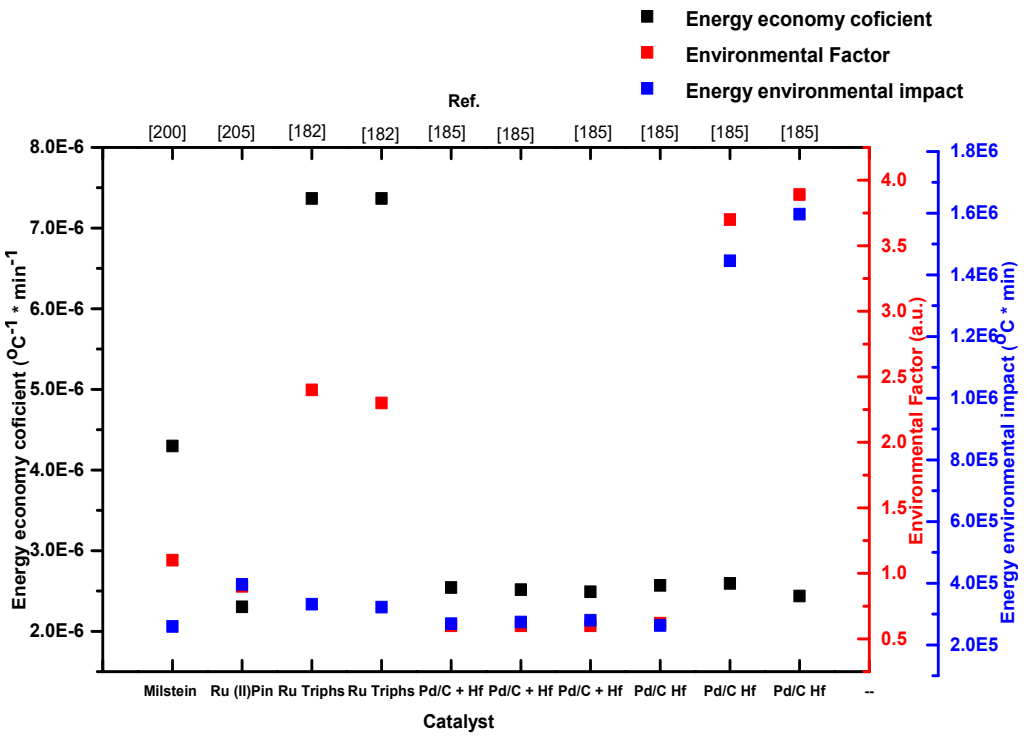

Fig.S$_1$ shows the energy economy factor (ε), environmental energy impact (ξ), and environmental factor (E) values for hydrogenolysis of polyester (PET/PBT) with homogeneous catalysts. Data is sourced from Table 2.

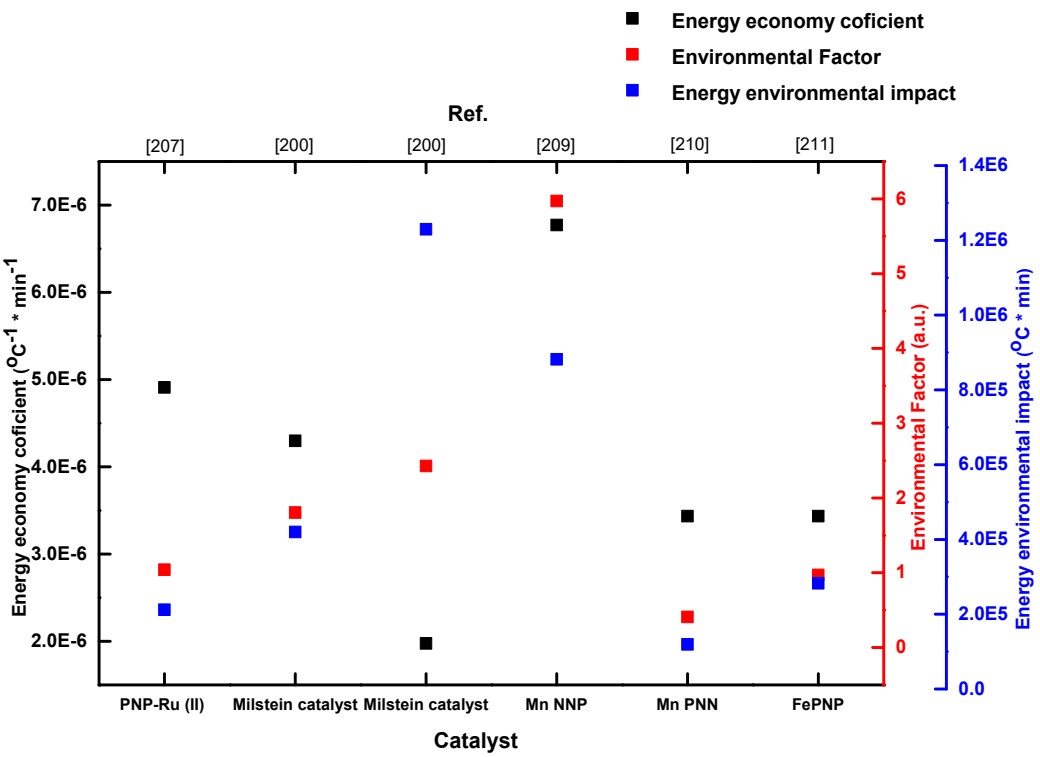

Fig.S$_2$ shows the energy economy factor (ε), environmental energy impact (ξ), and environmental factor (E) values for hydrogenolysis of aliphatic polycarbonates (PPC) using homogeneous catalysts. Data is sourced from Table 3.

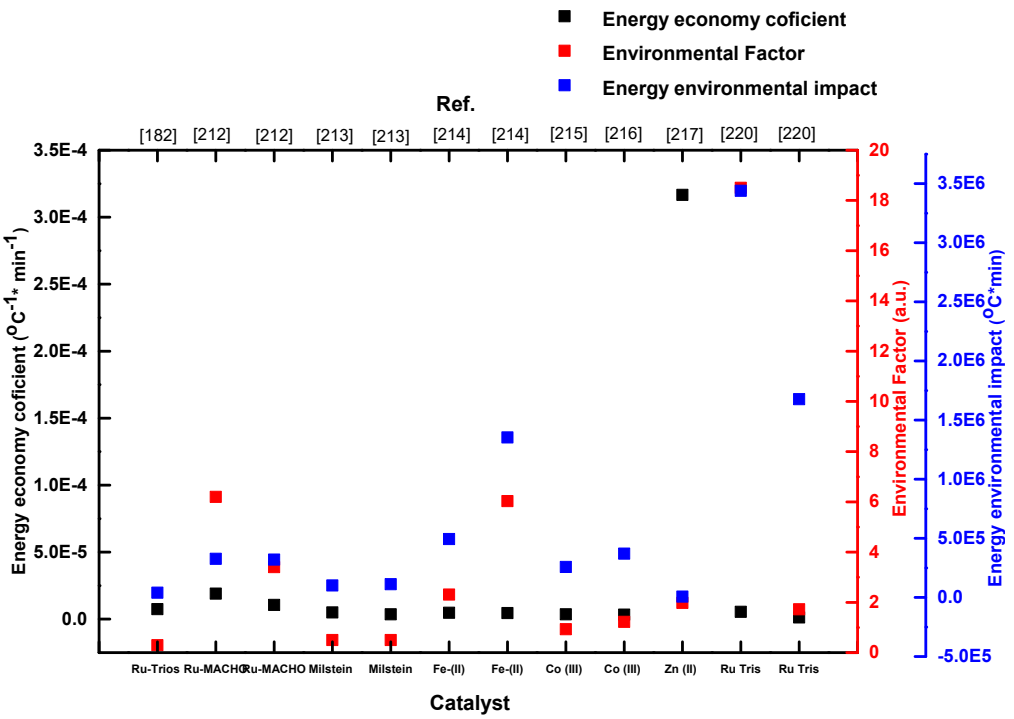

Fig.S$_3$ shows the energy economy factor (ε), environmental energy impact (ξ), and environmental factor (E) values for hydrogenolysis of aromatic polycarbonates (BPA-PC) using homogeneous catalysts. Data is sourced from Table 3.

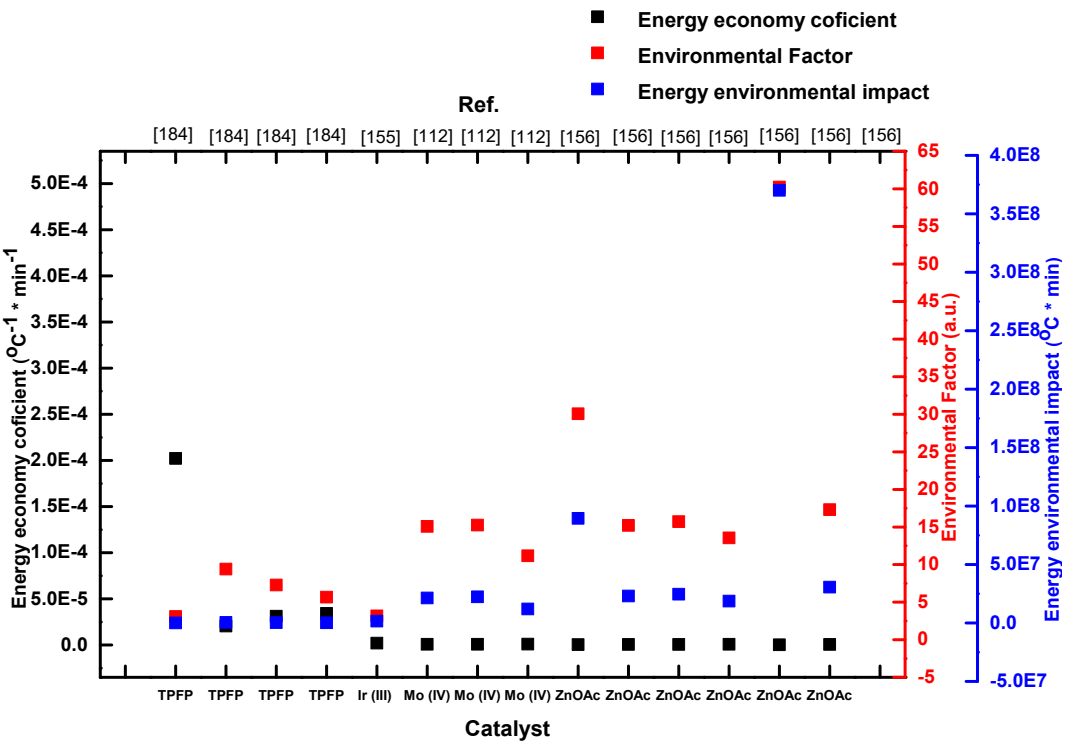

Fig.S4 shows the energy economy factor (ε), environmental energy impact (ξ), and environmental factor (E) values for In-situ Hydrogenolysis of polyesters (PET/PBT) with homogeneous catalysts using Hydrosilylation as a reducing agent. Data is extracted from Table 4.

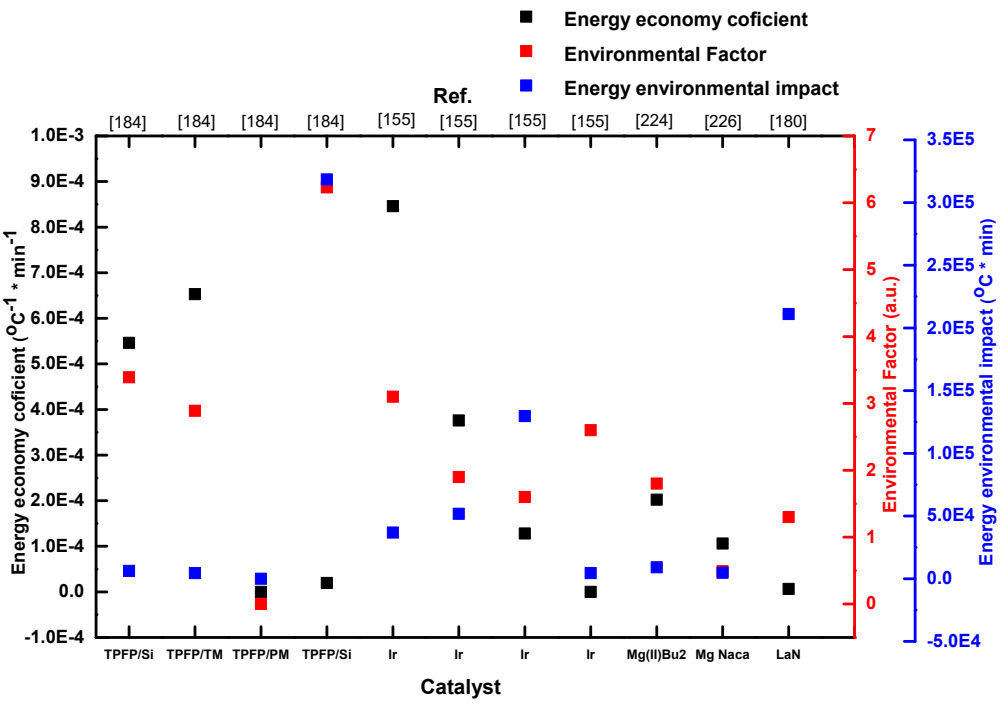

Fig.S_5 shows the energy economy factor (ε), environmental energy impact (ξ), and environmental factor (E) values for In-situ Hydrogenolysis of polycarbonates (PPC/BPA-PC) with homogeneous catalysts using Hydrosilylation/boration as a reducing agent. Data is extracted from Table 5.

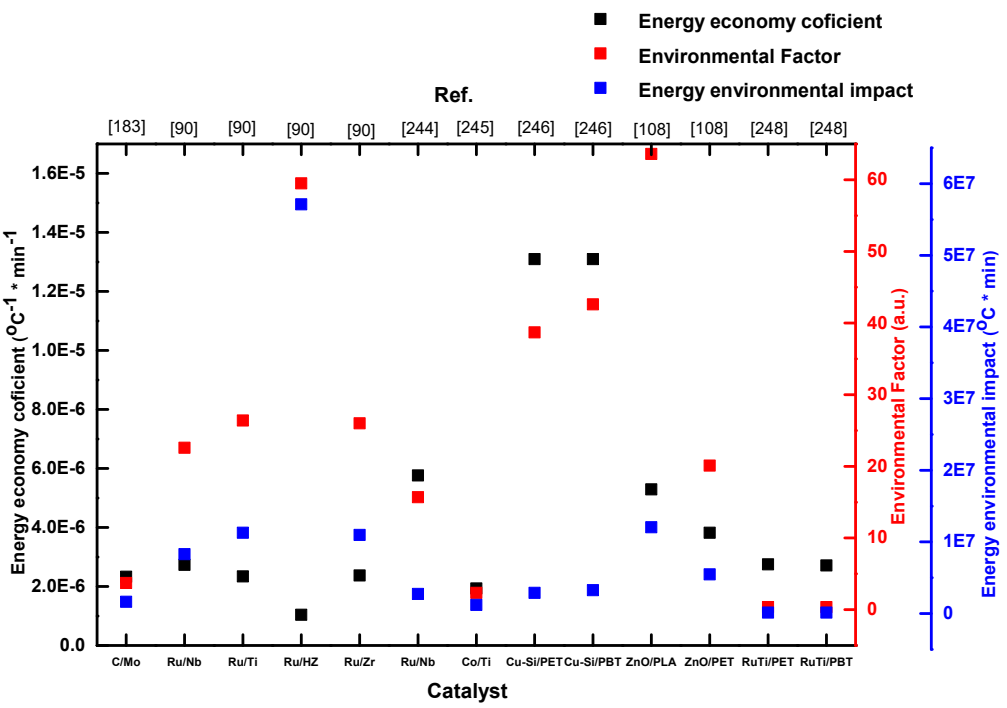

Fig.S$_6$ shows the energy economy factor (ε), environmental energy impact (ξ), and environmental factor (E) values for hydrogenolysis of polyesters (PET/PBT) using heterogeneous catalysts. Data is sourced from Table 6.

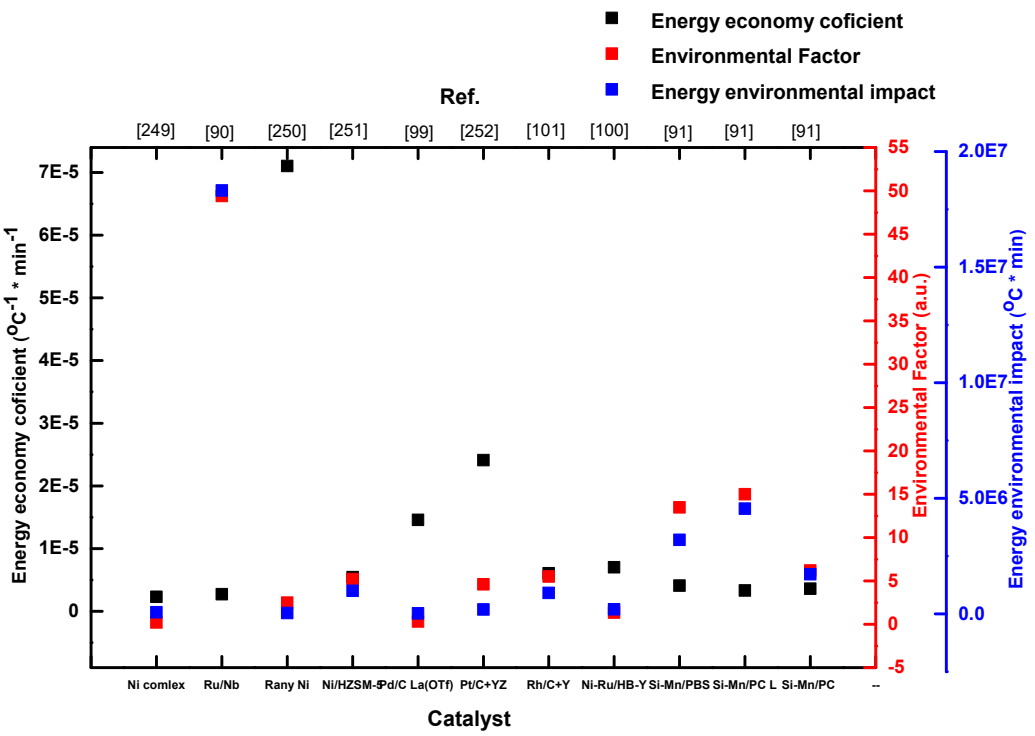

Fig.S$_7$ shows the energy economy factor (ε), environmental energy impact (ξ), and environmental factor (E) values for hydrogenolysis of BPA-PC using heterogeneous catalysts. Data is sourced from Table 6.