**Electronic Supporting Information (ESI)**

Starch-assisted facile gel formation method for the synthesis of Fe-Mn binary oxide for simultaneous removal of As(III) and As(V)

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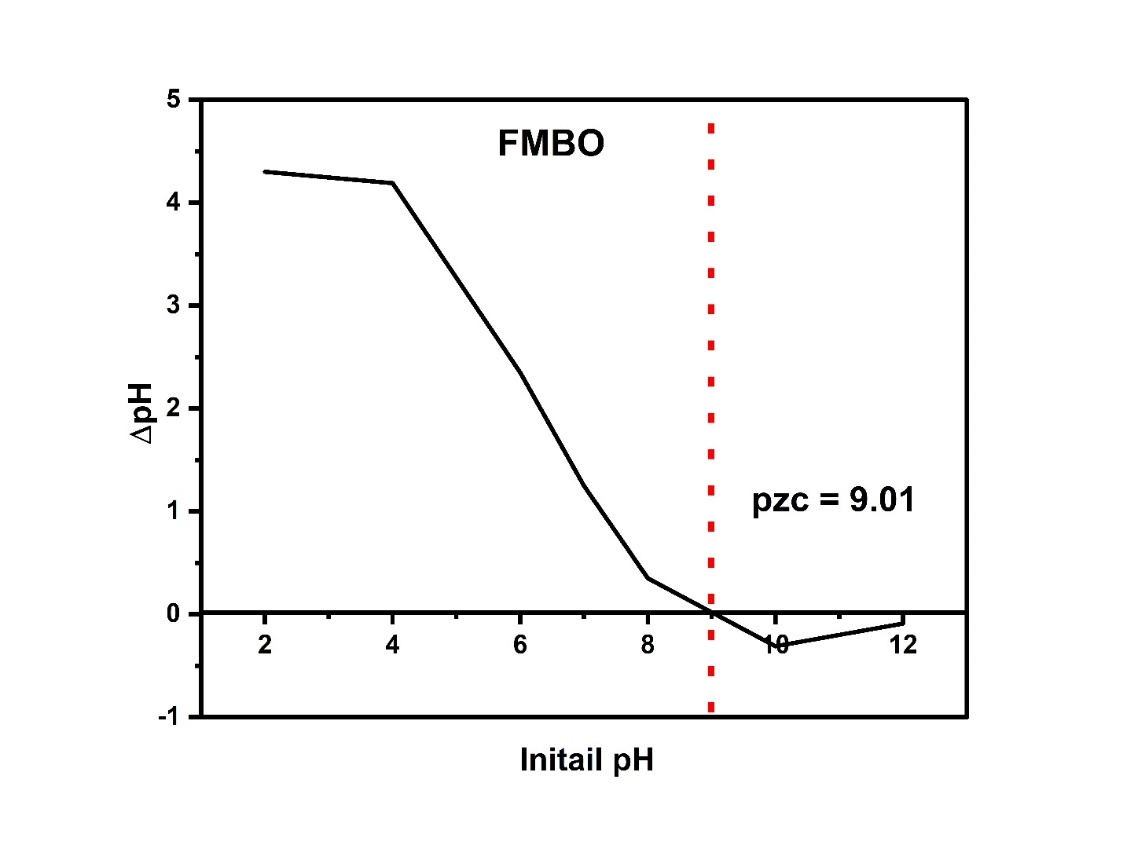
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**Fig. S1**. Energy-dispersive X-ray spectroscopy of (a) Fe2O3 (b) MnO2 (c) FMBO



**Fig. S2**. Point of zero charge of FMBO

**Table S1:** Crystallite size and lattice parameters of Fe2O3, MnO2 and FMBO

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Materials | Crystallite size  (nm) | Crystal system | Lattice parameters | | |
| **a**  (Å) | **b**  (Å) | **c**  (Å) |
| Fe2O3 | 8.37 | Hexagonal | 5.038 | 5.038 | 13.77 |
| MnO2 | 8.73 | Tetragonal | 9.815 | 9.815 | 2.847 |
| FMBO | 11.88 | Cubic | 8.371 | 8.371 | 8.371 |

**Table S2**: Sorption capacity and sorption efficiency of Fe2O3, MnO2 and FMBO for the removal arsenic from the solutions of As(V), As(III) and (As(III) + As(V))

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Materials** | **As(V)** | | As(III) | | As(V) + As(III) | |
| **Sorption Capacity** | **sorption efficiency** | **Sorption Capacity** | **sorption efficiency** | **Sorption Capacity** | **sorption efficiency** |
| **Fe2O3** | 5.000 | 4.000 | 0.00 | 0.00 | 2.500 | 2.000 |
| **MnO2** | 0.000 | 0.000 | 0.00 | 0.00 | 0.000 | 0.000 |
| **FMBO** | 53.325 | 42.660 | 15.83 | 12.66 | 79.675 | 63.740 |