# PYRENE SUBSTITUTED CYCLAM COMPLEXES AND THEIR APPLICATION AS $CO_2RR$ CATALYSTS

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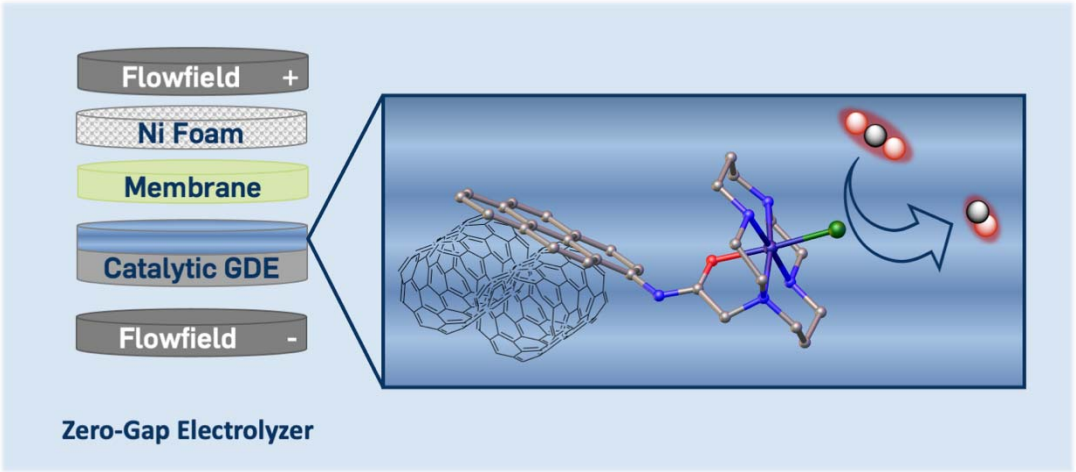
The ever-rising atmospheric $CO_2$ concentration brings the conversion of this greenhouse gas into reusable carbon-based products, such as CO or methanol, into focus. This conversion is often achieved by the use of transition metal complexes in the electrocatalytic $CO_2$ reduction reaction ($CO_2RR$). Here, the well-known $[Ni(cyclam)]^{2+}$ complex offers high selectivities towards defined $CO_2$ reduction products and a broad variety of spectroscopic possibilities for mechanistic investigations.[1,2] Introducing a pyrene moiety within the ligand scaffold enables the immobilization of this catalyst class onto carbon nanotubes (CNTs) *via* π-π stacking, which was recently shown to be a highly efficient catalytic material.[3] To direct fundamental research into a more application orientated way, herein this promising catalytic material will be applied in zero-gap electrolysers. Therefore, this molecular catalyst will be incorporated into gas diffusion electrodes to combine the high mass activity of homogenous catalysts with the good stability at high current densities of heterogenous systems.

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