Electronic Supplementary Material (ESI) for Materials Advances.

Supplementary Information for **Rotating Ellipsoidal Catalytic Micro-Swimmers via Glancing Angle Evaporation**

Geometric examination of the role of glancing angle, θ.

In the main manuscript we presented analysis of two evaporation angles, θ=60° and θ=90°, corresponding to our experimental conditions. For completeness, here we include a geometric analysis of additional glancing angles via ray tracing.

Figure S1 shows the expected long axis variations in surface reactivity as a function of glancing angle, and Figure S2 shows the corresponding expected Pt coating shapes.

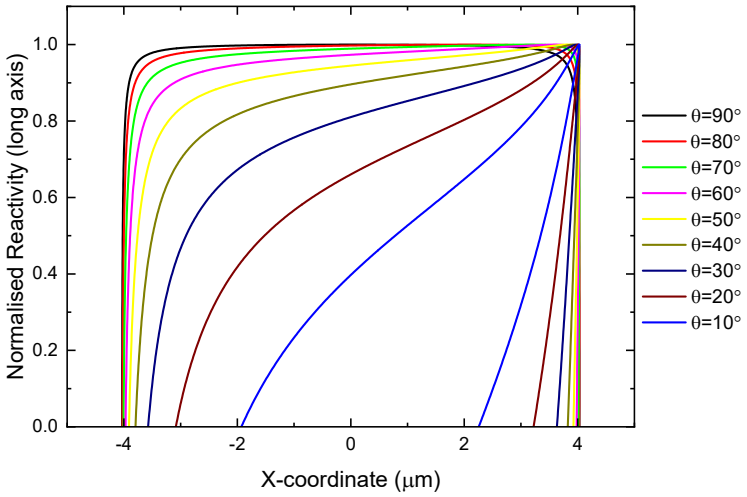

Figure S1: Predicted variations in reactivity as a function of glancing angle along the long ellipsoid axis. Note that where two values of reactivity are reported for a given value of x, this indicates that the ellipsoid is coated on both sides, above and below the long axis. This can be visualised in S2.

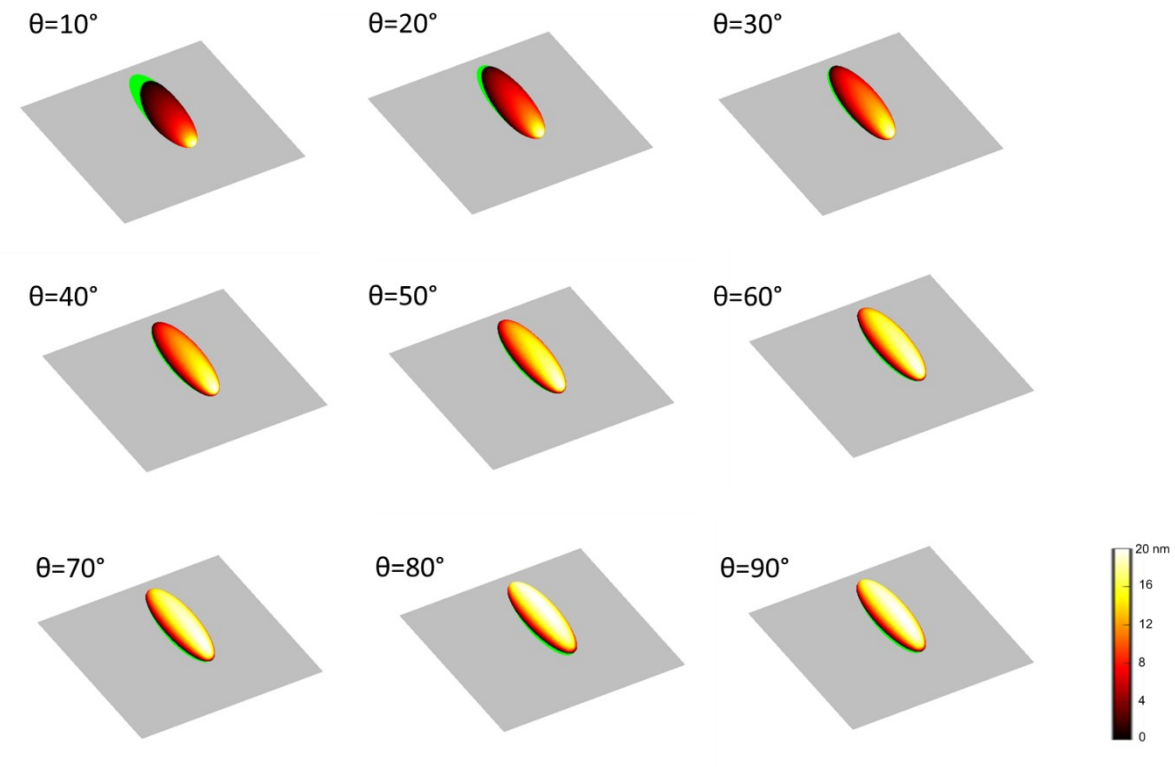

Figure S2: Ray tracing analysis of expected cap shape as a function of glancing angle, theta (alignment angle alpha = 0° throughout)

It is interesting to note that at lower glancing angles than those experimentally studied here, more Pt is deposited under the nose of the ellipsoid facing the source, and so the overall asymmetry of the ellipsoid changes to resemble a Janus colloid that would be expected to translate along the major axis.