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

Veratraldehyde Appended Organosilicon Probe and its Hybrid Silica Nanoparticles as a Dual Chemosensor for Colorimetric and Fluorimetric Detection of Cu^{2+} and Fe^{3+} ions

Gurjaspreet Singh[a*], Jashan Deep Kaur[a], Pawan[a], Sushma[a], Priyanka[a], Pinky Satija[b], K.N. Singh[a*], Marı´a Angeles Esteban[c*], Cristo´bal Espinosa-Ruı´z[c]

[a]Department of Chemistry, Panjab University, Chandigarh 160014, India

[b]School of Advanced Chemical Sciences, Shoolini University, Solan, Himachal Pradesh, India

[c]Department of Cell Biology & Histology, Faculty of Biology, University of Murcia, 30100 Murcia, Spain

[*]Corresponding Authors

1. Prof. Gurjaspreet Singh

Department of Chemistry & Centre of Advanced Studies

Panjab University, Chandigarh, India

Email: gjpsingh@pu.ac.in

Tel. No: 0172-2534428, 09814302099, 9317502099

Fax No: 0172-2545074

2. Prof. K.N. Singh

Professor,

Department of Chemistry, Panjab University, Chandigarh, India

Email: kns1947@gmail.com

3. Marı´a Angeles Esteban

Full professor

Department of Cell Biology & Histology, Faculty of Biology, University of Murcia, 30100 Murcia, Spain

+34 868887665

E-mail: aesteban@um.es

Table of Contents:

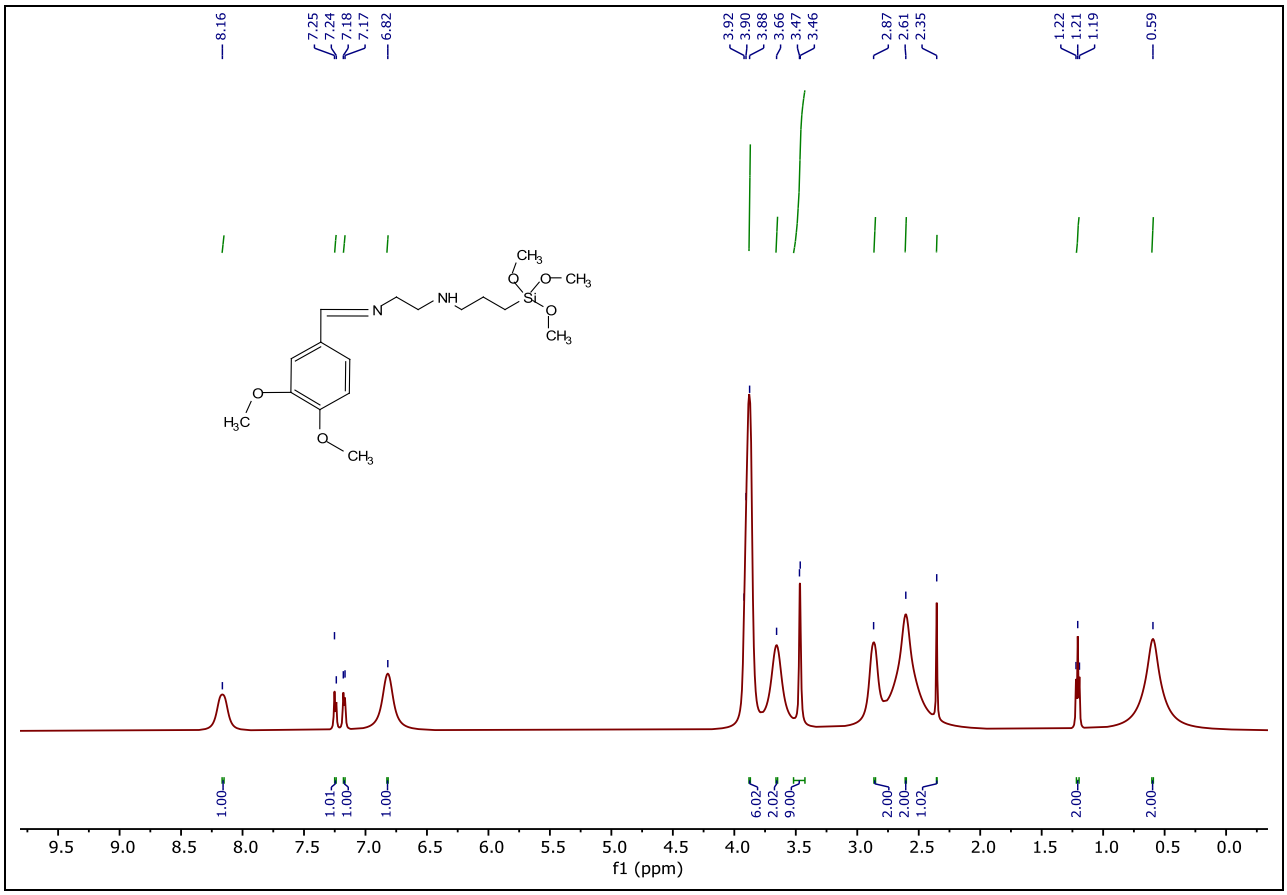

Fig.S1: ^{1}H NMR spectrum of compound 2a

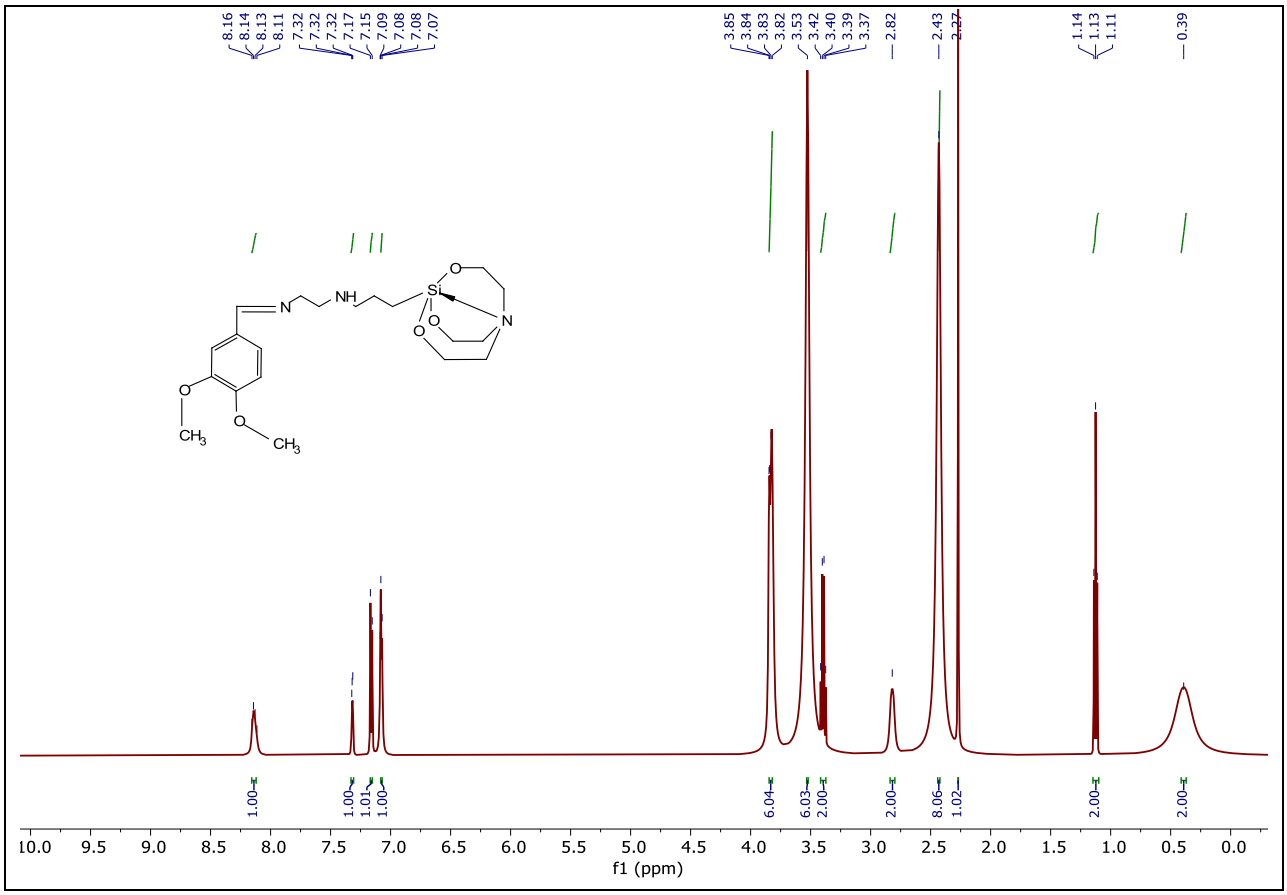

Fig.S2: ^{1}H NMR spectrum of compound 3a

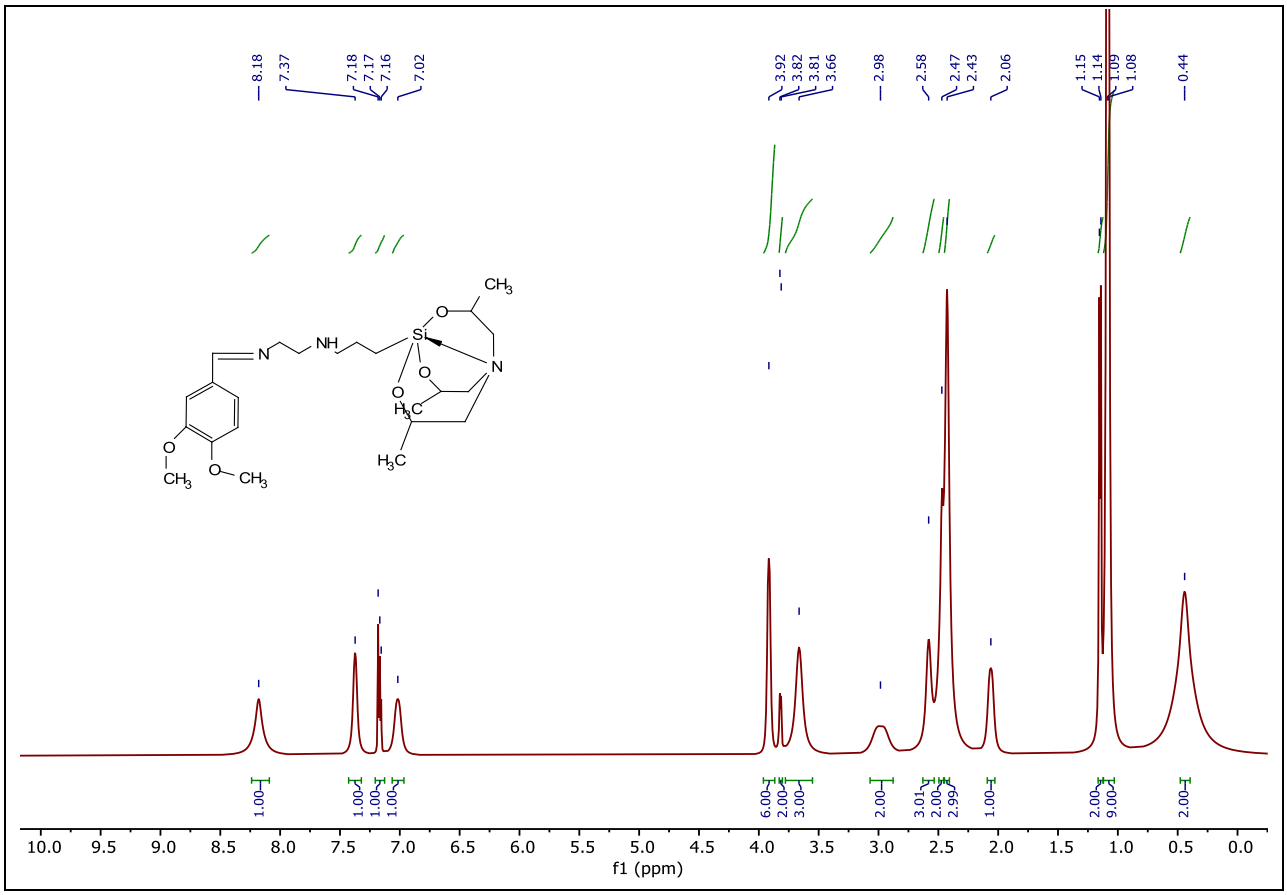

Fig.S3: ^{1}H NMR spectrum of compound 3b

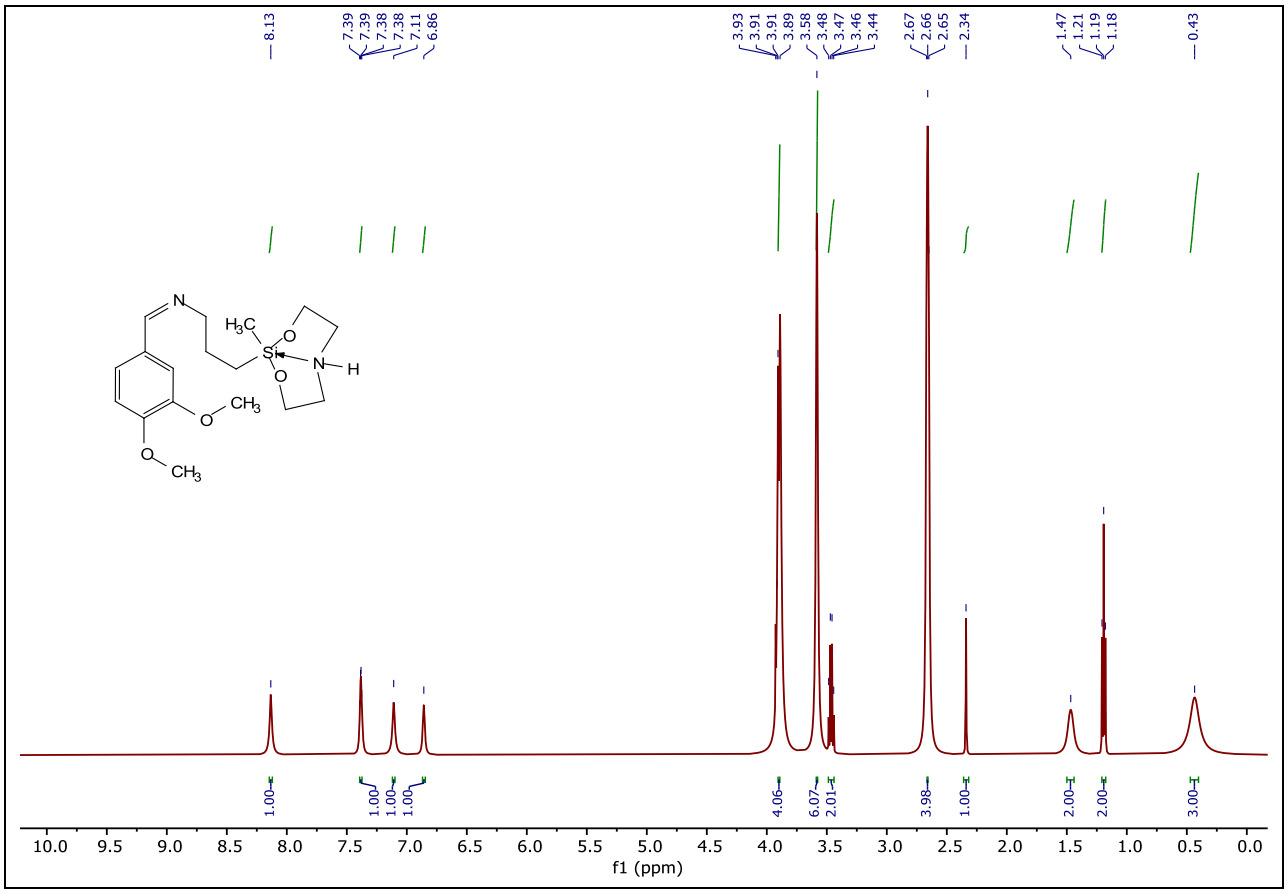

Fig.S4: ^{1}H NMR spectrum of compound 3c

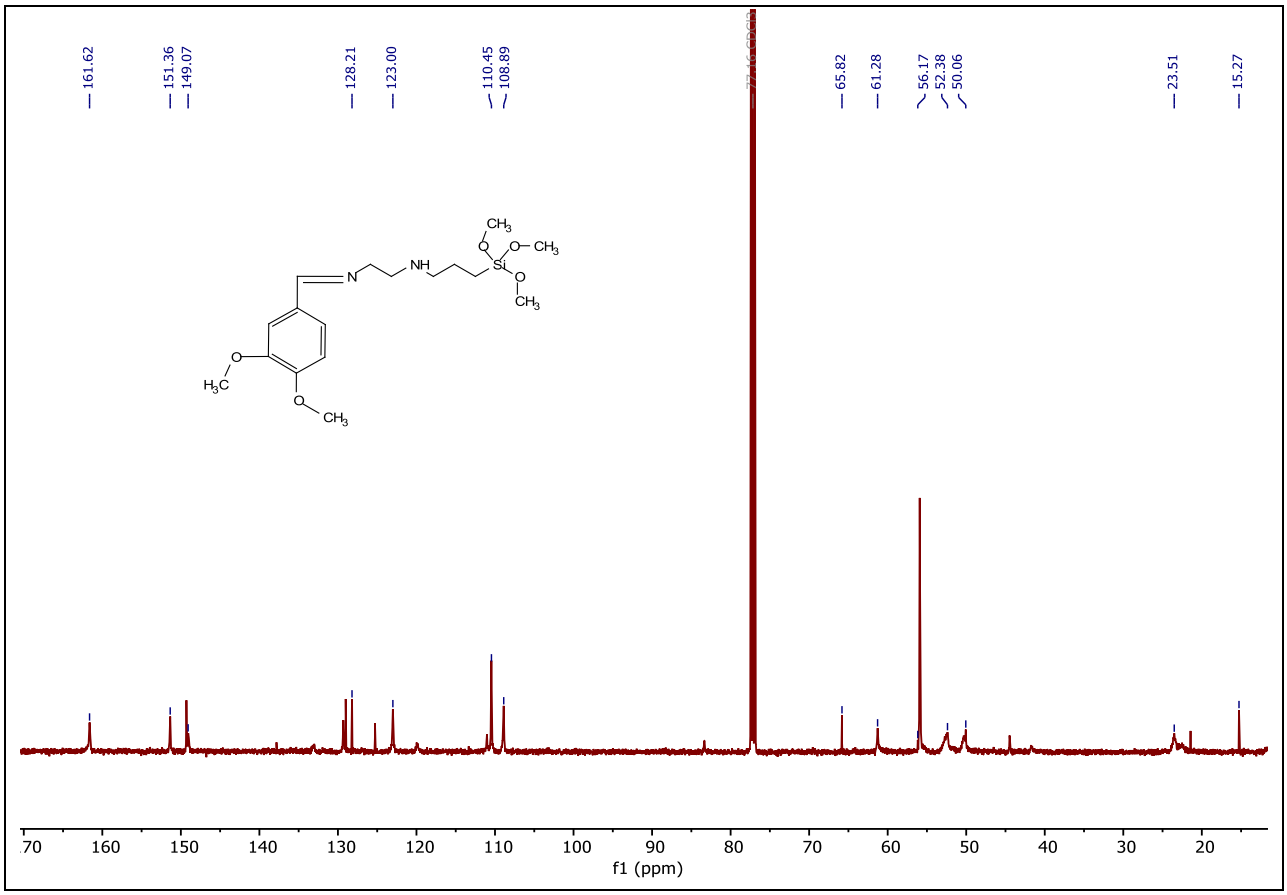

Fig.S5: ^{13}C NMR spectrum of compound 2a

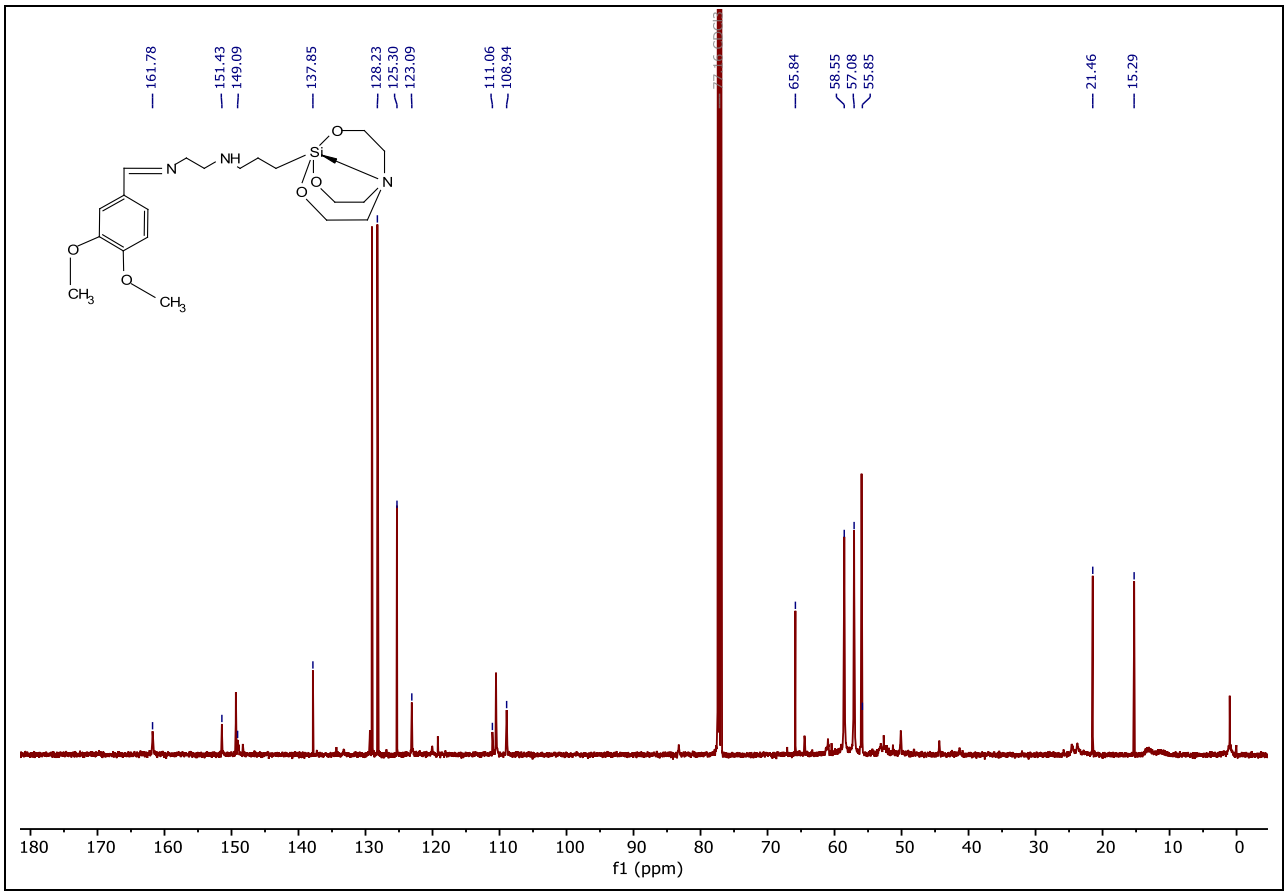

Fig.S6: ^{13}C NMR spectrum of compound 3a

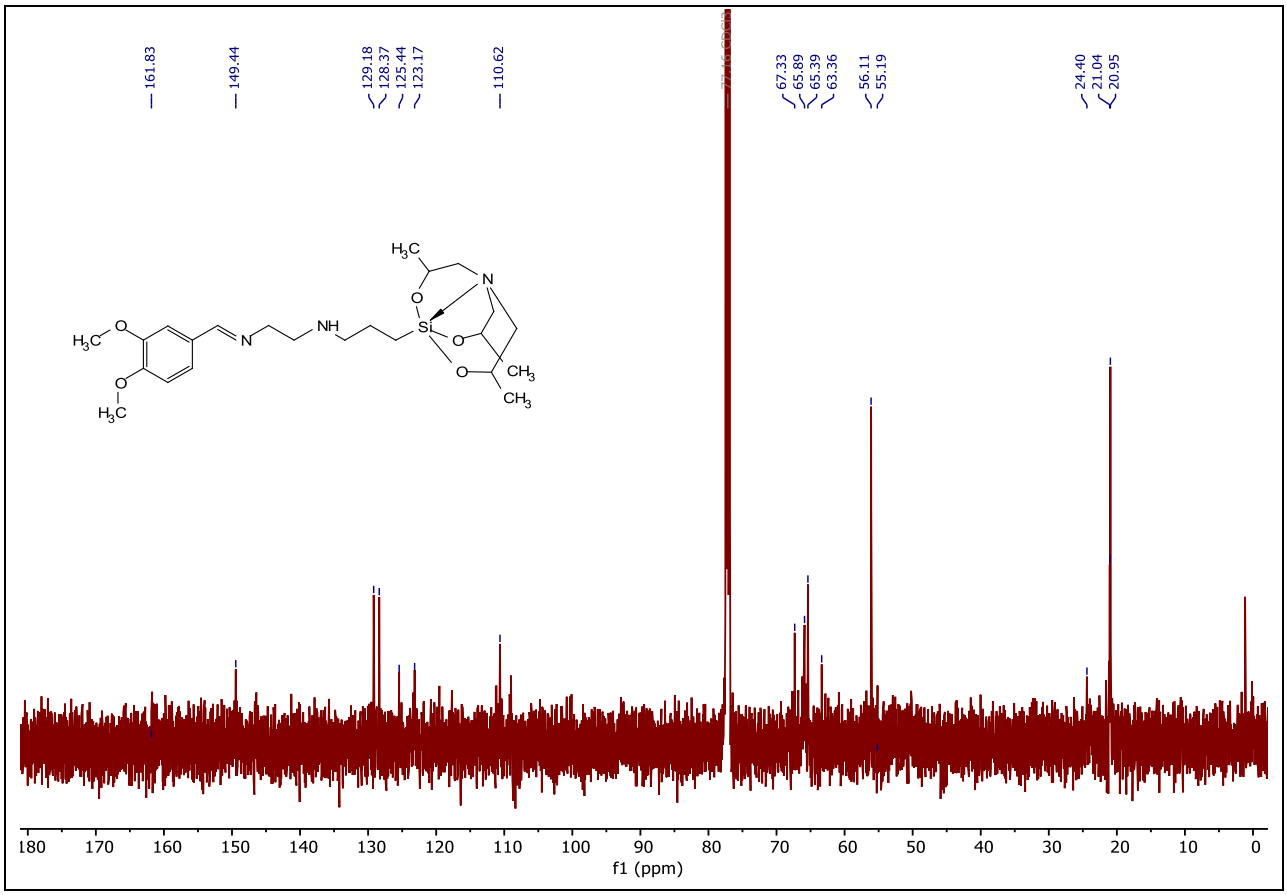

Fig.S7: ^{13}C NMR spectrum of compound 3b

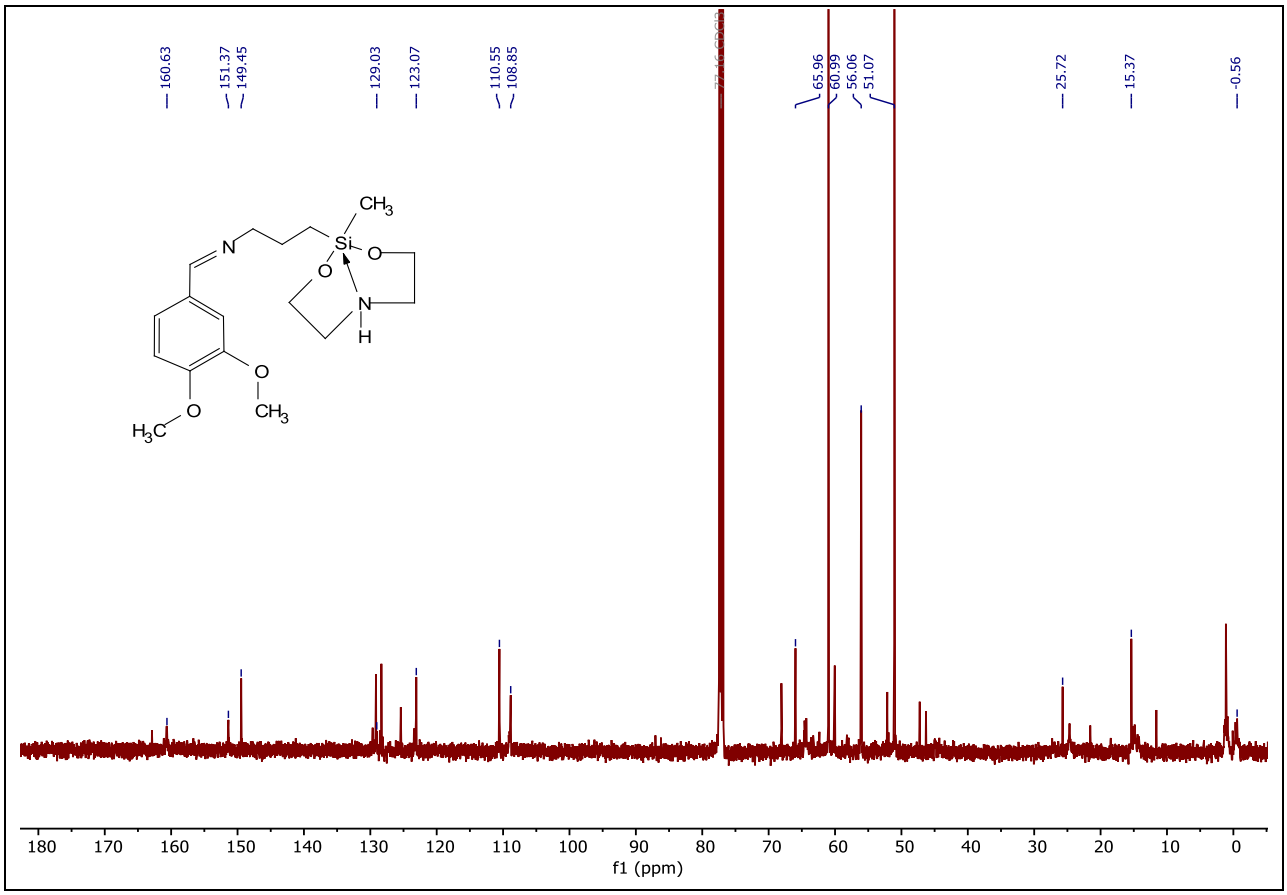

Fig.S8: ^{13}C NMR spectrum of compound 3c

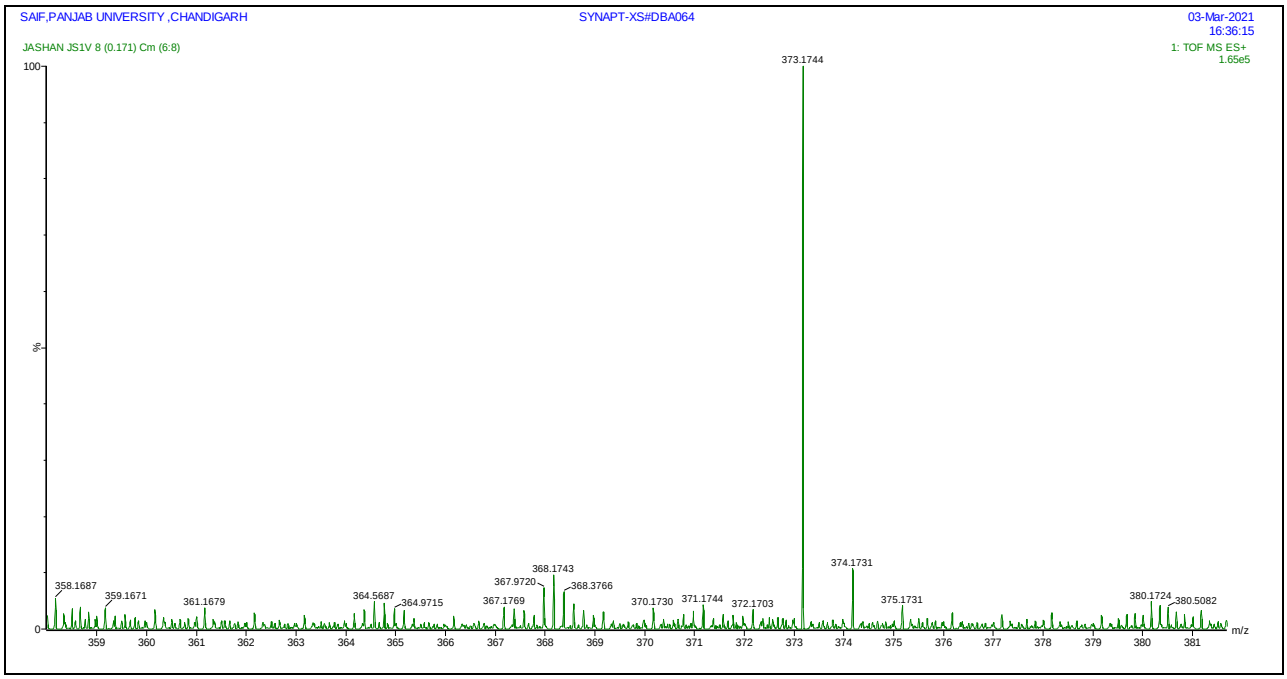

Fig.S9: Mass spectrum of compound 2a

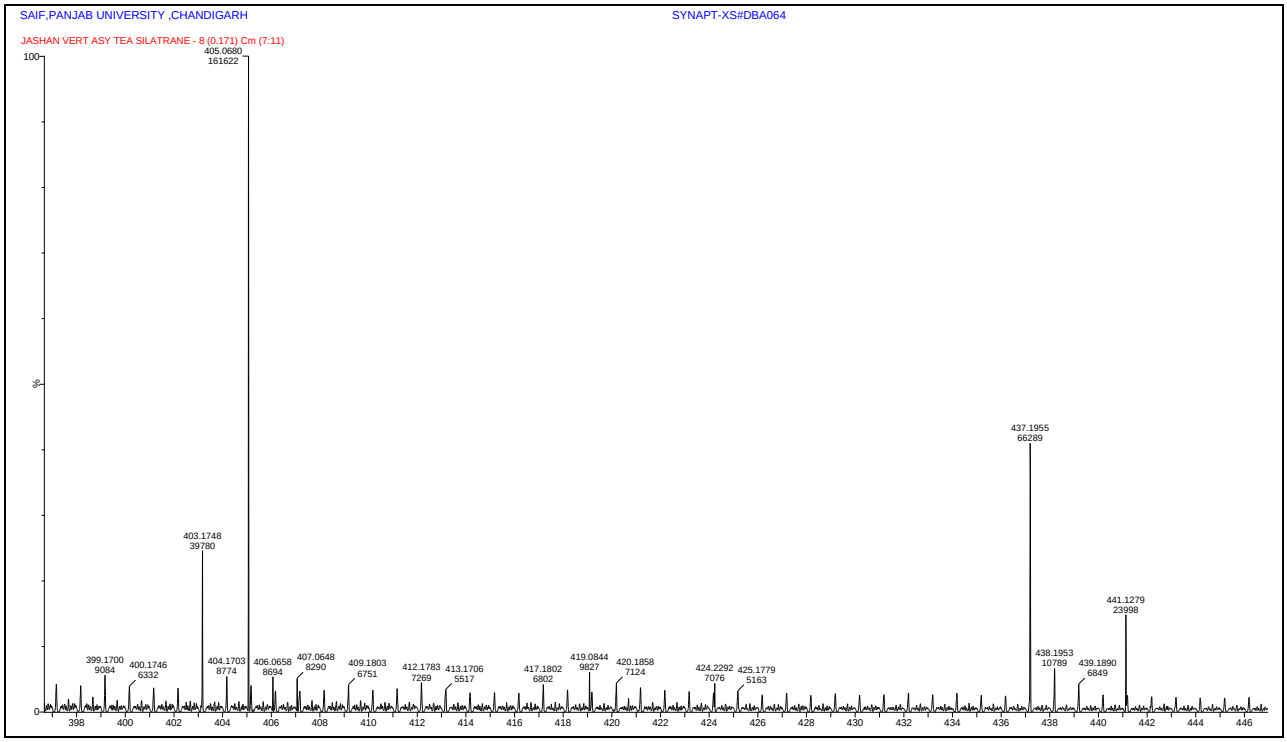

Fig.S10: Mass spectrum of compound 3a

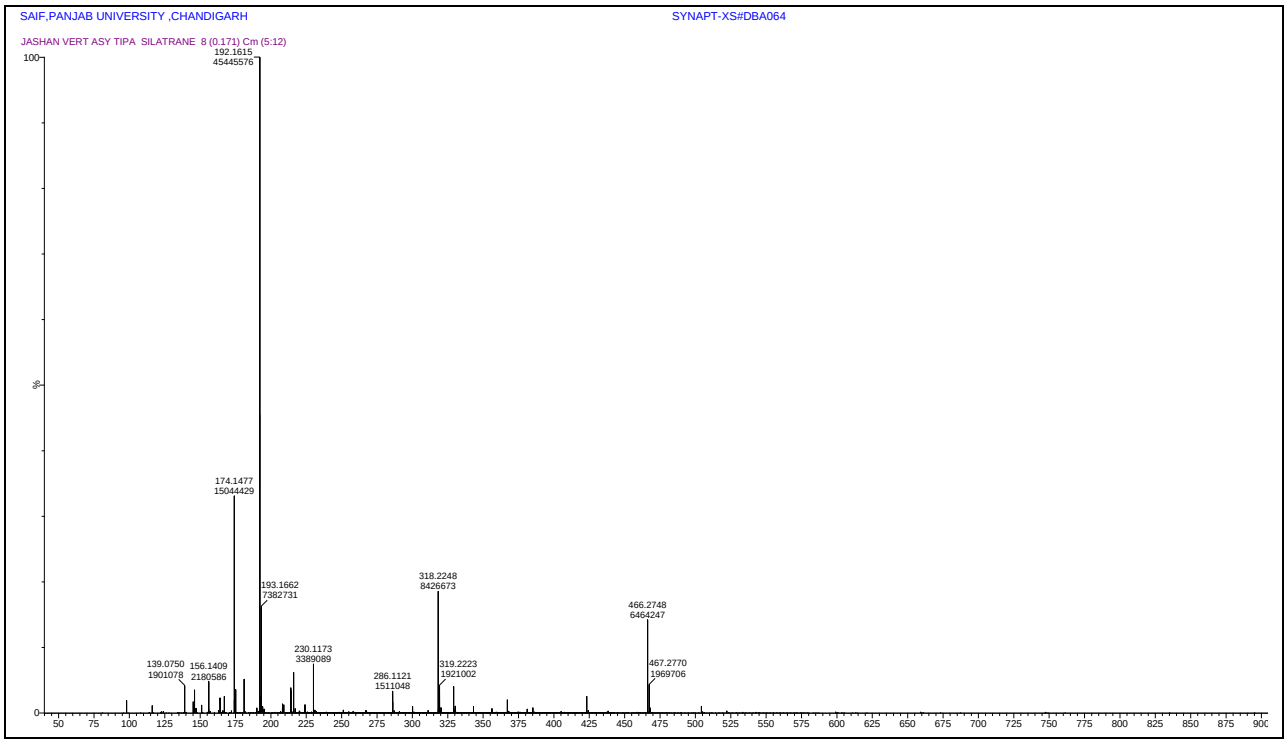

Fig.S11: Mass spectrum of compound 3b

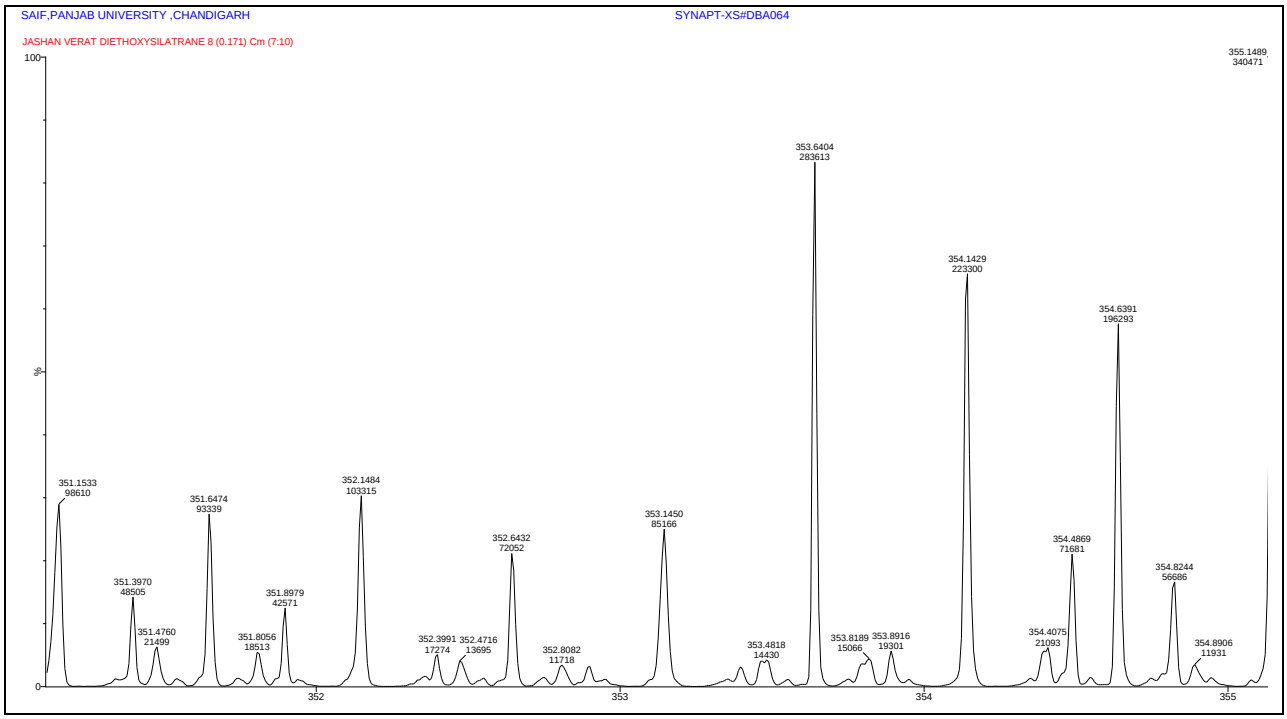

Fig.S12: Mass spectrum of compound 3c

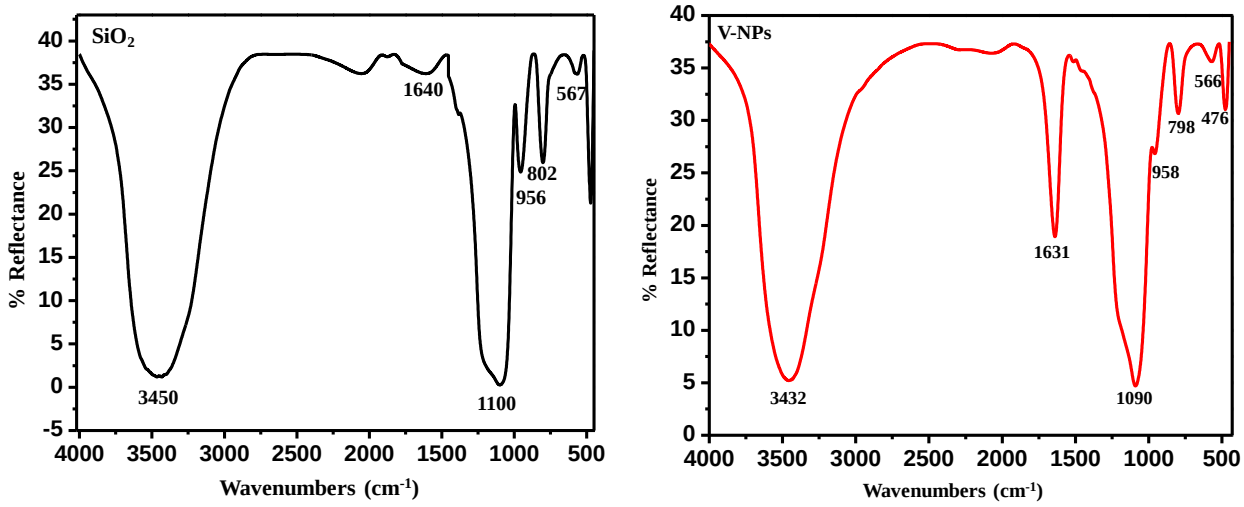

Fig. S13: FT-IR spectra of silica nanoparticles (SiO_2) and V-NPs

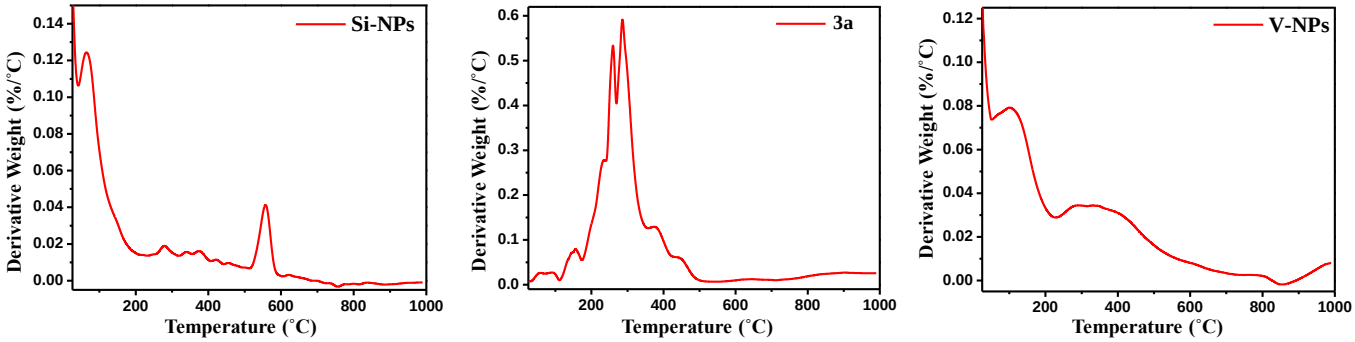

Fig. S14: DTA curves of silica nanoparticles (SiO_2), 3a and V-NPs

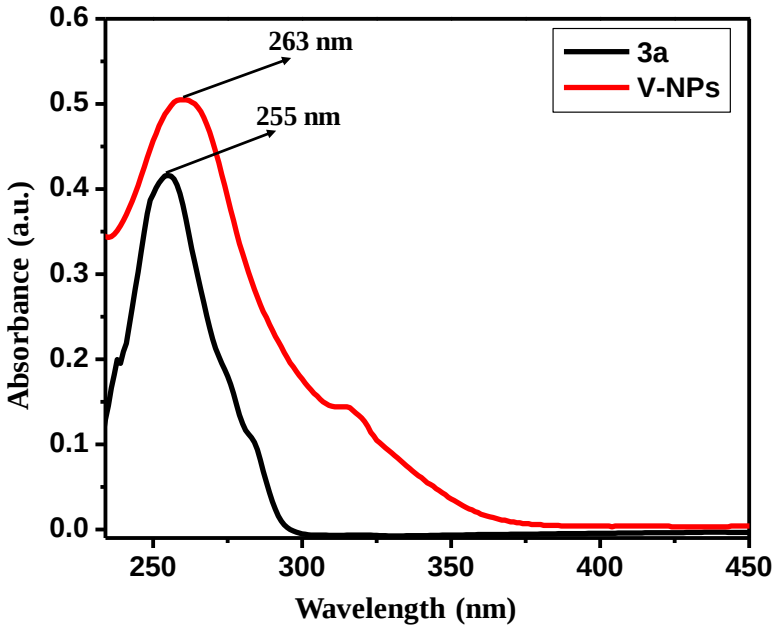

Fig. S15: UV-Visible spectra of 3a and V-NPs in methanol (10^{-6} M)

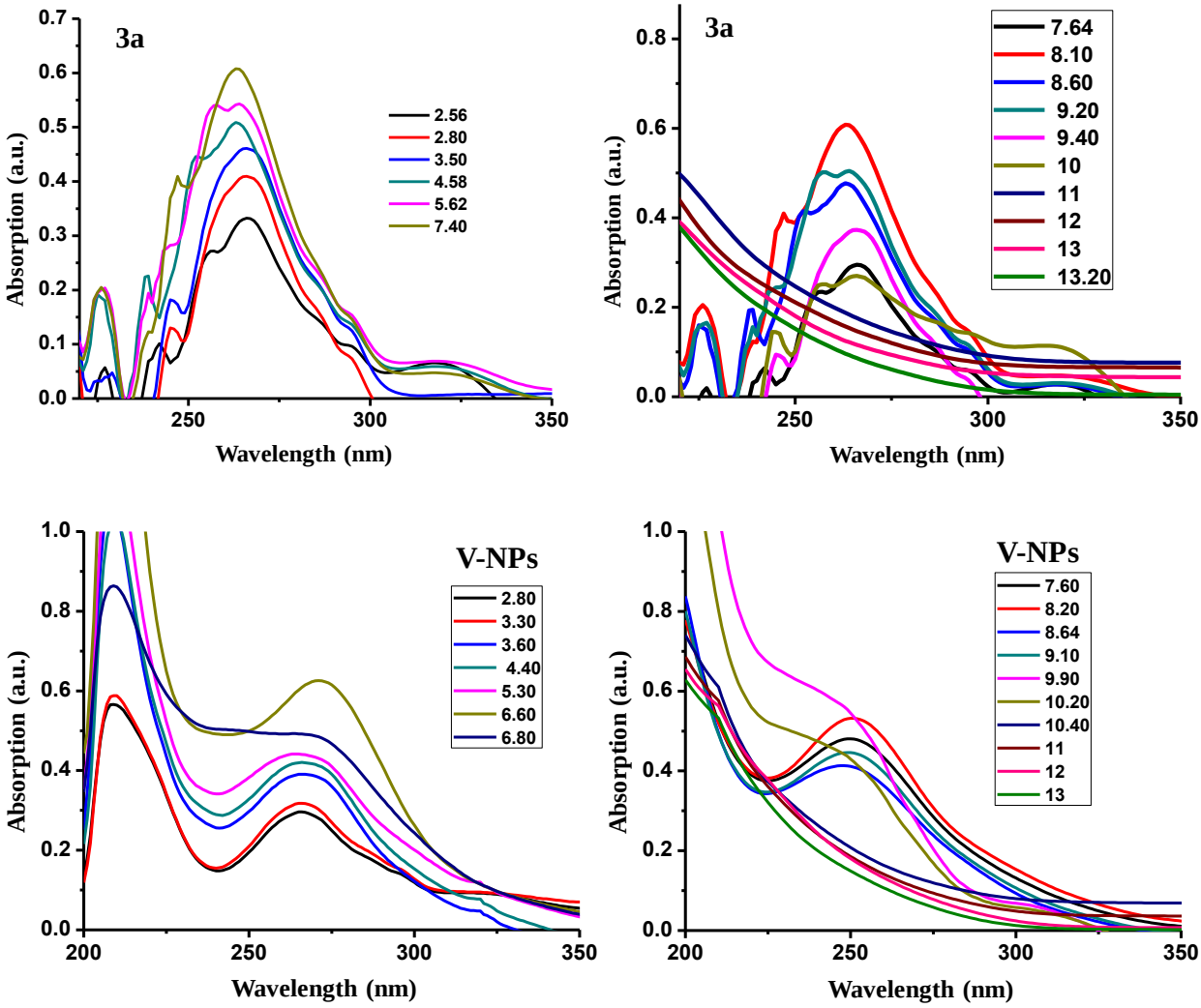

Fig. S16: The absorption intensities of 3a and V-NPs as functions of pH values.

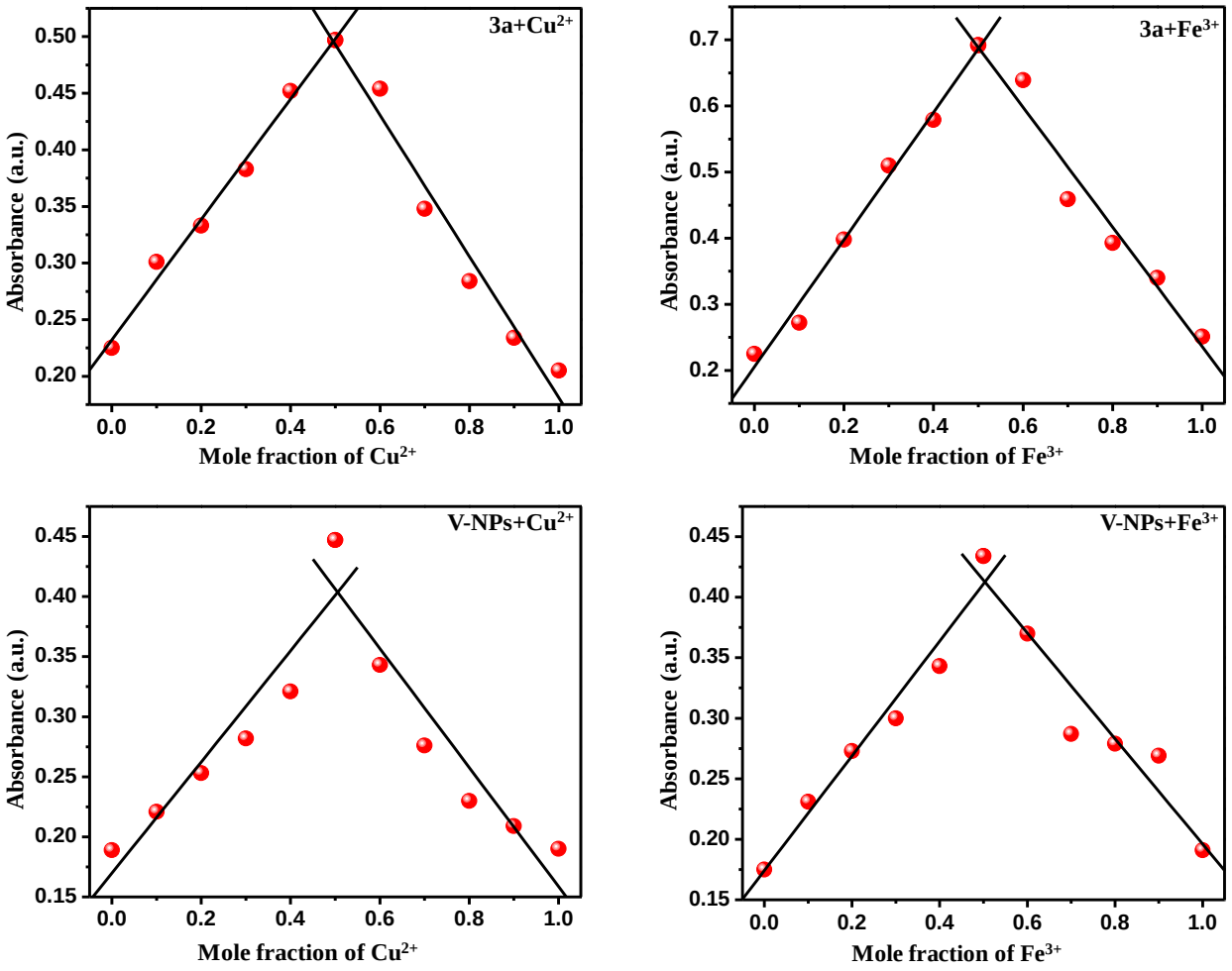

Fig. S17: Job's plots for the complexation of 3a and V-NPs with Cu^{2+} and Fe^{3+}ions in methanol showing 1:1 stoichiometry

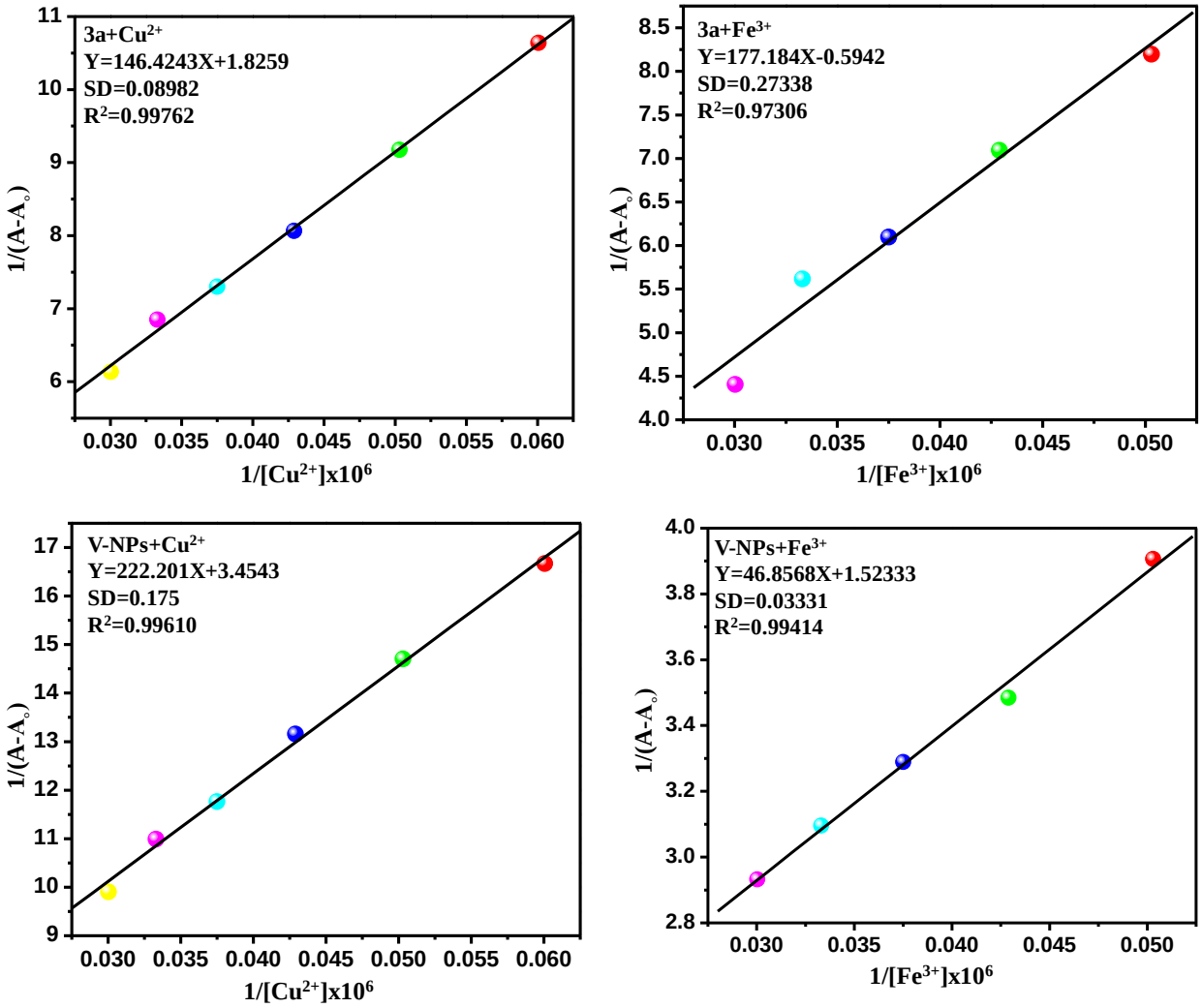

Fig. S18: B-H plots for the compounds 3a and V-NPs with Cu^{2+} and Fe^{3+} ions at 269 nm

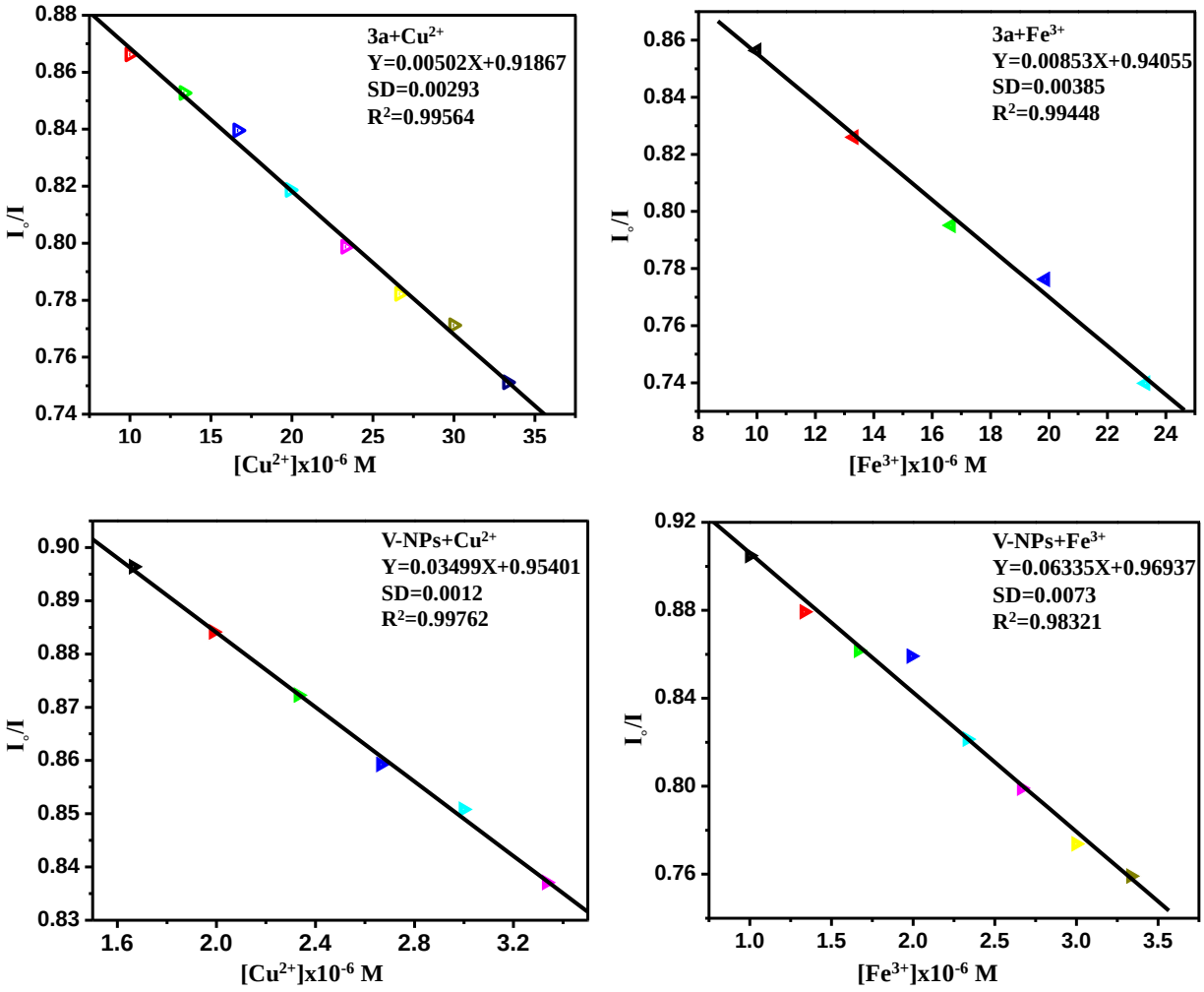

Fig. S19: LOD plots of 3a and V-NPs for Cu^{2+} and Fe^{3+}ions at 269 nm

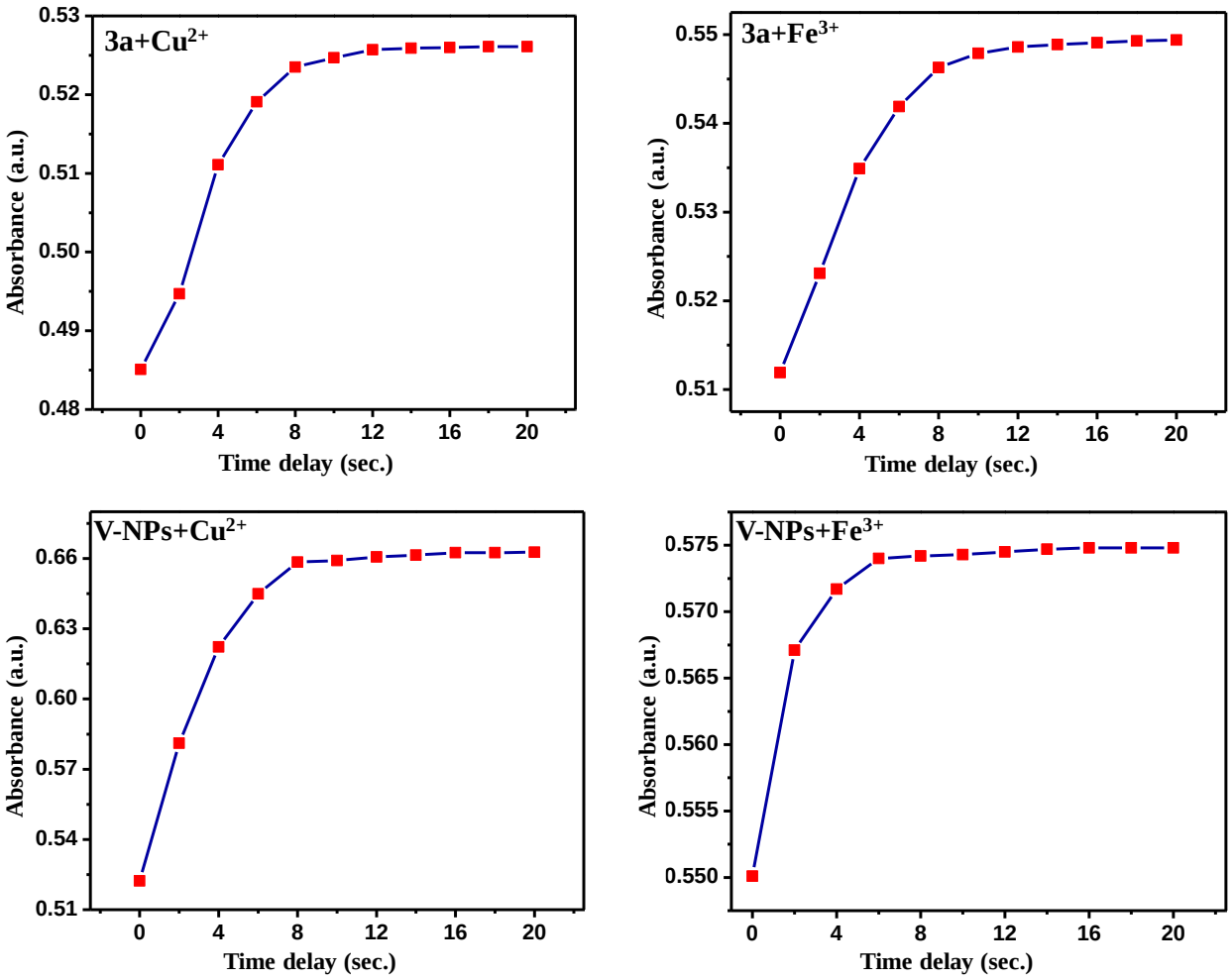

Fig. S20: Response time studies of 3a and V-NPs in the presence of Cu^{2+} and Fe^{3+} ions (50 µM)

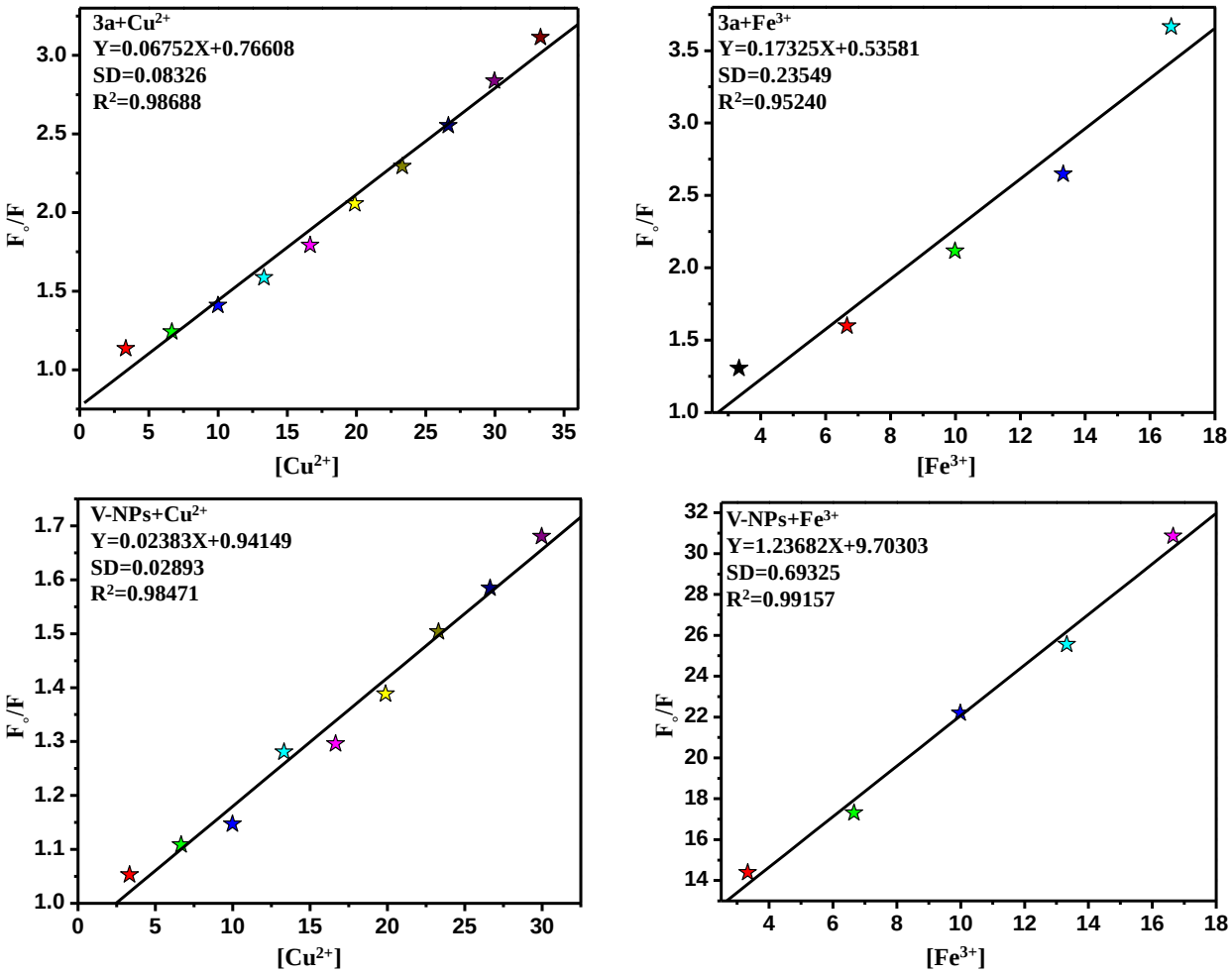

Fig. S21: Stern-Volmer plots for the compounds 3a and V-NPs at 527 nm

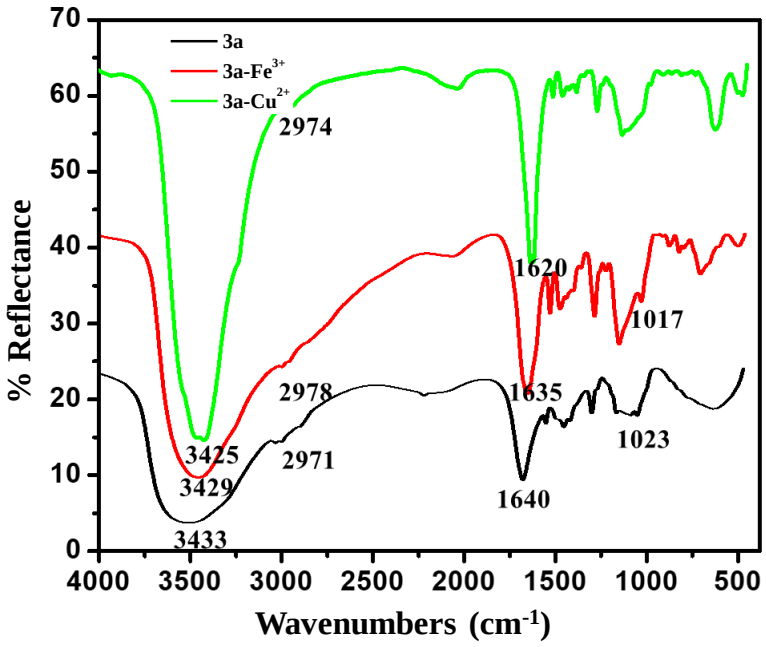

Fig. S22: FT-IR spectra of 3a, 3a+Cu^{2+} and 3a+Fe^{3+}