Supplementary Information

Selective, light-driven enzymatic dehalogenations of organic compounds

Bhavin Siritanaratkul[†], Shams T. A. Islam[†], Torsten Schubert[‡], Cindy Kunze[‡], Tobias Goris[‡], Gabriele Diekert[‡] and Fraser A. Armstrong*[,†]

[†] Inorganic Chemistry Laboratory, Department of Chemistry, University of Oxford, South Parks Road, Oxford OX1 3QR, Oxfordshire, United Kingdom

[‡] Institut für Mikrobiologie, Friedrich-Schiller-Universität Jena, Lehrstuhl für Angewandte und Ökologische Mikrobiologie, Philosophenweg 12, 07743 Jena, Germany

UV irradiation of TiO_2-PceA with *c*DCE

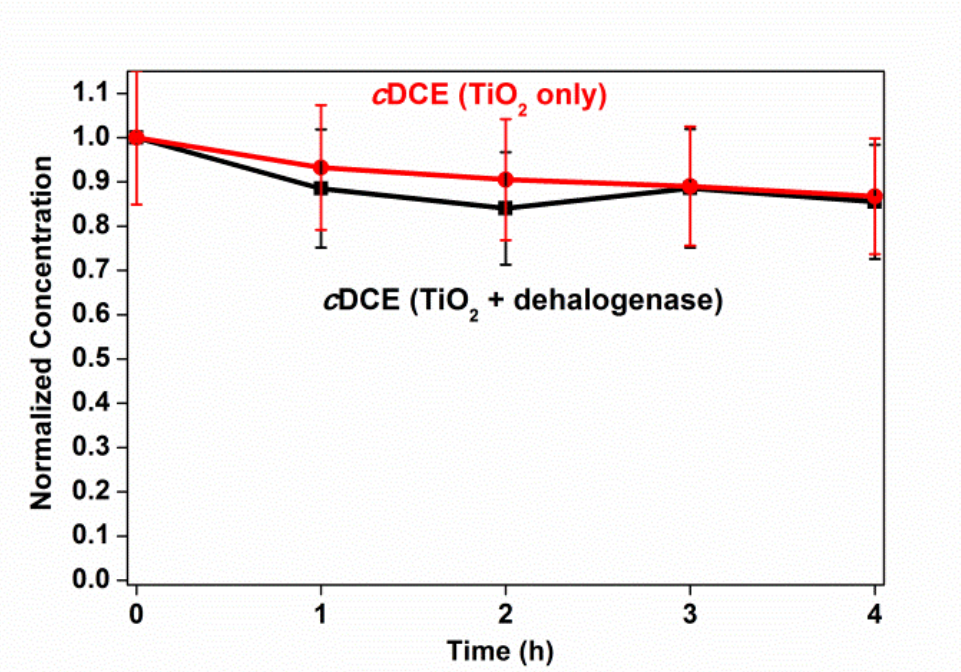

Figure S1. Time course of the *c*DCE concentration for reaction solutions containing both TiO_2 nanoparticles and PceA (black line) or TiO_2 only (red line), irradiated with UV light.

PceA on a PGE electrode after injection of *c*DCE

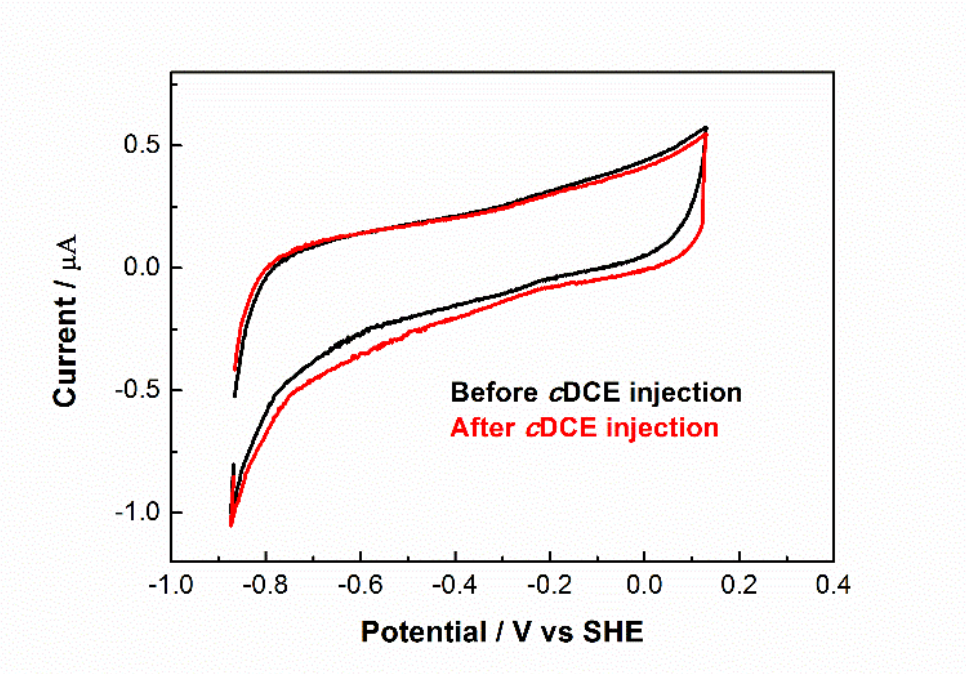

Figure S2. Cyclic voltammograms of PceA on a PGE electrode, before (black) and after (red) injection of *c*DCE 0.8 mM. Reaction conditions: Tris buffer, pH 7.0, 25 °C, scan rate 20 mV/s, electrode is stationary.

Visible light-dye-modified TiO_2

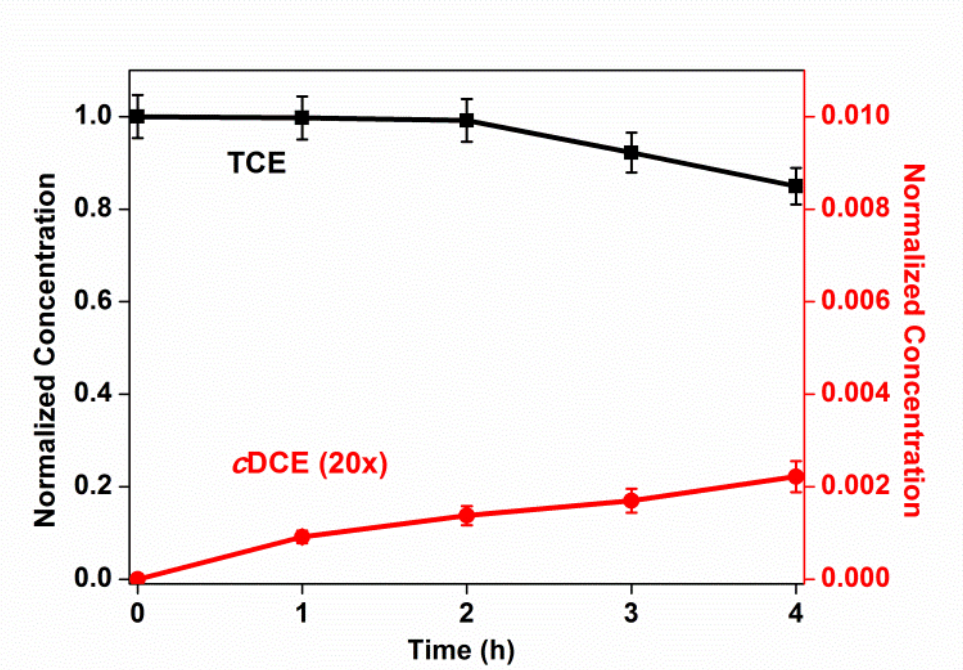

Figure S3. Time course of concentrations of TCE (black line, left axis) and *c*DCE (red line, magnified 20 times, right axis) for a Ru dye-TiO_2-PceA system under visible light irradiation ($\lambda >$ 420 nm). The Ru system has been described previously.[1, 2]

References

1. E. Reisner, D. J. Powell, C. Cavazza, J. C. Fontecilla-Camps and F. A. Armstrong, *Journal of the American Chemical Society*, 2009, **131**, 18457-18466.
2. T. W. Woolerton, S. Sheard, E. Reisner, E. Pierce, S. W. Ragsdale and F. A. Armstrong, *Journal of the American Chemical Society*, 2010, **132**, 2132-2133.