

SUPPLEMENTARY INFORMATION

Silica nanospheres supported diazafluorene iron complex: an efficient and versatile nanocatalyst for the synthesis of propargylamines from terminal alkynes, dihalomethane and amines

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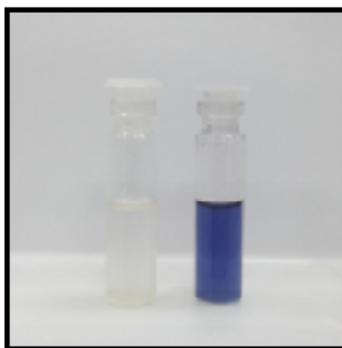


Fig. S1: Ninhydrin test of SiO₂@APTES
(Upon addition of the ninhydrin solution to the nanomaterial (SiO₂@APTES), change in colour from white to blue was observed)

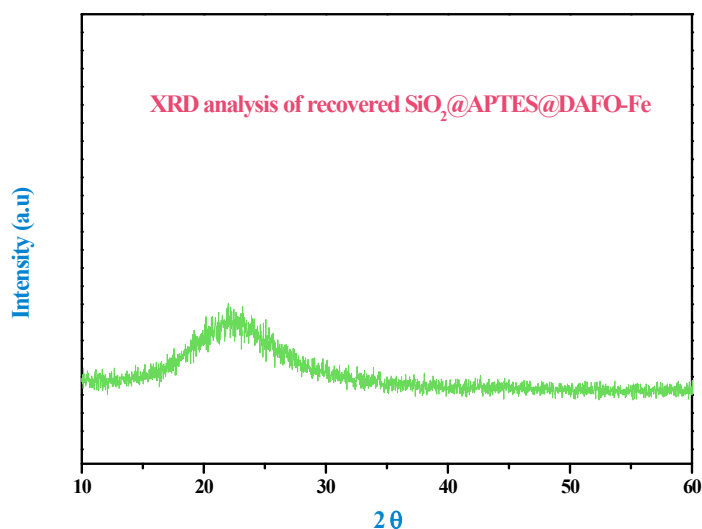


Fig. S2: XRD patterns of recovered SiO₂@APTES@DAFO-Fe

Table S1 Physico-chemical parameters of SiO₂, SiO₂@APTES and SiO₂@APTES@DAFO-Fe

Nano-material	Elemental Analysis			BET surface area (m ² g ⁻¹)
	C(%)	H(%)	N(%)	
SiO ₂	-	-	-	241.75
SiO ₂ @APTES	5.43	1.26	1.83	152.81
SiO ₂ @APTES@DAFO-Fe	15.52	2.75	5.36	81.29

Table S2 One pot three component coupling reaction using various catalysts ^a.

Entry	Catalyst	Amount (mg)	Conversion ^b (%)	TON(TOF) ^c
1.	No catalyst	-	-	-
2.	Fe(acac) ₃	30	50	589(59)
3.	FeBr ₂	30	20	143(14)
4.	FeCl ₃	30	98	533(53)
5.	SiO ₂	30	-	-
6.	SiO ₂ @APTES@DAFO-Fe	10	88	233(23)
7.	SiO ₂ @APTES@DAFO-Fe	20	95	251(25)
8.	SiO ₂ @APTES@DAFO-Fe	30	100	264(26)
9.	SiO ₂ @APTES@DAFO-Fe	40	100	264(26)
10.	SiO ₂ @APTES@DAFO-Fe	50	100	264(26)

^a Reaction conditions: phenyl acetylene (1 mmol), dichloromethane (2 mmol), diethylamine (2 mmol), DBU (1 mmol), acetonitrile (2 mL), temp. 70°C, time 10 h

^b Conversion was determined by GC-MS.

^c TON is the number of moles of product per mol of catalyst and TOF = TON per hour.