Electronic Supplementary Material (ESI) for Catalysis Science & Technology.

Non-Steady State Validation of Kinetic Models for Ethylene Epoxidation over Silver Catalysts

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Supplementary Information

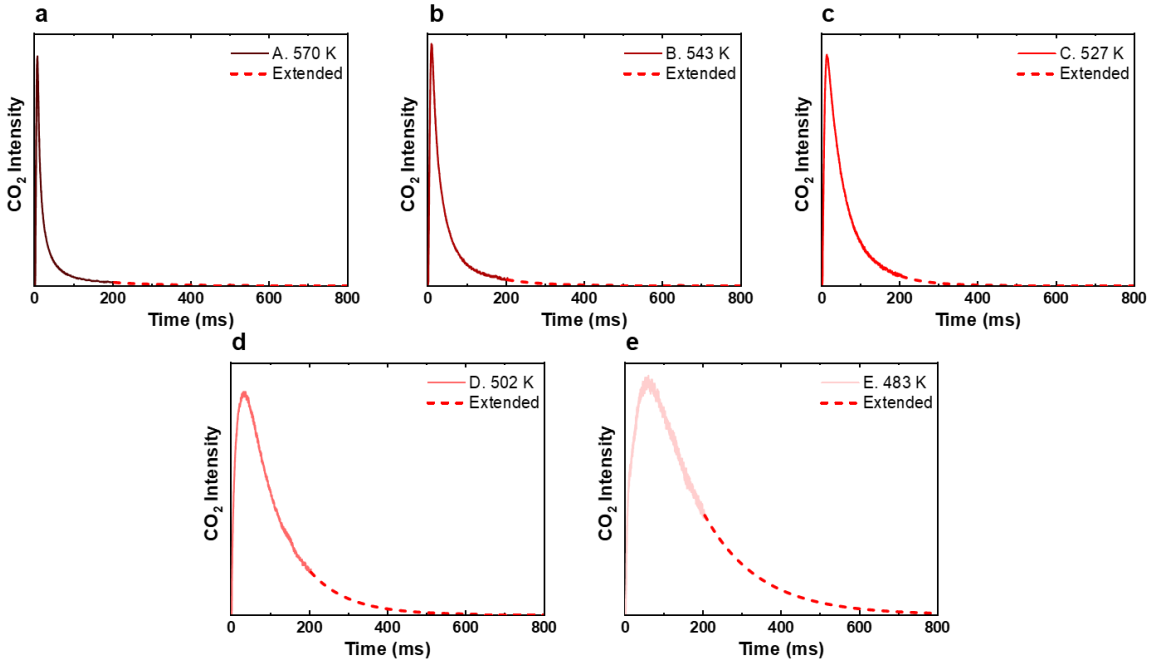

Figure S1. Extrapolated CO_2 response curves from the Gleaves-Madix experiment[1] where the tail of the curve is expanded to 1000 ms using a single exponential function fit to tail of the curve from 120 – 200 ms.[2] Experimental data was adapted from ref.[1]

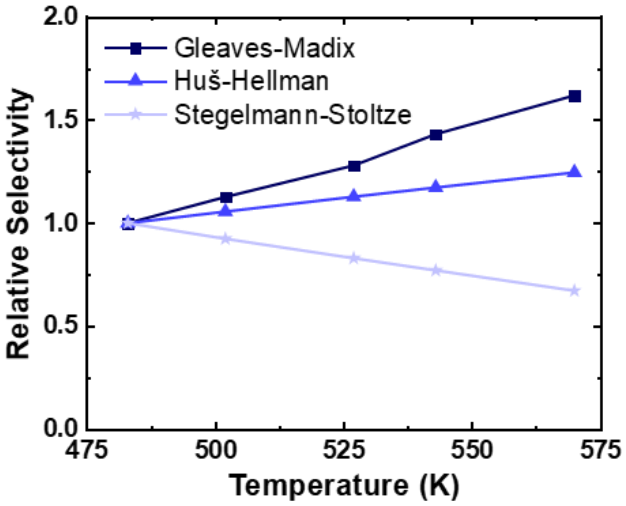

Figure S2. Experimental and simulated relative selectivity (normalised to 483 K) for the single-pulse experiments in where ethylene and O_2 were pulsed over the clean catalyst at varying temperatures from 483 – 570 K. Experimental data was adapted from ref.[1]

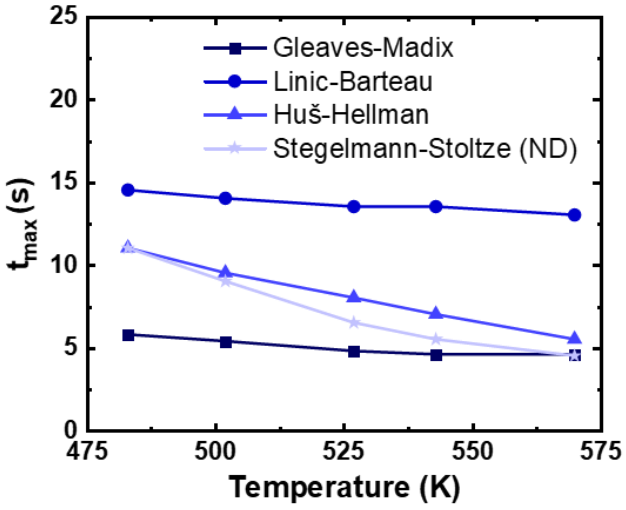

Figure S3. Experimental and simulated time of maximum ethylene oxide production (t_{max}) as a function of temperature for the simulations with the Stegelmann-Stoltze model modified to turn off oxygen desorption (ND). Experimental data was adapted from ref.[1]

References

1 J. T. Gleaves, A. G. Sault, R. J. Madix and J. R. Ebner, *Journal of Catalysis*, 1990, **121**, 202–218.

2 K. Morgan, A. Goguet, C. Hardacre, E. V. Kondratenko, C. McManus and S. O. Shekhtman, *Catalysis Science and Technology*, 2014, **4**, 3665–3671.