Electrostatic catalysis by solvent ordering

External electric fields have recently been shown to catalyse chemical reactions (Aragonès et al. *Nature* 2016, **531**, 88–91), but scaling these effects in practical experimental systems has been elusive to date. Now researchers from the Australian National University and Monash University have shown that ordered solvent environments can provide a way forward (Xu L., Izgorodina E.I., Coote M.L. *J. Am. Chem. Soc.* 2020, **142**, 12 826–33). The work takes advantage of the ability of solvents and ionic liquids to become ordered under external electric fields and, in the case of ionic liquids, to maintain that order for some time after the field is removed. This ordered solvent environment generates its own internal electric field that can be exploited for catalysis. Using multi-scale modelling, the team showed that these ordered solvent environments can catalyse chemical reactions even after the external field is switched off. In particular, the barriers for hydrogen transfer were shown to decrease by more than 20 kcal/mol in ordered [EMIM][BF_4], an ionic liquid, compared with normal conditions. This work suggests a possible strategy for scaling electrostatic catalysis by applying a pulsed external field to the reaction medium to maintain solvent ordering, while allowing the reaction to proceed largely in the absence of an external field.