

Core-shell magnetic zinc-based molecularly imprinted polymer: a robust heterogeneous catalytic nanoreactor toward CO₂ fixation reaction

Tahereh Nasiriani,^a Neda Adabi,^a Ahmad Shaabani,^{a,b*}

^aDepartment of Organic Chemistry, Shahid Beheshti University, Daneshjou Boulevard, Tehran, 1983969411, Iran

^bPeoples' Friendship University of Russia (RUDN University), 6, Miklukho-Maklaya Street, Moscow, 117198, Russian Federation

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1. ¹H NMR data of isolated pure products

4-(Phenoxymethyl)-1,3-dioxolan-2-one (6a).

White solid: ¹H NMR (300 MHz, CDCl₃) δ: 4.13-4.28 (m, 2H), 4.52-4.66 (m, 2H), 5.03-5.09 (m, 1H), 6.91 (2H_{Ar}), 7.03 (1H_{Ar}), 7.28-7.35 (m, 2H_{Ar}).

4-Phenyl-1,3-dioxolan-2-one (6b).

White solid: ¹H NMR (300 MHz, CDCl₃) δ: 4.27-4.32 (m, 1H), 4.76-4.82 (m, 1H), 5.64-5.70 (m, 1H), 7.14-7.42 (m, 5H_{Ar}).

4-(Chloromethyl)-1,3-dioxolan-2-one (6c).

White solid: ¹H NMR (300 MHz, CDCl₃) δ: 3.71-3.85 (2 H, CH₂Cl), 4.39-4.44 (m, 1 H, OCH₂), 4.57-4.63 (m, 1 H, OCH₂), 4.97-5.04 (m, 1 H, OCH₂).

4-(1-Propenyloxymethyl)-1,3-dioxolan-2-one (6d).

White solid: ¹H NMR (300 MHz, CDCl₃) δ: 5.98 (s, 1H, =CH), 5.51 (s, 1H, =CH), 4.97 (1H, OCH), 4.53 (1H, OCH₂), 4.38 (3H, OCH₂, OCH), 1.93 (s, 3H, CH₃).

4-Butyl-1,3-dioxolan-2-one (6e).

*Corresponding author. Tel.: +982129902800; e-mail: a-shaabani@sbu.ac.ir

Orange oil: ^1H NMR (300 MHz, CDCl_3) δ : 0.59-0.80 (m, 3H), 1.17-1.24 (m, 4H), 1.51-1.63 (m, 2H), 3.88-3.95 (m, 1H), 4.37-4.44 (m, 1H), 4.53-4.63 (m, 1H).

Octahydrocycloocta[*d*][1,3]dioxol-2-one (6f).

Colorless oil: ^1H NMR (300 MHz, CDCl_3) δ : 0.98-1.03 (m, 4H), 1.44-1.47 (m, 4H), 1.89-2.02 (m, 4H), 3.37-3.39 (m, 2H).

2. ^1H NMR spectrum of products 6a-f

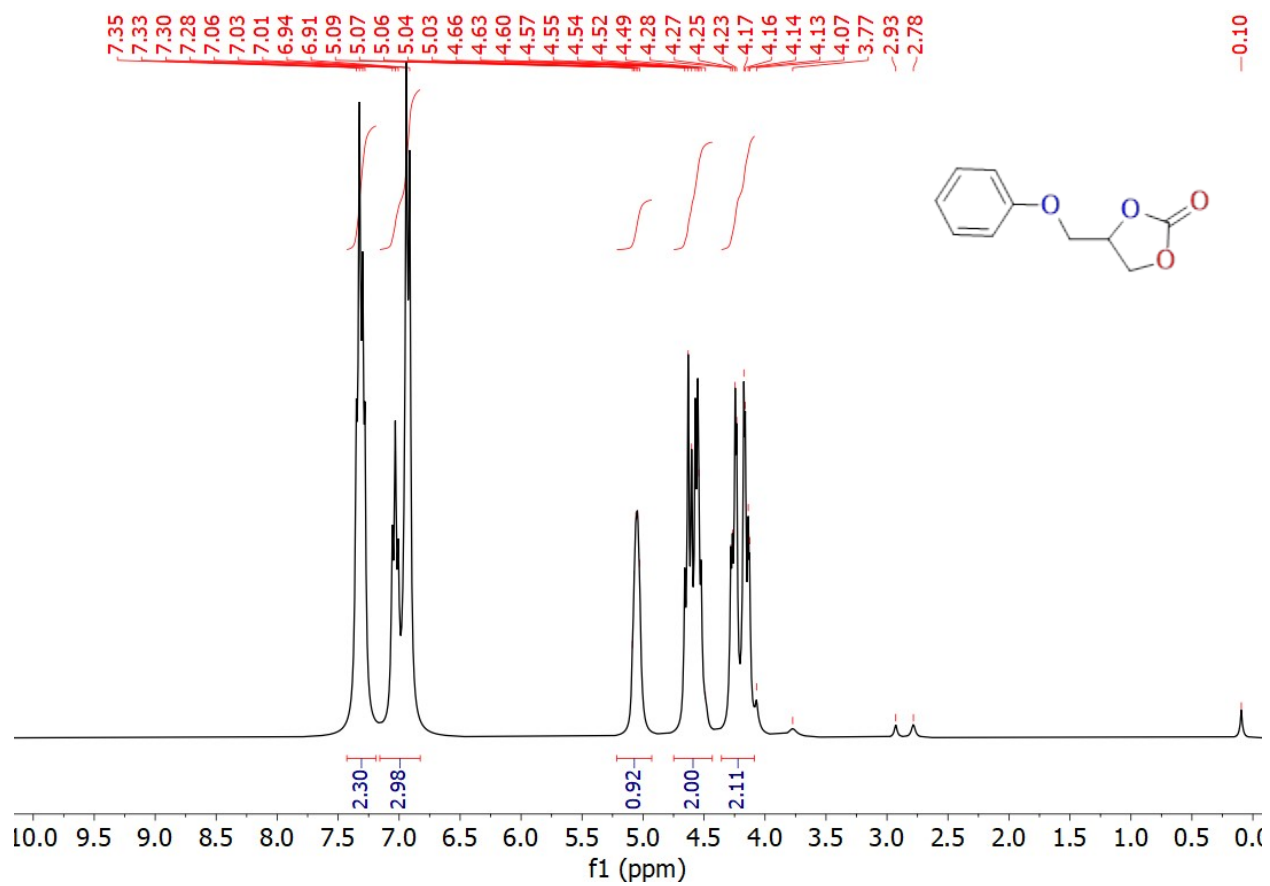


Figure S1. ¹H NMR spectrum of 4-(phenoxymethyl)-1,3-dioxolan-2-one (**6a**).

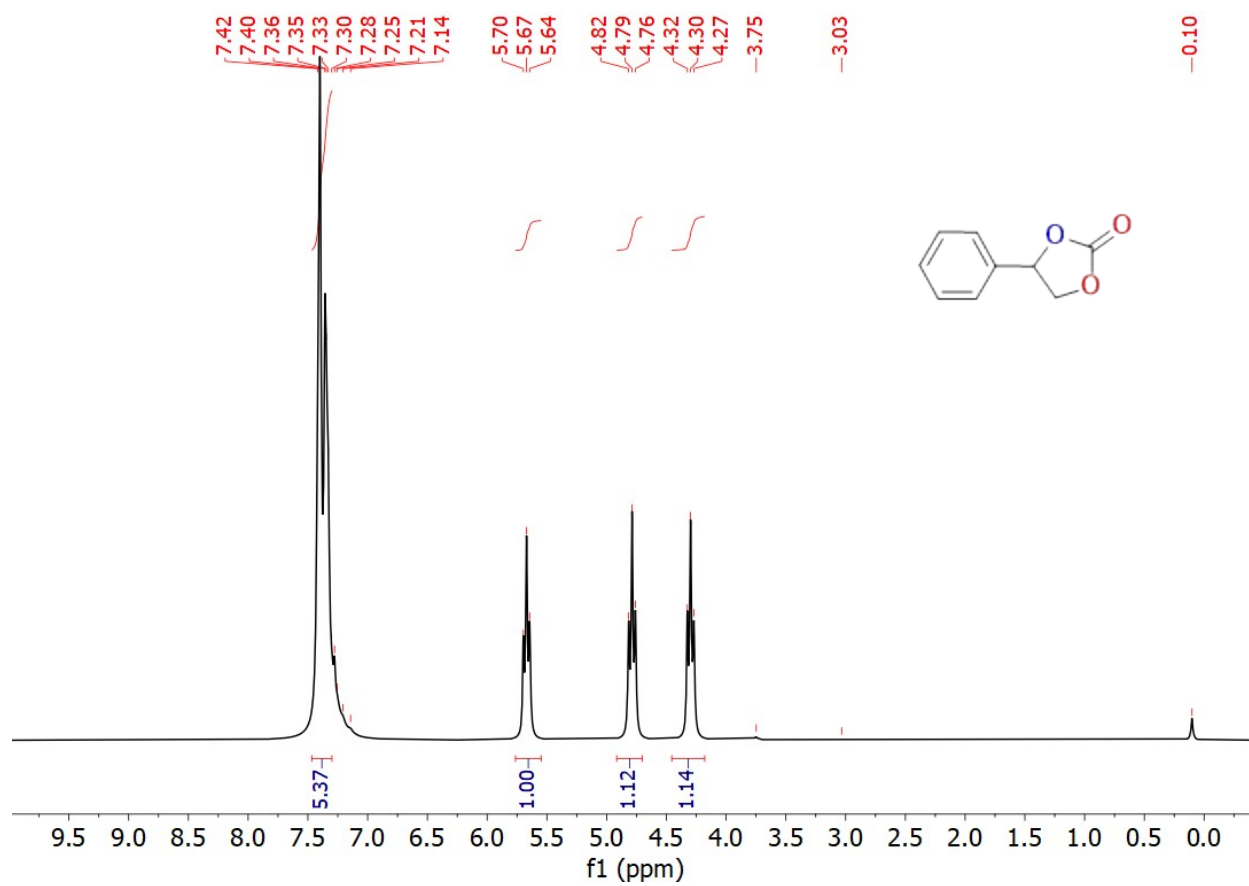


Figure S2. ¹H NMR spectrum of 4-phenyl-1,3-dioxolan-2-one (**6b**).

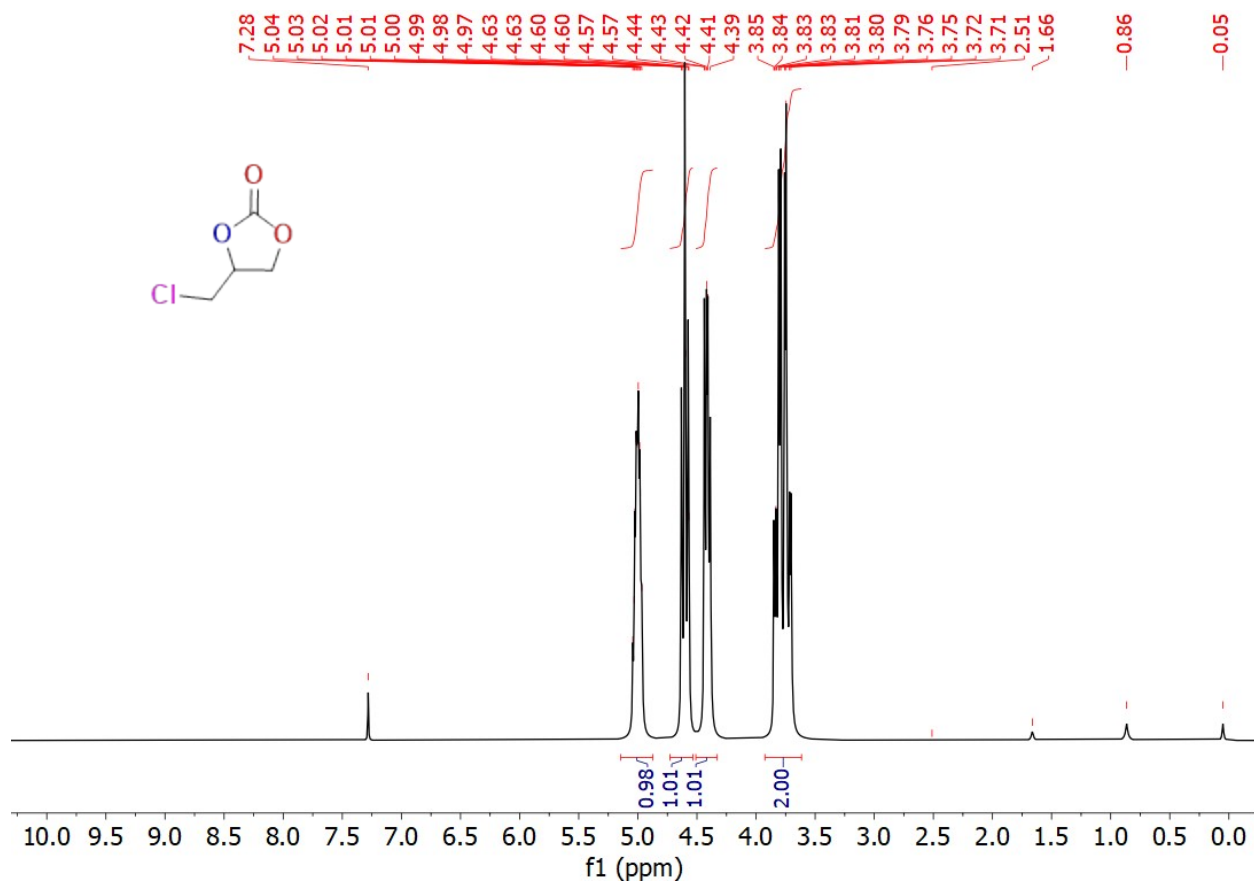


Figure S3. ¹H NMR spectrum of 4-(chloromethyl)-1,3-dioxolan-2-one (**6c**).

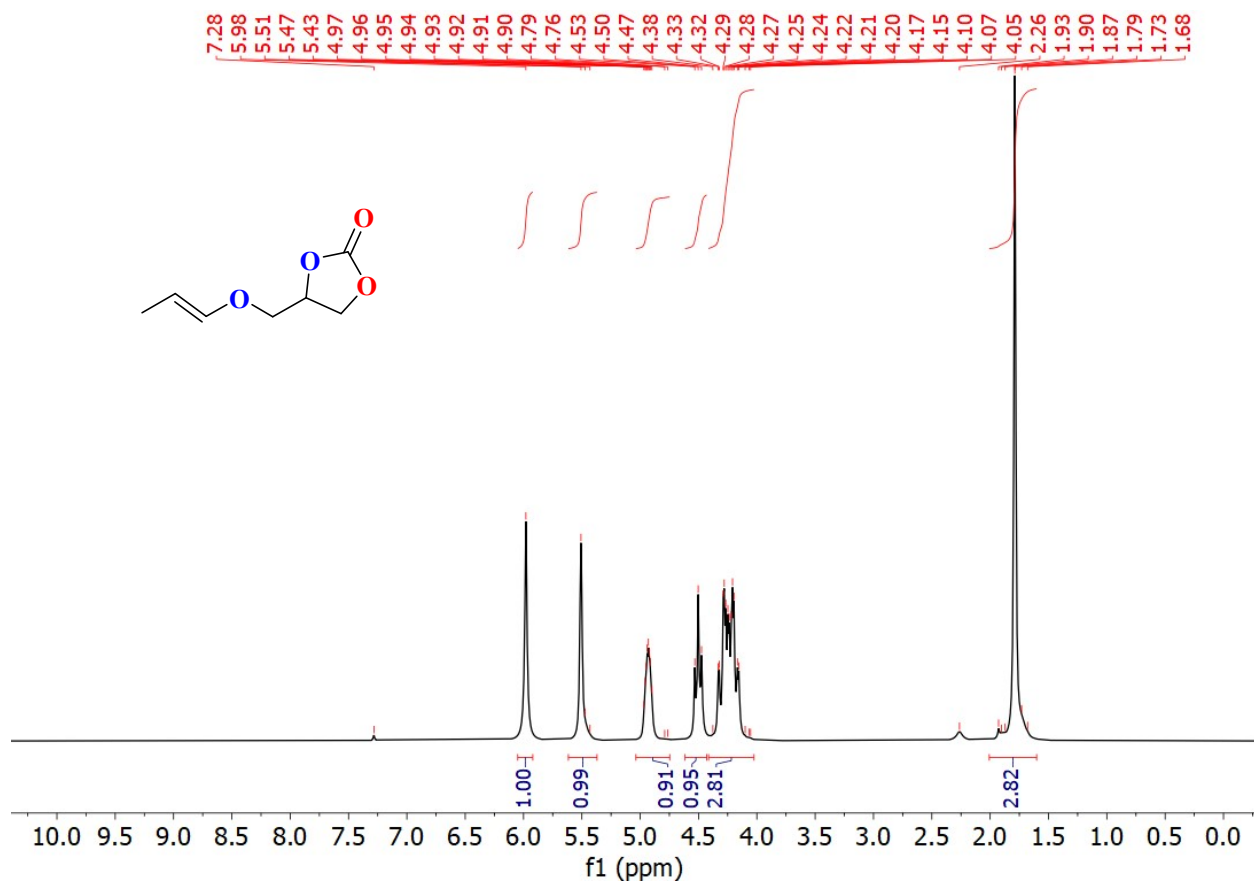


Figure S4. ¹H NMR spectrum of 4-(1-Propenyloxymethyl)-1,3-dioxolan-2-one (**6d**).

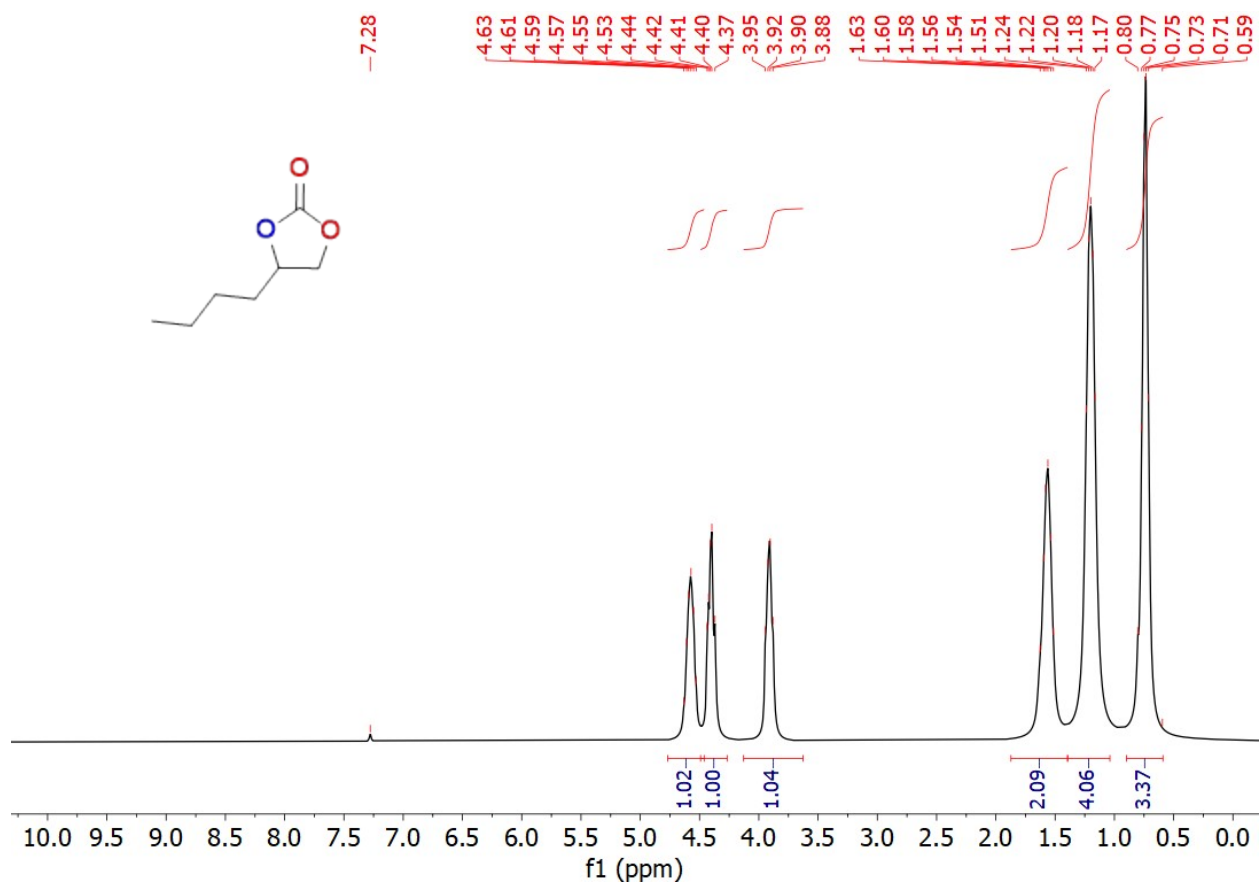


Figure S5. ¹H NMR spectrum of 4-butyl-1,3-dioxolan-2-one (**6e**).

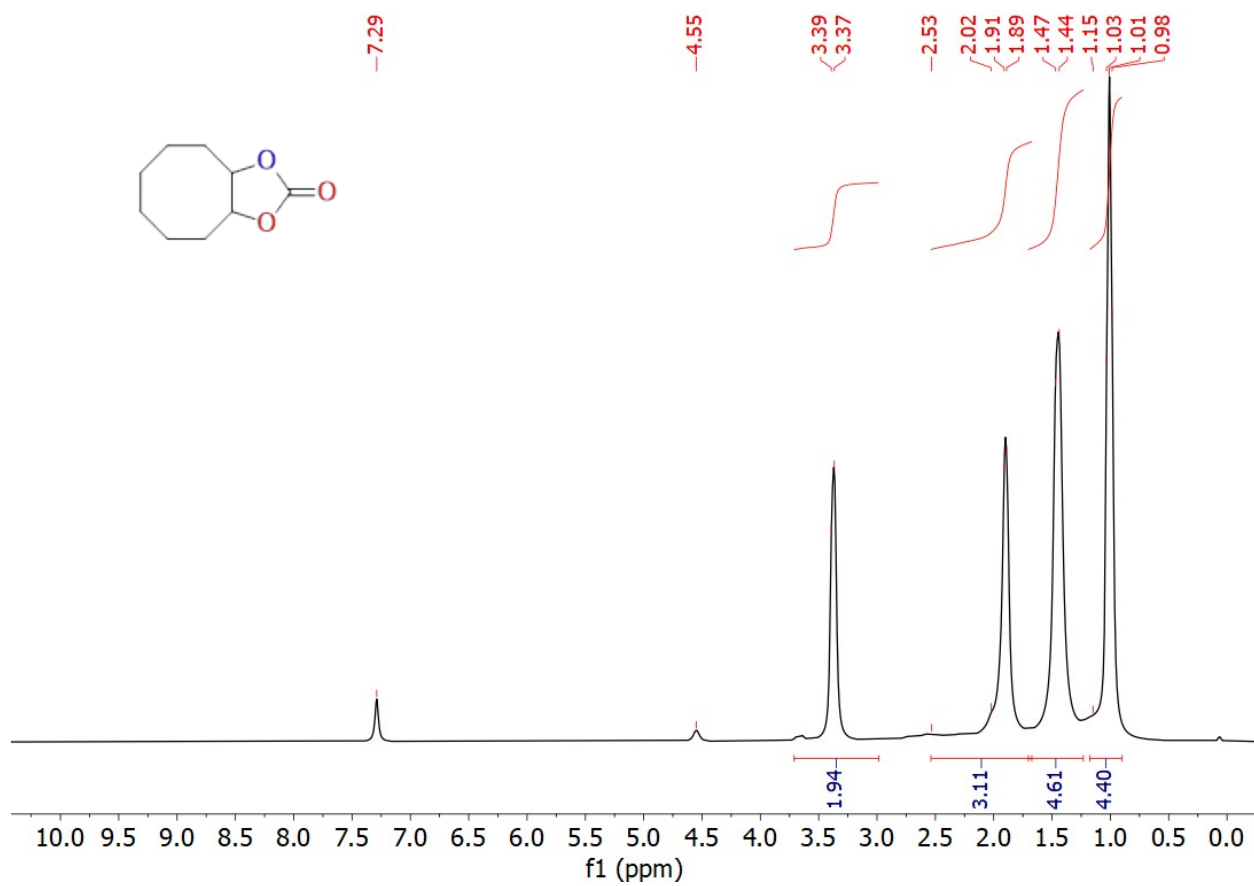


Figure S6. ¹H NMR spectrum of octahydrocycloocta[*d*][1,3]dioxol-2-one (6f).