

SUPPORTING INFORMATION

CFD Computational Specifications: All parameters used in the geometry design are summarized in Table S.1. The total number of elements in mesh design are 924653 with an averaged orthogonal quality of 0.9. This investigation is supported by the use of k-Epsilon turbulent model. The rotary domain has a rotating speed of 750 rpm.

In addition, the shear stress distribution along the cold finger with different simulation time was provided (Figure S.1), indicating that a steady state was reached at the end of the simulation. Thus, the shear stress after 10 s simulation was used in the later comparison.

Table S.1: Parameters used in the geometry design

Inner diameter of the tank [cm]	7.60
Height of the tank [cm]	14
Outer diameter of the cold finger probe [cm]	1.71
Length of the cold finger probe [cm]	8
Outer diameter of the stirrer [cm]	0.75
Length of the stirrer [cm]	3.78
Diameter of the interface between stirrer and tank [cm]	5
Height of the stirrer domain [cm]	0.95

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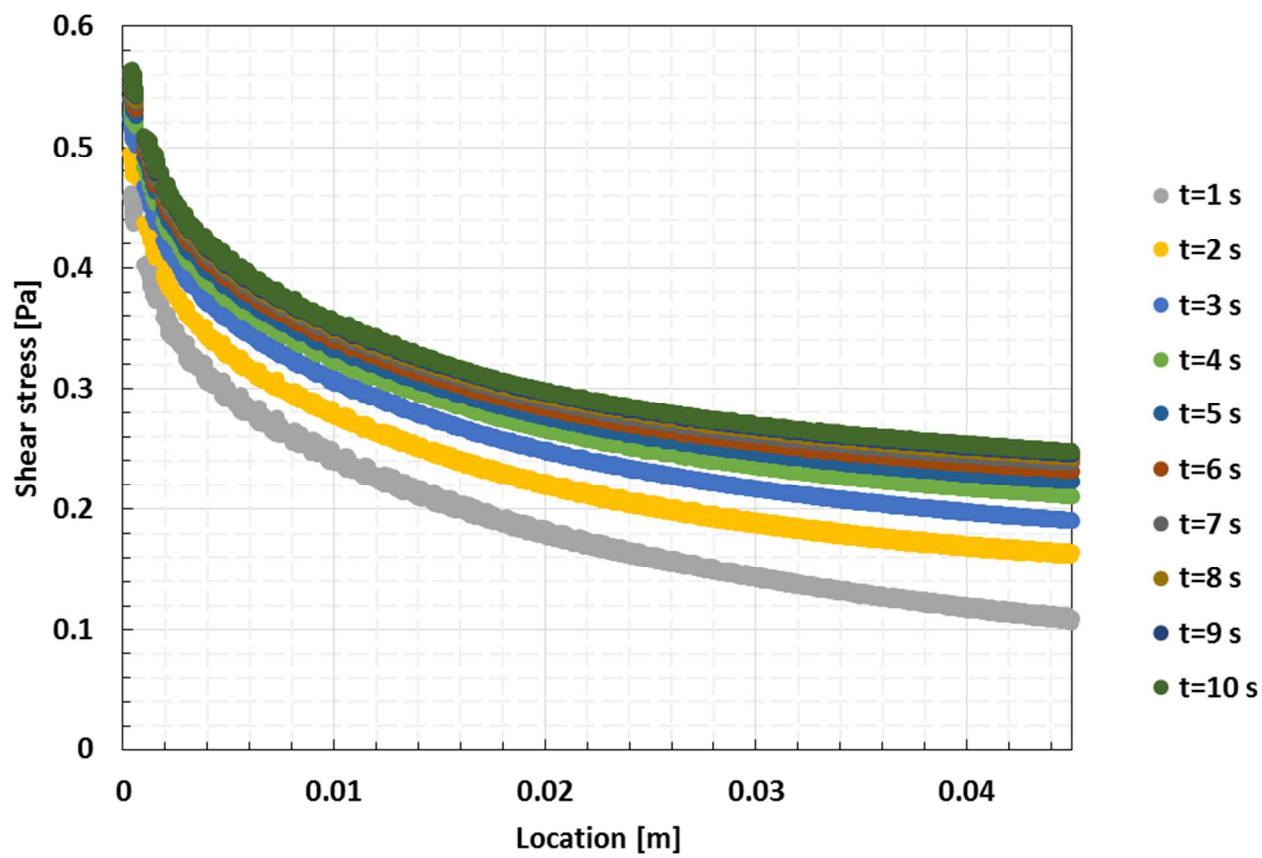


Figure S.1. The shear stress distribution along the cold finger probe with different simulation time

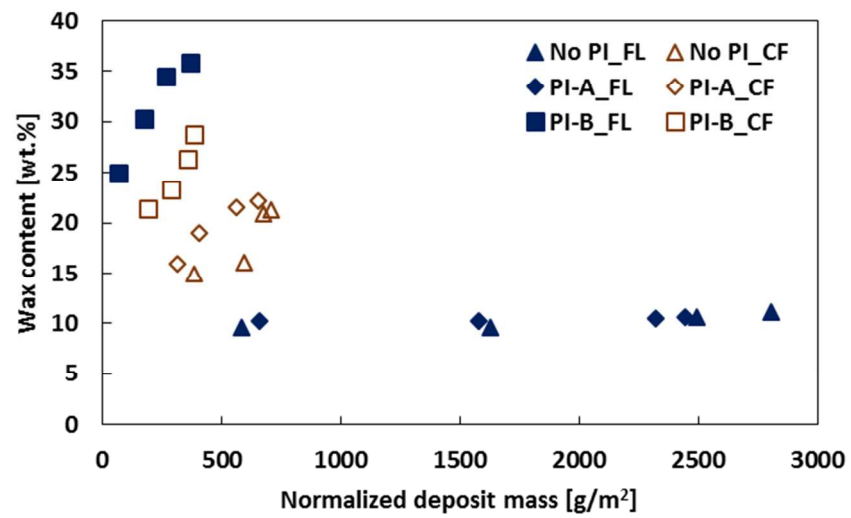


Figure S.2. Wax content versus normalized deposit mass for cold finger and flow loop with No PI, PI-A and PI-B

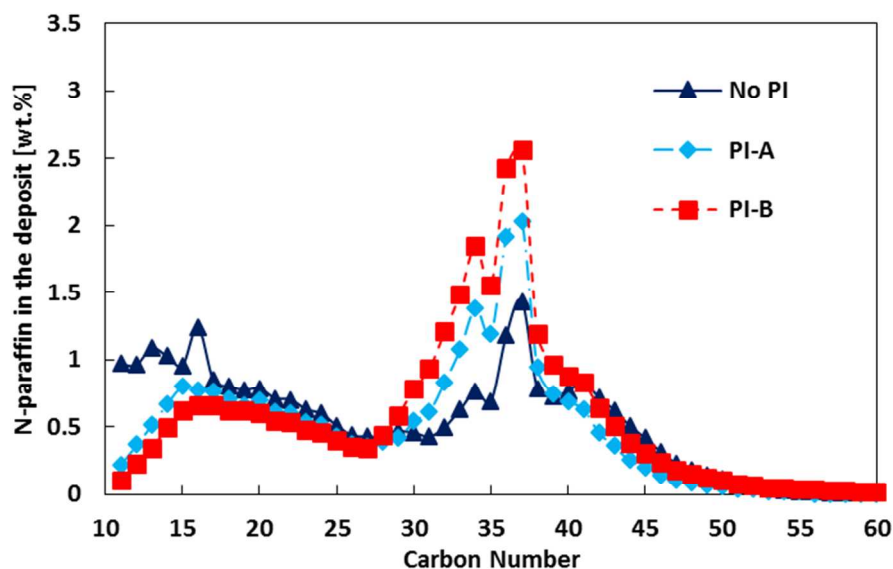


Figure S.3. Carbon number distribution of all cold finger samples in the presence of No PI, PI-A, PI-B, and PI-C for 2-h experiments

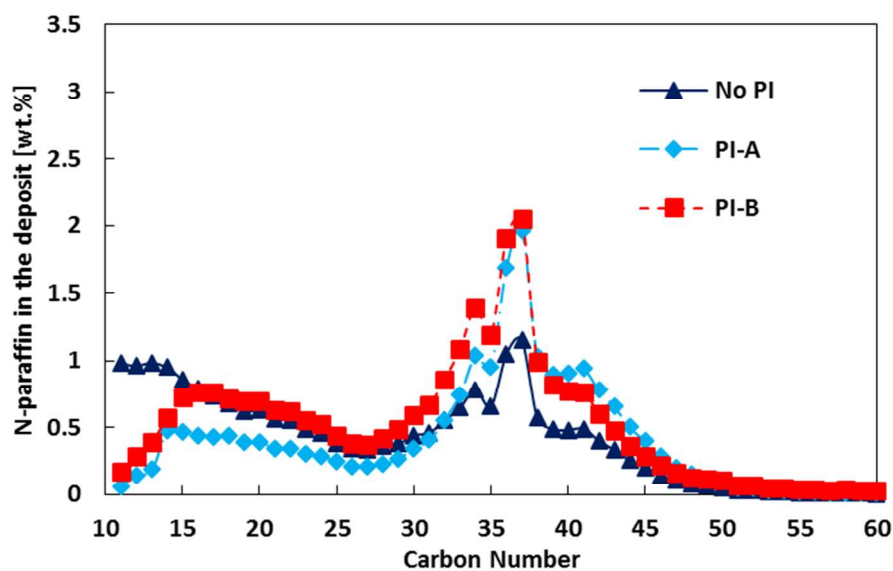


Figure S.4. Carbon number distribution of all cold finger samples in the presence of No PI, PI-A, PI-B, and PI-C for 8-h experiments

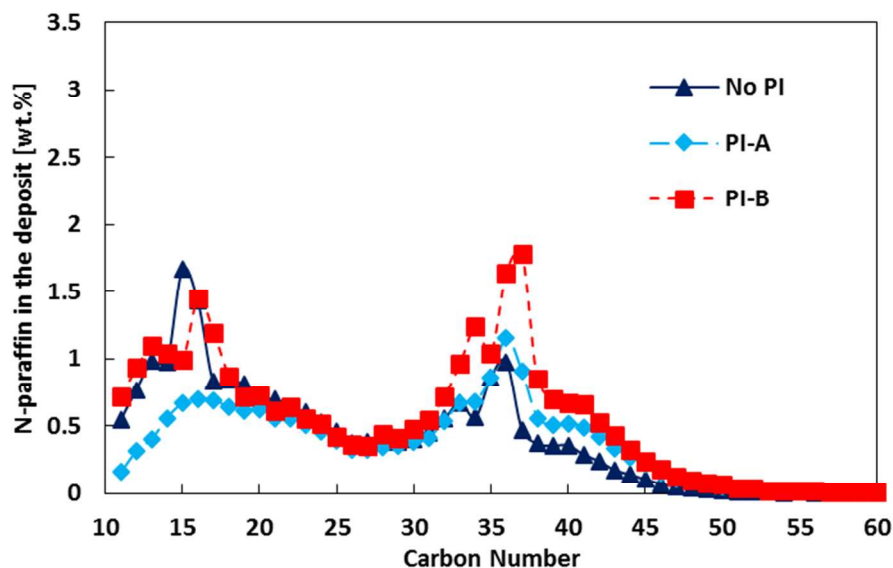


Figure S.5. Carbon number distribution of all cold finger samples in the presence of No PI, PI-A, PI-B, and PI-C for 20-h experiments

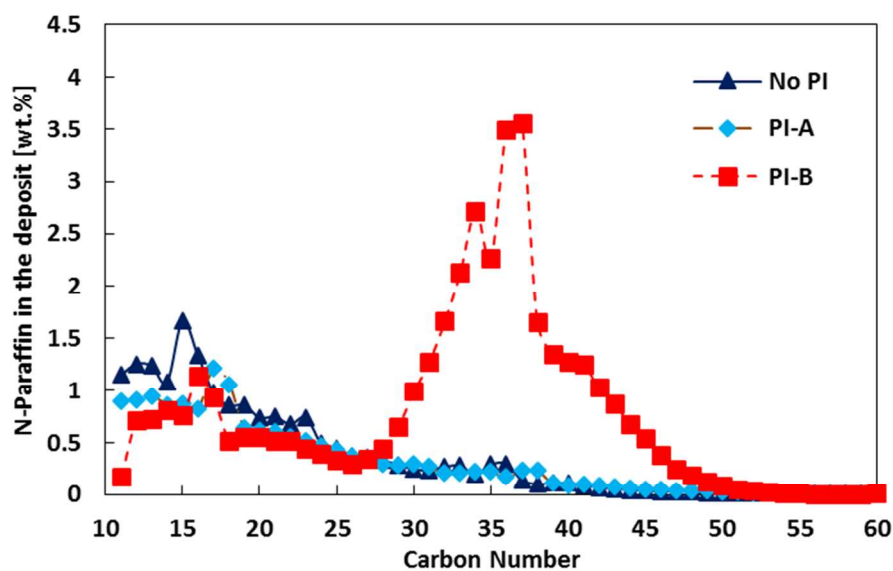


Figure S.6. Carbon number distribution of all flow loop samples in the presence of No PI, PI-A, PI-B, and PI-C for 2-h experiments

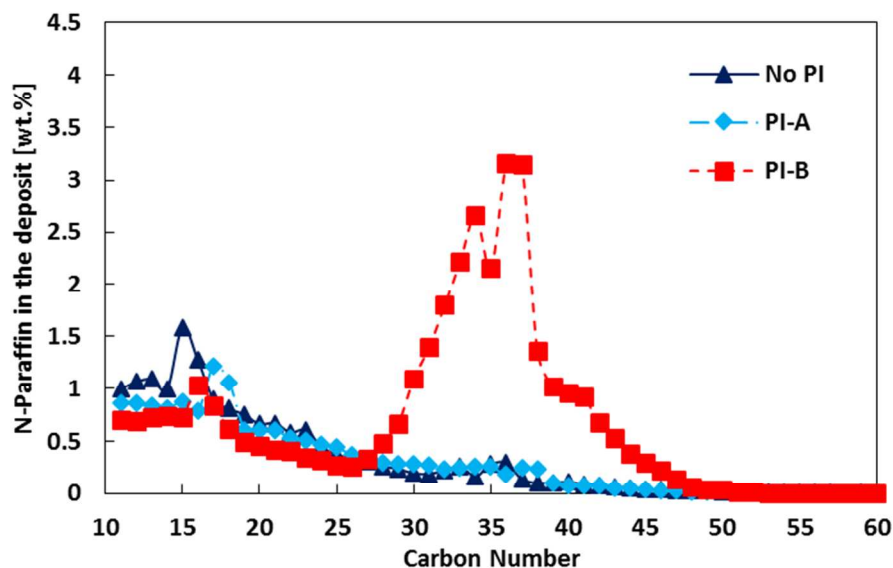


Figure S.7. Carbon number distribution of all flow loop samples in the presence of No PI, PI-A, PI-B, and PI-C for 8-h experiments

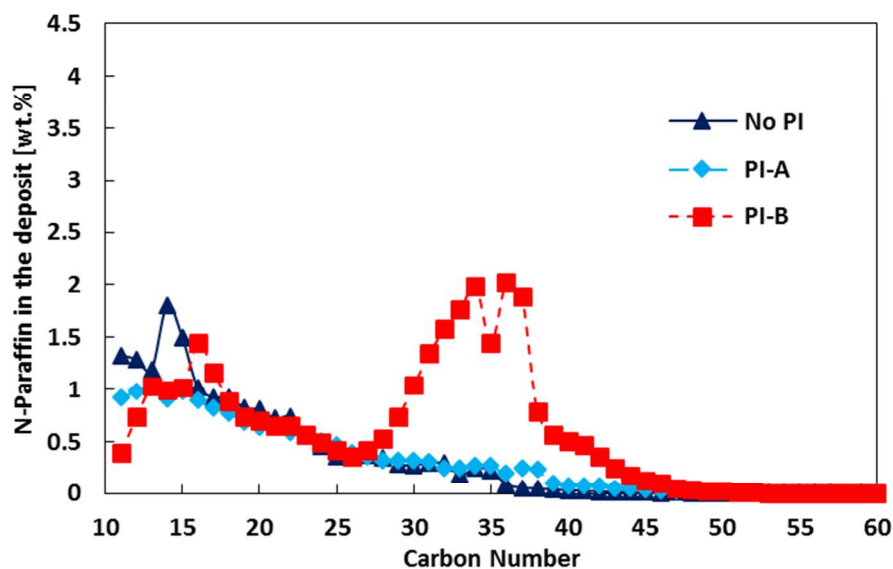


Figure S.8. Carbon number distribution of all flow loop samples in the presence of No PI, PI-A, PI-B, and PI-C for 20-h experiments