**Supporting information**

Acceleration of the corrosion reaction of magnesium by Fenton reagents

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**S-1 -** pH results during the immersion.

**Figure S-1.** pH values of the study solutions during immersion of a. Pure Mg, b. ZK60 in the following solutions: 0.90% NaCl, 0.90% NaCl, 3.0×10-4M H2O2, 0.90% NaCl, 3.0×10-5M FeSO4, 0.90% NaCl, 3.0×10-4 M H2O2, 3.0×10-5 M FeSO4) at 25 °C.

**b.** ZK60

**a.** Pure Mg

**S-2 –** Hydrogen and Oxygen concentrations during the immersion (detected by gas chromatograph).

**Table S-1.** Hydrogen and oxygen concentrations during the immersion.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 480 min | 480 min | 30 min | 30 min | 2 min | 2 min |  Time |
| C(H2) ppm | C(O2)ppm | C(H2) ppm | C(O2) ppm | C(H2) ppm | C(O2) ppm |   |
| 32.36 | 1.65 | 4.68 | 1> | 1.21 | 1> | Pure Mg Saline |
| 41.69 | 2.02 | 9.33 | 1> | 1.89 | 1> | Pure Mg Saline + reagents |
| 29.74 | 1.72 | 3.54 | 1> | 1.01 | 1> | ZK60Saline |
| 40.05 | 1.98 | 4.23 | 1> | 1.12 | 1> | ZK60Saline + reagents |

**S-3 -** Auger electron spectroscopy results:

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**Figure S-2.** Variation of oxidation characterization vs. sputtering time of pure Mg after 5 min (a, c) and 1 h (b, d) of immersion in saline (a, b) and in saline + Fenton reagents (c, d)by AES.