**A sustained nonequilibrium chemical oscillator**

In a recent publication (Zhabotinsky and coworkers, *Collection of abstracts on radiation medicine*, 1959) the Belusov Lab describes for the first time an *oscillating reaction*, where the color of the reaction mixture oscillates repeatedly between a colored solution and a colorless solution. This color change is caused by the cerium(IV) ions being reduced by malonic acid to cerium(III) ions, which are then oxidized back to cerium(IV) ions by bromate(V) ions. This beautiful reaction establishes that nonequilibrium phenomena can persist for long times and play dominant roles in chemical reactivity.

*Important note*: Special characters are needed in order to display subscript formatting properly on the website (e.g. for chemical formulas). Please do not use subscript formatting in this document, and instead use the special Unicode characters provided by copy-pasting from the palette.

The special character palette: ₀₁₂₃₄₅₆₇₈₉

More information at https://link.springer.com/article/10.1007/s12038-009-0042-2



Photograph of the reaction taking place in a petri dish.