Supplementary Information:

The Controlled Catalytic Oxidation of Furfural to Furoic acid using AuPd/Mg(OH)2

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Figure S.1. X-ray diffraction patterns for (a) MgO support and (b) 1 % AuPd/Mg(OH)₂. MgO periclase \bullet , Mg(OH)₂ brucite \blacktriangle .



Figure S.2. X-ray diffraction patterns for (a) the fresh AuPd/Mg(OH)₂ catalyst (b) the AuPd/Mg(OH)₂ catalyst after calcination at 673 K for 2 h. MgO periclase \bullet , Mg(OH)₂ brucite \blacktriangle .



Figure S.3. X-ray diffraction patterns for (a) the fresh $AuPd/Mg(OH)_2$ (b) after one use, (c) after two uses, (d) after three uses and (e) after four uses.



Figure S.4. The effect of NaOH concentration on the initial rate of the polymerisation pathway.



Figure S.5. Reveals the orders of reaction with respect to each reactant for the Cannizzaro reaction. Reactants are as follows: S.2(a) \diamond Furfural, \blacktriangle NaOH and S.2(b) \circ O₂ (Dissolved concentration calculated using Henry's law. **Reaction Conditions:** 303 K, reaction volume (10 mL), reaction time (300 s).

Table S.1. Elemental analysis of the post reaction effluent for a reaction under standard reaction conditions

 (SD) and a reaction under base free condition (BF).

Reaction	Mg Concentration (ppm)	Mass of Mg Dissolved (mg)	Mg Leached from Catalyst (%)
AuPd/Mg(OH) _{2 (BF)}	782.5	7.83	8.68
AuPd/Mg(OH) _{2 (SD)}	5.0	0.050	0.06