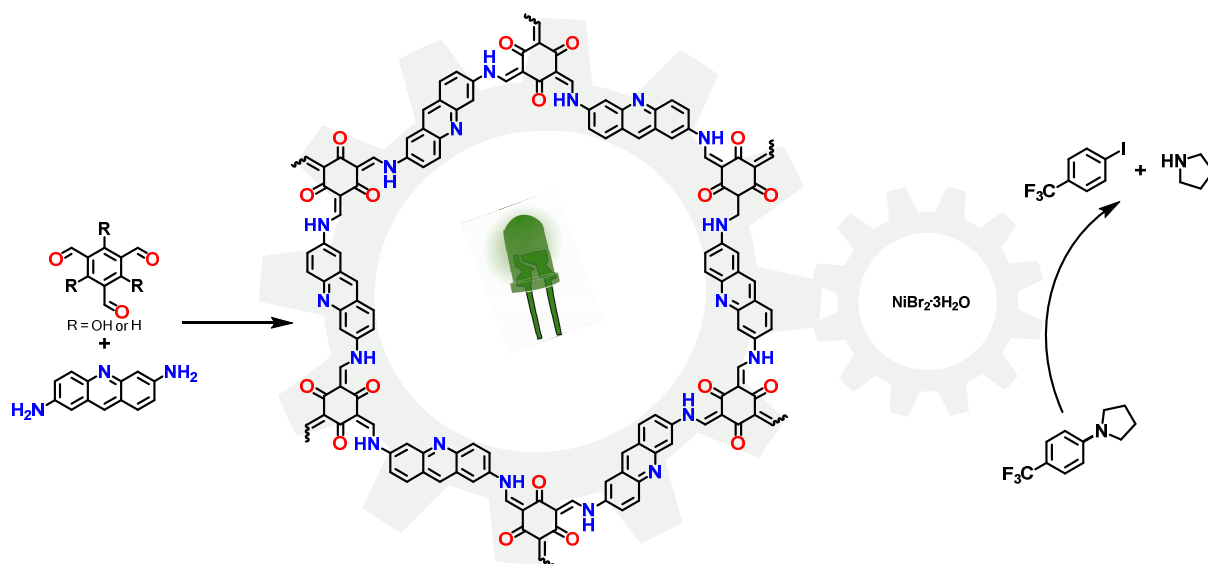


# The quest to fill the void: Exploring acridine based covalent organic frameworks for C-N cross coupling reactions

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The field of Covalent Organic Frameworks (COFs) – crystalline and porous polymers that are solely consisting of organic building blocks reticulated via covalent bonds – have gained increasing attention in the last decade.<sup>[1]</sup> COFs have since emerged as a powerful tool towards a plethora of different applications including gas storage & separation, energy storage and catalysis.<sup>[2]</sup> Keys to the success are the porosity, structural tunability and the possibility to integrate functional linkers in the COF backbone. However, the usage of COFs as heterogeneous photosensitizer have mostly been studied in the activation of H<sub>2</sub>O and CO<sub>2</sub> while only few examples of COFs have been used to catalyze organic transformations.<sup>[3,4]</sup> Herein, we demonstrate the synthesis of a library of 2,6-diaminoacridine based conjugated covalent organic frameworks. This class of acridine COFs is then used as fully organic, heterogeneous photocatalysts in Ni(II)-mediated metallaphotocatalytic C-N cross coupling. Through its broad absorption in the visible light range, acridine COFs can also harvest lower energetic green light to drive the reaction. This prevents the formation of catalytically inactive Ni(0) particles, a limitation in metallaphotocatalytic C-N cross coupling reactions.<sup>[5]</sup>

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