Title: **Recursively programmed polymerisation of amines and aldehydes in different environments**

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The formation of imines is a condensation reaction between aldehydes and amines and it produces the elimination of water, needed to displace the equilibrium, which is acid-catalysed and reversible. This reaction happens easily, resulting in polymers through polymerization when the conditions are controlled. The main aim of this project is to analyse this reaction, in which the reagents are not biological compounds, and notice the differences between environments. In order to do so, the recursive and non-recursive reactions and their progress over the cycles were studied. This is performed to test the hypothesis that disrupting the equilibrium via recursive cycling triggers a selection pressure and subsequent boundary conditions on products, which may otherwise be prone to uncontrolled combinatorial explosion. At the end of each recursive reaction, products are diluted 9:1 in fresh starting solution in order to maintain the reaction out of equilibrium. The analysis of these results is performed through HPLC-MS and by observing the trend using the mass index.