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Supporting Information

Transient high-energy surface powered by a chemical fuel

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Figure S1. Relaxation curves of SDS solutions with [SDS] = 6 mM, [amylase] = 30 U/ml, and $[\beta\text{-CD}] = 12 \text{ mM}$.



solution ([TX] = 0.2 mM) with increasing CD.



Time (s) Figure S3. Integration of Eq. 9 is performed analytically or numerically. When the finite Δt is as small as 1 second, the resultant curve is indistinguishable for the analytical one.



Figure S4. Effect of k_m and k_{cat} parameters on the surface energy profile. Enzymatic performance is frequently sensitive to temperature and pH, so is amylase's catalytic parameters. It was reported that bacterial amylase performs best at ~ 60 C and pH ~ 7.5 [Ref: Pharmacologyonline 3: 125-134 (2011)]. We demonstrate here the profound impact of these parameters by simulation.