

# Active Emulsion

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Stabilized emulsions containing the oscillating Belousov - Zhabotinsky chemical reaction (BZ) show interesting dynamics. Each drop acts as an independent chemical clock. However, they chemically communicate and exhibit collective behavior. In (a) three photos of the same hexagonally packed 100 micron diameter BZ drops are shown 80 seconds apart. White corresponds to the oxidized state; black to reduced. The pattern is explained in (b); first all green drops are in the oxidized state, then all blue drops and finally all red drops. In (c) the measured intensity as a function of time is shown for the three labeled drops. Study of these systems will elucidate a variety of chemically dynamic systems, ranging from neurons to Active Matter – polymeric systems which can convert chemical energy to mechanical motion.

