Title:	Tilting a ground-state reactivity landscape by vibrational strong coupling
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Abstract:	Many chemical methods have been developed to favor a particular product in transformations of compounds that have two or more reactive sites. We explored a different approach to site selectivity using vibrational strong coupling (VSC) between a reactant and the vacuum field of a microfluidic optical cavity. Specifically, we studied the reactivity of a compound bearing two possible silyl bond cleavage sites—Si–C and Si–O, respectively—as a function of VSC of three distinct vibrational modes in the dark. The results show that VSC can indeed tilt the reactivity landscape to favor one product over the other. Thermodynamic parameters reveal the presence of a large activation barrier and substantial changes to the activation entropy, confirming the modified chemical landscape under strong coupling.
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