processes

MDPI

Supplementary Materials

A Comparative Study between Bimetallic Iron@copper Nanoparticles with Iron and Copper Nanoparticles Synthesized Using a Bioflocculant: Their Applications and Biosafety

Nkosinathi Goodman Dlamini [1,*], Albertus Kotze Basson [1] and Viswanadha Srirama Rajasekhar Pullabhotla [2,*]

[1] Department of Biochemistry and Microbiology, University of Zululand, Private Bag X1001, KwaDlangezwa 3886, South Africa; BassonA@unizulu.ac.za

[2] Department of Chemistry, University of Zululand, Private Bag X1001, KwaDlangezwa 3886, South Africa

* Correspondence: nathidlamini03@gmail.com (N.G.D.); PullabhotlaV@unizulu.ac.za (V.S.R.P.); Tel.: +27-35-902-6155 (V.S.R.P.)

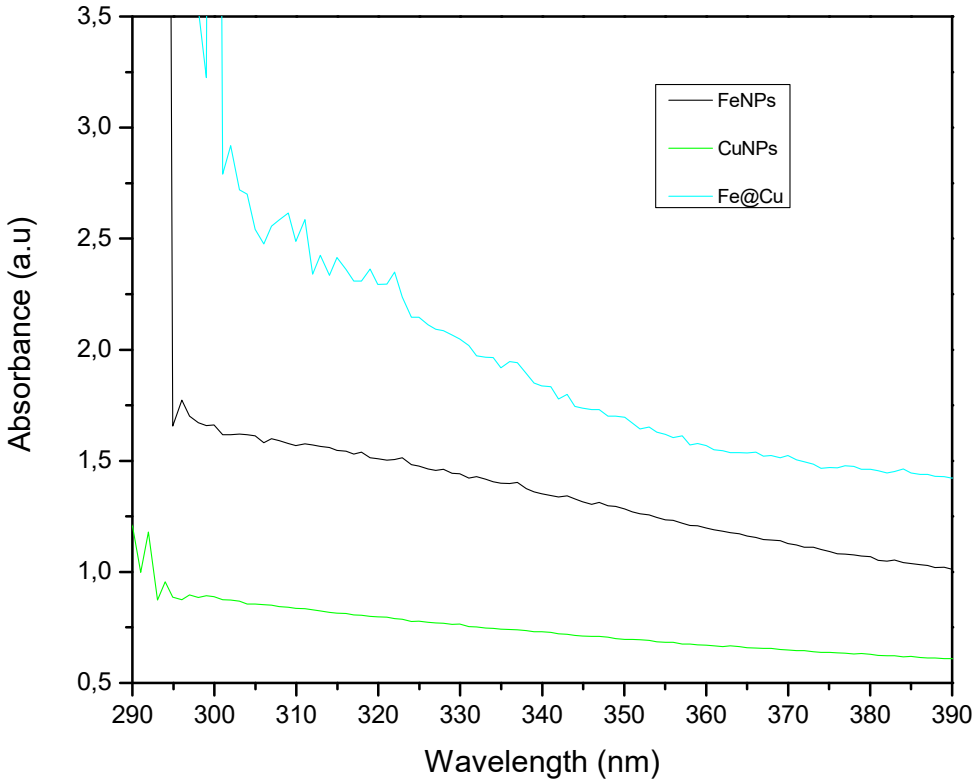


Figure S1. UV–vis spectra of the as-synthesize FeNPs, CuNPs and Fe@Cu core-shell.

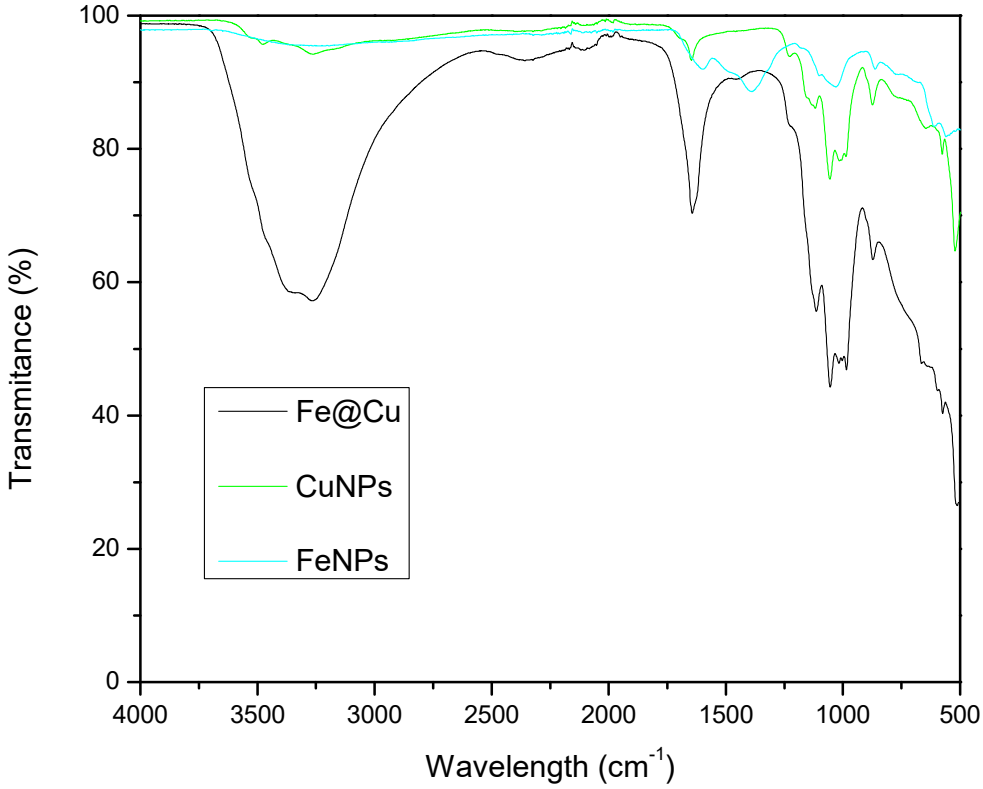
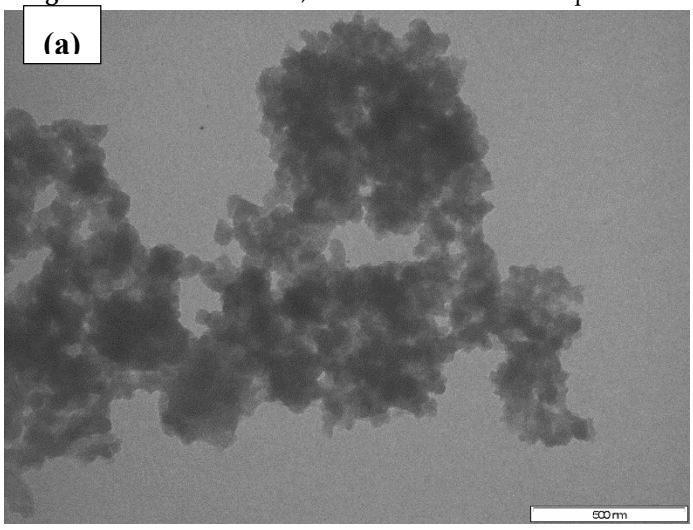


Figure S2. FT-IR of FeNPs, CuNPs and Fe@Cu nanoparticles.



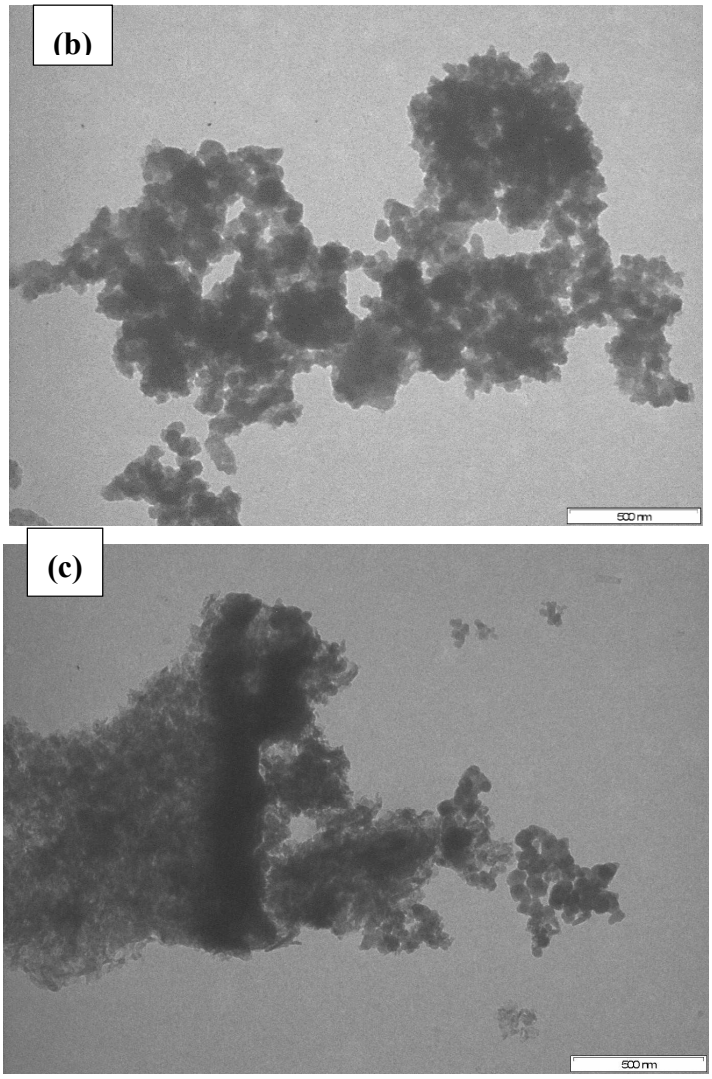
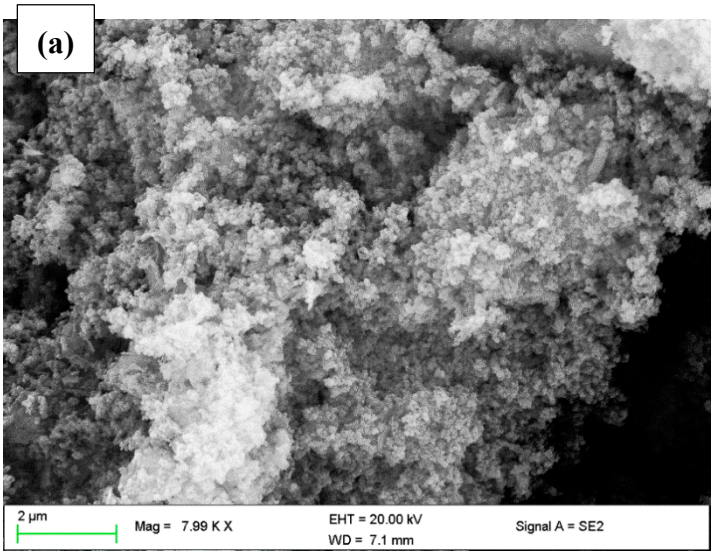


Figure S3. TEM image of FeNPs (a), CuNPs (b) and Fe@Cu nanoparticles.



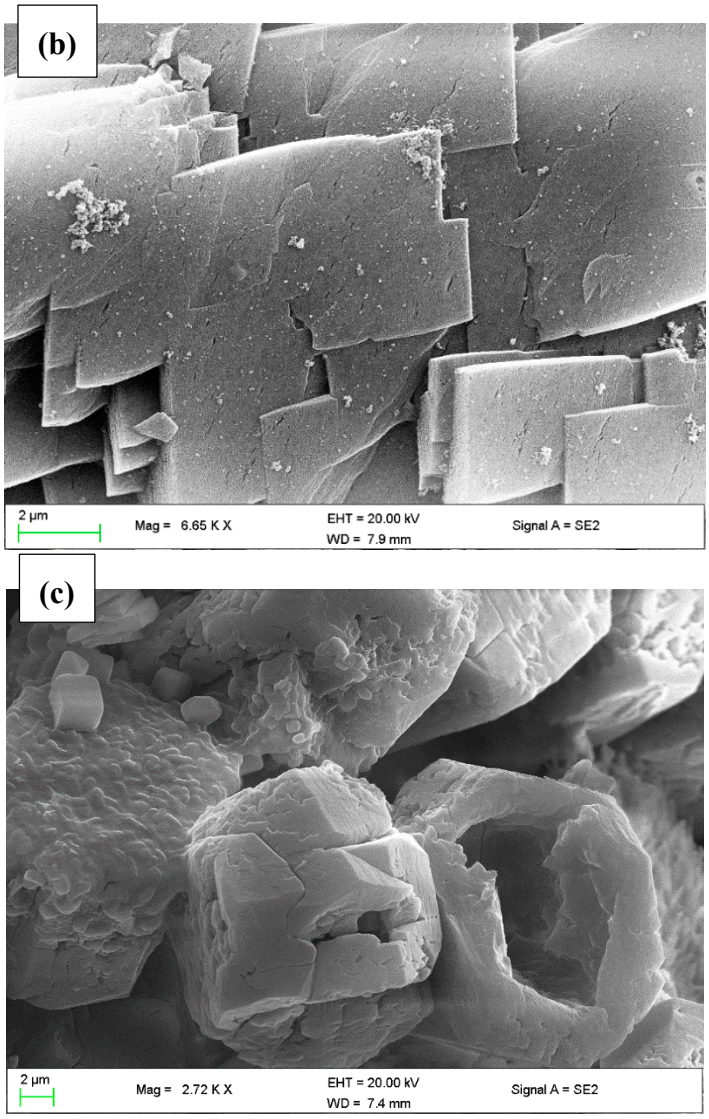


Figure S4. SEM image of FeNPs (a), CuNPs (b) and Fe@Cu nanoparticles (c).

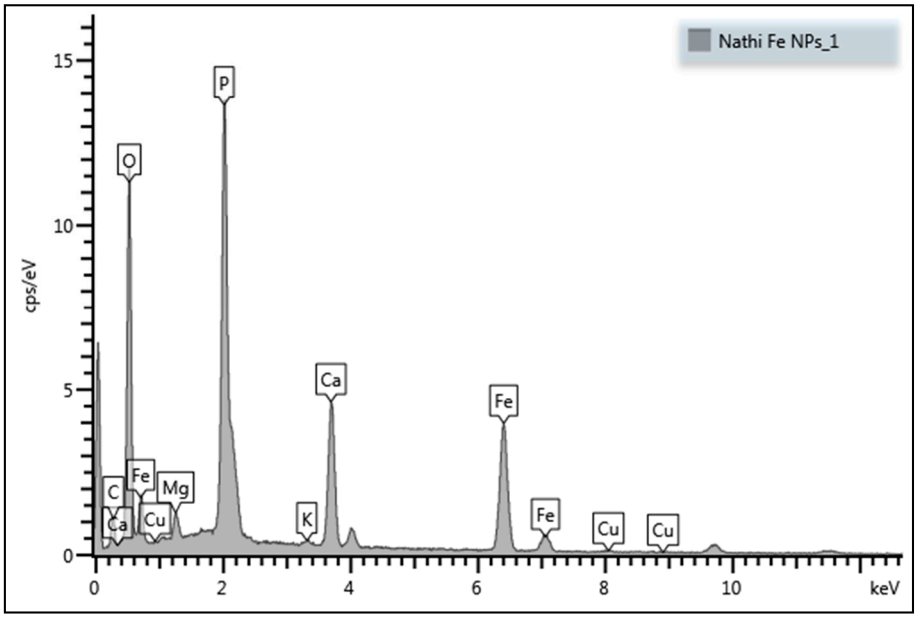


Figure S5. SEM-EDX spectrum showing elements present in the as-synthesised Fe nanoparticles.

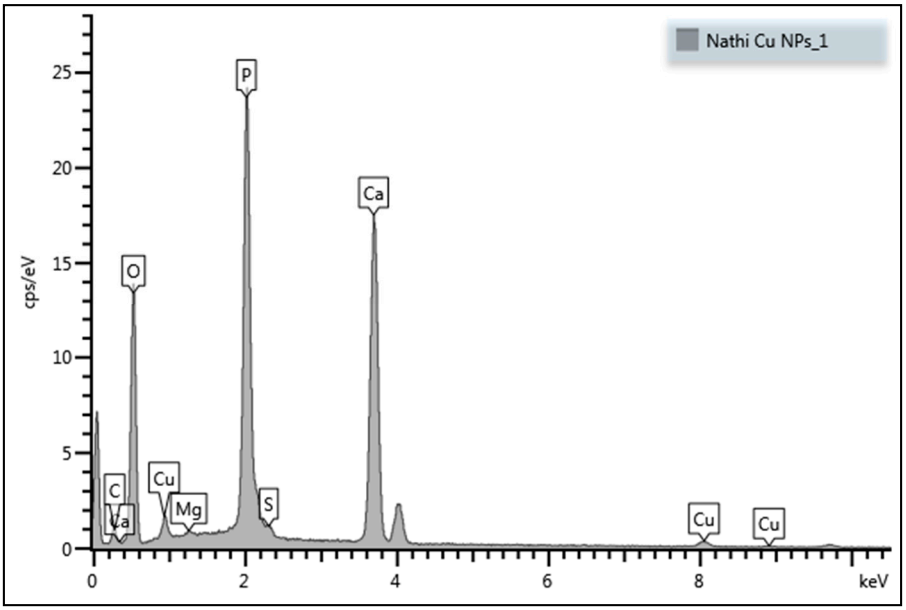


Figure S6. SEM-EDX spectrum showing elements present in the as-synthesised Cu nanoparticles.

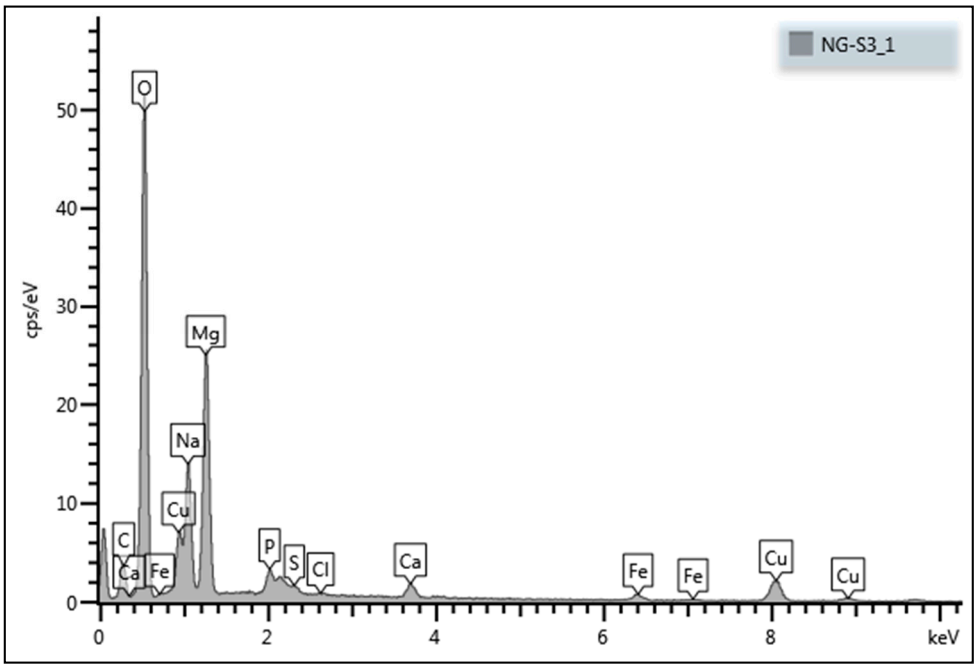
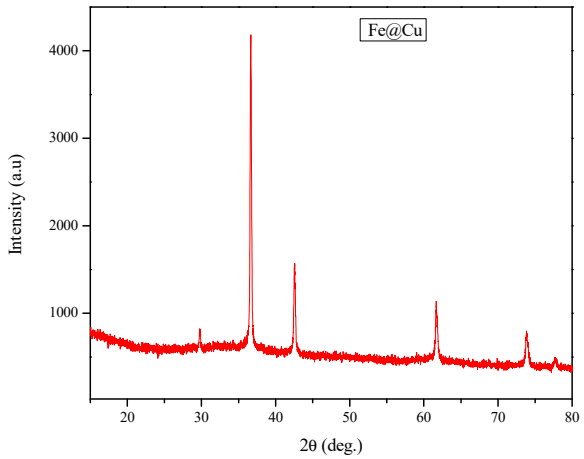


Figure S7. SEM-EDX spectrum showing elements present in the as-synthesised Fe@Cu nanoparticles.

(a)



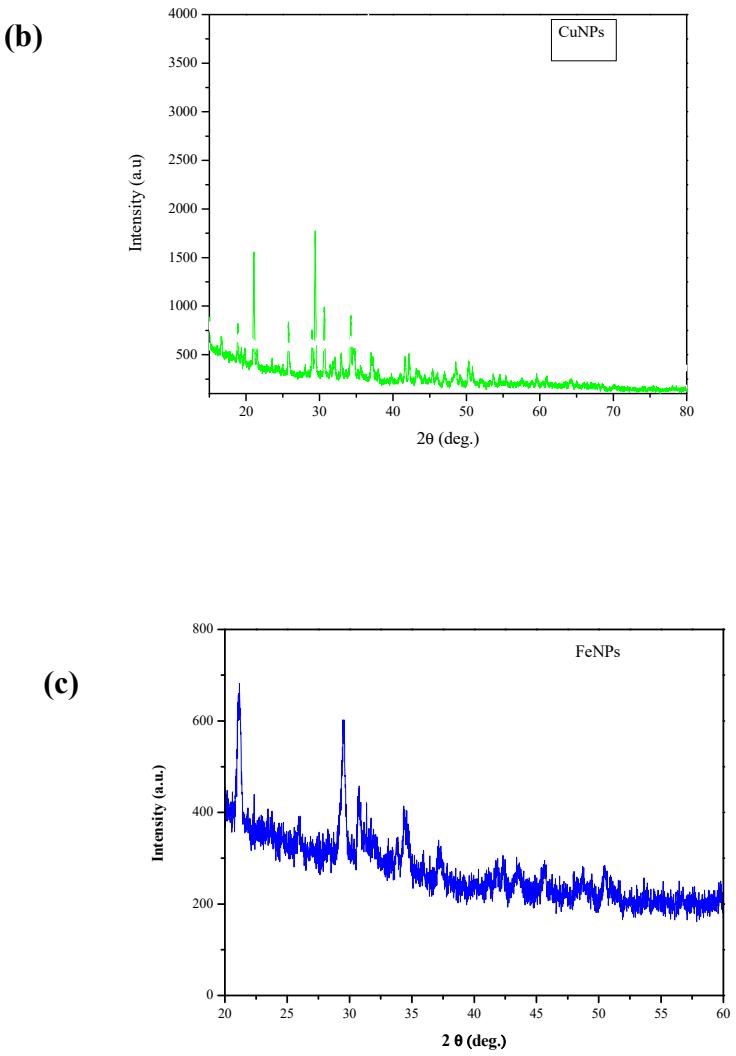
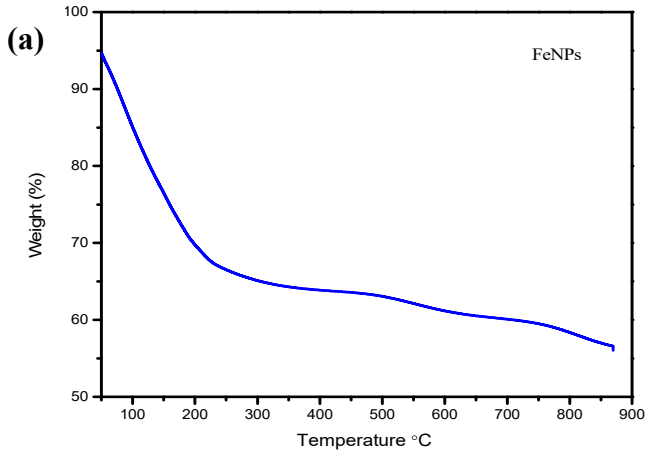


Figure S8. X-ray diffractograms of Fe@Cu (a), CuNPs (b) and FeNPs (c).



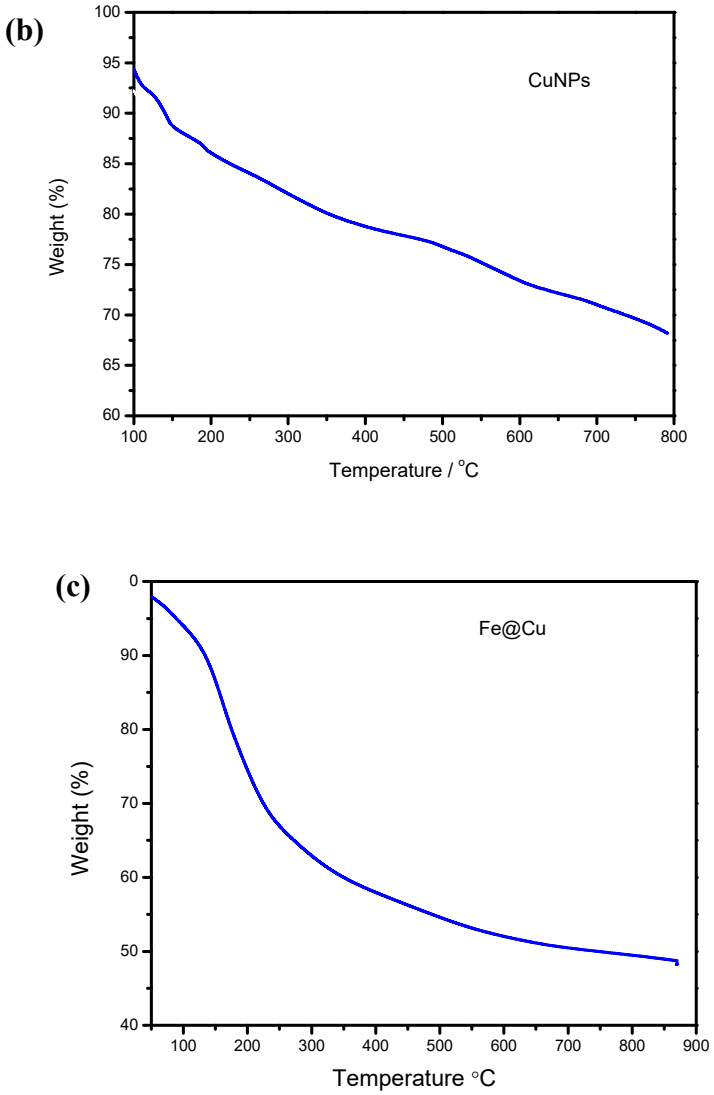


Figure S9. Thermogravimetric analysis of (a) FeNPs, (b) CuNPs and (c) Fe@Cu nanoparticles.