Electronic Supplementary Material (ESI) for New Journal of Chemistry.
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Supporting information

Enzymatic activity of Fe-grafted mesoporous silica nanoparticles: An insight to H_2O_2 and glucose detection

M. Aghayan [a], A.Mahmoudi[a,*], M. Reza Sazegar [a], N. Ghavidel Hajiagha[a], K. Nazari[b]

[a]Dept. of Chemistry, Faculty of science, Islamic Azad University, North Tehran Branch, Tehran, Iran
[b]Research Institute of Petroleum Industry, N.I.O.C., Tehran, Iran

* Corresponding Author
E-mail: mahmoudiali.ac@gmail.com
Tel.: +98 9123377127

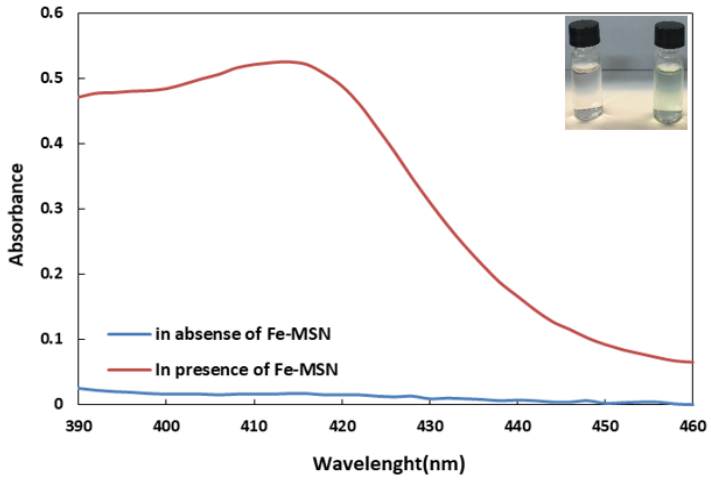

Fig. S1 The UV–visible absorption spectra of ABTS after oxidation by dissolved O_2 in the presence and absence of Fe-MSN.

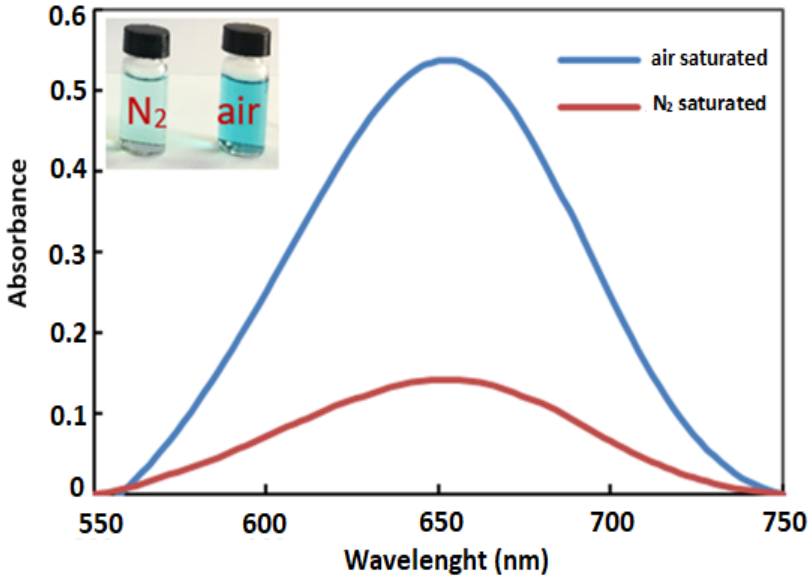

Fig. S2 Oxidase-like activity of Fe-MSN.O_2-dependent catalytic oxidation of 0.2mM TMB with 100 µg/mL Fe-MSN in 1000 µL PBS (pH 4)

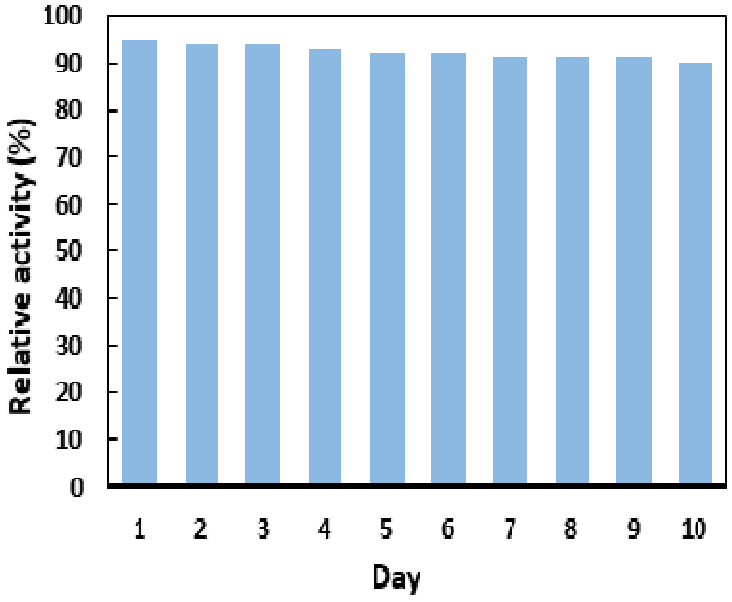

Fig. S3 long-term Stability experiments of peroxidase activity system conducted at 0.1 μg/mL Fe-MSN in 50 mM in HAc-NaAc buffer (pH = 4.0) with 0.5 mM H_2O_2 and 0.2 mM TMB as substrate.

Table S1 Determination of H_2O_2 of milk samples with Fe-MSN

Number	Detected(μM)	Added(μM)	Found(μM±SD)	Recovery(%)	RSD(%)
1	ND	1	0.97±0.023	97	2.36
2	ND	10	9.84±0.115	98	1.17
3	ND	25	24.72±0.26	99	1.06

ND= No Detection

Table S2 Determination of glucose in human serum

Samples	This method (mM±S.D.) (n=5)	Hospital method (mM)[a]	t-test
No. 1	4.96±0.07	5.01	$1.60<t_{0.05}$ (2.57)
No. 2	6.08±0.05	6.11	$1.34<t_{0.05}$ (2.57)
No. 3	5.46±0.06	5.51	$1.86<t_{0.05}$ (2.57)
No. 4	4.86±0.1	4.92	$1.34<t_{0.05}$ (2.57)

[a] Results obtained by BT-3000 Chemistry Analyzer (Biotecnica)