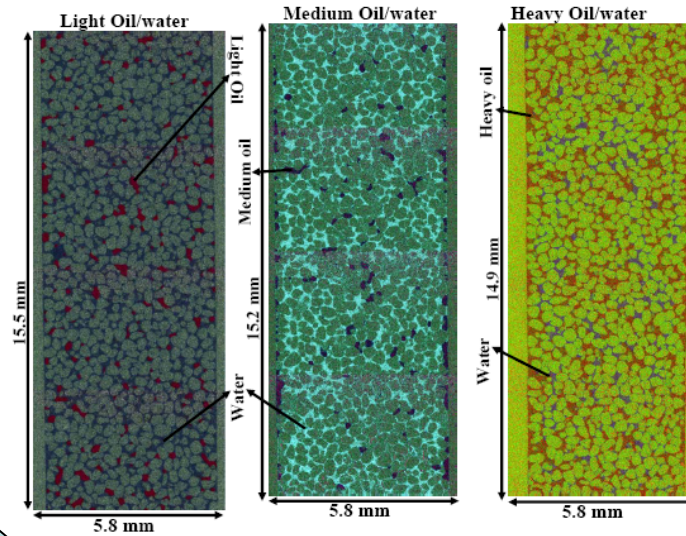


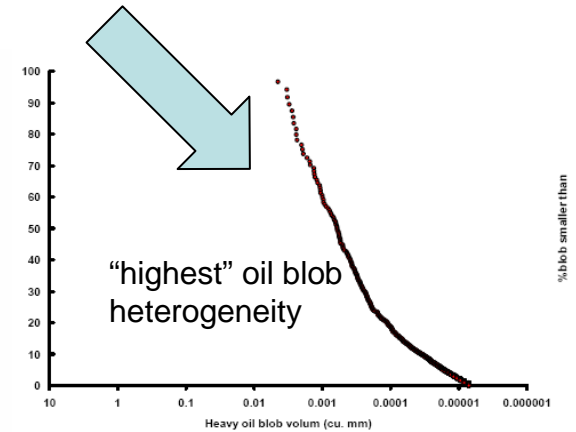
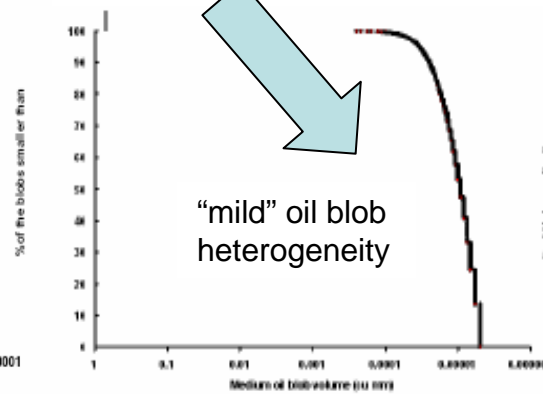
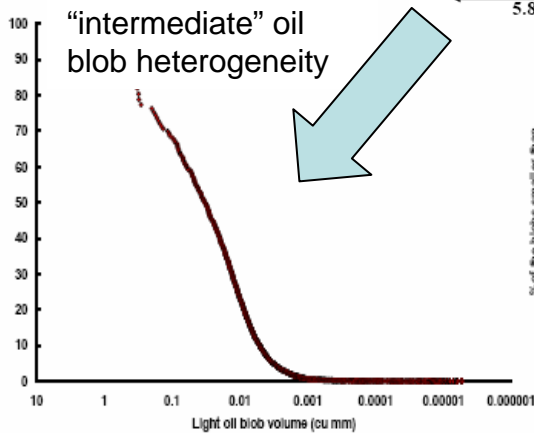
High Resolution Characterization of Crude Oil Distribution at the Pore Scale: Effects on Enhanced Petroleum Recovery

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Quantifying Crude Oil Fraction Distribution In Homogeneous Porous Media



Parameters	Light Oil (41.4°API)	Medium Oil (29.6°API)	Heavy Oil (14.4°API)
No. of blobs	2120	42697	1350
Median (d_{50}) diameter (mm)	0.399	0.025	0.095
Blob C_u (d_{60}/d_{10})	2.29	1.29	3.04
Mean volume (cu mm)	9.12E-3	8.88E-6	9.92E-5
Standard Deviation (cu mm)	4.84E-2	6.23E-6	3.18E-5
Coefficient of variation	5.30	0.71	3.20



Preliminary results show that light and heavy crude oil fractions distributed within a homogeneous porous medium exhibit higher degrees of blob heterogeneity in comparison to medium fraction crude oils. In addition, the medium fraction crude oil blobs are significantly smaller and tend to exist as single spherical blobs in comparison to the heavy and light crude oil fraction distributions. It is expected that these differences will control the recovery efficiency of the different oil fractions. Ongoing analyses are being conducted to evaluate these effects on oil recovery.