Table a:

θ [a] / degrees	N_1	M_1	f_{trap}
25	93 %	71%	22 %
45	91 %	67 %	24 %
65	88 %	66 %	17 %

Table b:

E_i [b] / kJ mol^{-1}	N_1	M_1	f_{trap}
10	94 %	35 %	56 %
29	91 %	67 %	24 %
50	89 %	71 %	18 %

Table c:

T / K	N_1	M_1	f_{trap}
290	91 %	67 %	24 %
350	91 %	67 %	20 %

Table d:

ρ	N_1	M_1	f_{trap}
0.006	93 %	65 %	25 %
0.009	93 %	67 %	23 %
0.012	91 %	67 %	24 %
0.015	94 %	68 %	23 %

Table e:

k [*]	N_1	M_1	f_{trap}
0.6	92 %	68 %	23 %
0.7	91 %	66 %	25 %
0.75	91 %	67 %	24 %
0.8	91 %	63 %	25 %
0.85	93 %	68 %	24 %

Table f:

γ [‡]	N_1	M_1	f_{trap}
5	96 %	71 %	23 %
2	94 %	71 %	21 %
1	91 %	67 %	24 %
0.5	92 %	66 %	25 %
0.2			

Table g:

ε [†]	N_1	M_1	f_{trap}
1	91 %	67 %	24 %
3	93 %	34 %	58 %
5	95 %	14 %	80 %

Table h:

Energy loss	N_1	M_1	f_{trap}
Elastic	88 %	86 %	0 %
Inelastic	91 %	67 %	24 %

Table i:

Surface	N_1	M_1	f_{trap}
Squalane	91 %	67 %	24 %
PFPE	89 %	62 %	27 %

Supporting Table: Dynamical statistics for various values of the calculation parameters, as calculated from samples of 500 trajectories. N_1 is the fraction of trajectories undergoing only one collision with the surface, M_1 is the fraction which undergo only one turning point, and f_{trap} is the fraction that become trapped at the surface. [*] k is in units of the squalane molecular diameter (10.2 Å; reference 12), [†] ε in units of the squalane well depth (3.86 kJ mol^{-1}; reference 17) and [‡] γ in units of the squalane surface tension (26 mN m^{-1}; reference 29). [a] ρ calculated by scaling 45° value; $\rho = 0.012\left(\sin\theta/\sin 45°\right)$. [b] ρ calculated by scaling 29 kJ mol^{-1} value; $\rho = 0.012\left(E_i/29 \text{ kJ mol}^{-1}\right)^{1/2}$