

Catalytic reduction of CO₂ using functional conducting polymers

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Organic electrocatalysts are regarded as attractive alternative to replace state-of-the-art noble metals. Here we demonstrate the utilization of conducting polydopamine as metal-free electrocatalyst [1,2]. The doped polymer systems offers new features in the electroreduction of CO₂, particular by steering the selectivity over the electroactive functional sites. In addition, the composite character of the polymers allowed us to implement new strategies in electrocatalysis towards high-value carbon products beyond CO and formate. We present our recent efforts to obtain functional-selective CO₂ catalysts based on the family of polydopamines.

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[2] H. Coskun, A. Aljabour, P. De Luna, D. Farka, T. Greunz, D. Stifter, M. Kus, X. Zheng, M. Liu, A. W. Hassel, W. Schöfberger, E. H. Sargent, N. S. Sariciftci, P. Stadler, *Sci. Adv.* **2017**, *3*, e1700686.