Electrochemical Sensing of Free Radical Antioxidant Diphenylamine cation ($DPAH^{\cdot+}$) with Carbon Interlaced Nanoflake-Assembled $Mg_xNi_{9-x}S_8$ Microspheres

Raja Nehru,[a,c] Raghavan Chinnambedu Murugesan,[b] Sheng-Ming Chen,[a]* and Raman Sarkar[c,d]*

[a]Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, Taipei 10608, Taiwan

[b]Aston Institute of Photonic Technology, Aston university, Birmingham, B4 7ET, UK.

[C]Institute of Physics, Academia Sinica, Taipei 10617, Taiwan

[d]Centre for Condensed Matter Sciences, National Taiwan University, Taipei 10617, Taiwan.

Corresponding Author

*E-mail: smchen78@ms15.hinet.net,sankarndf@gmail.com.

Supporting information

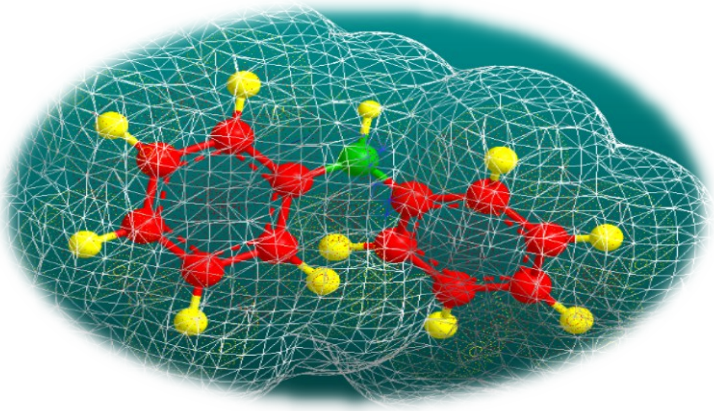

Fig.*S1* The 3D structural view of diphenylamine (DPA).

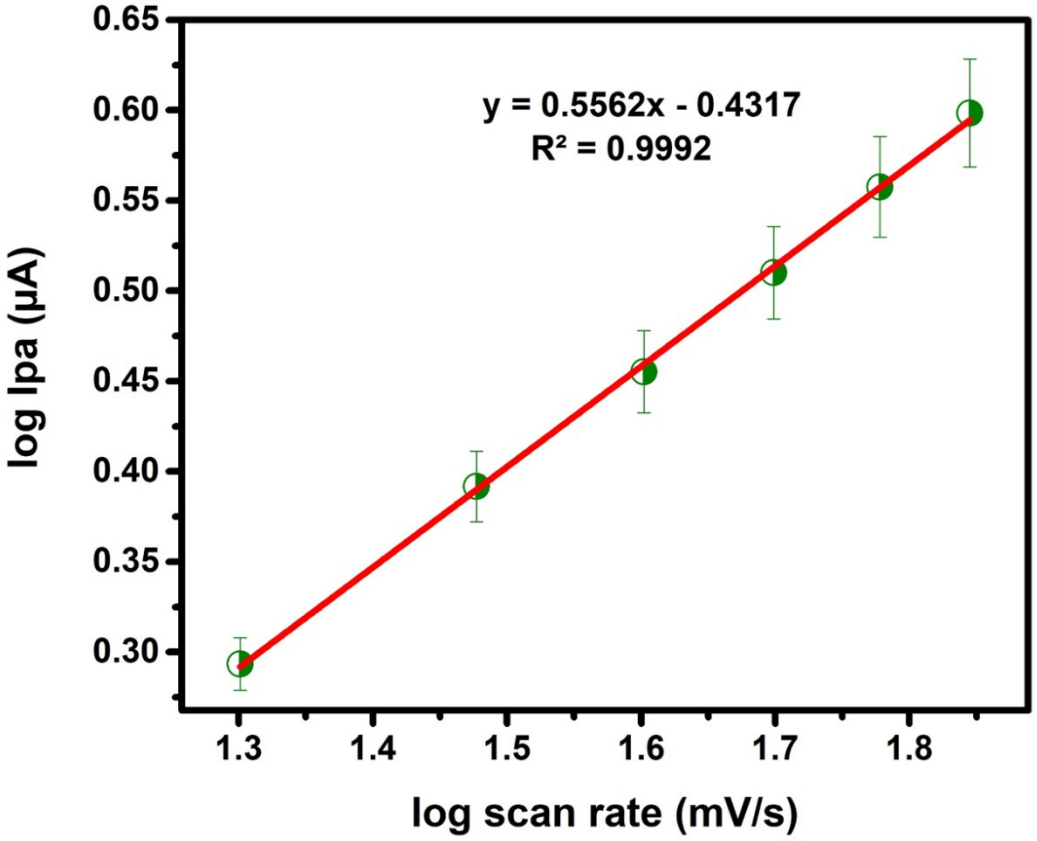

Fig.*S2* Linear relation between log Ipa (µA) vs. log scan rate (mV/s).

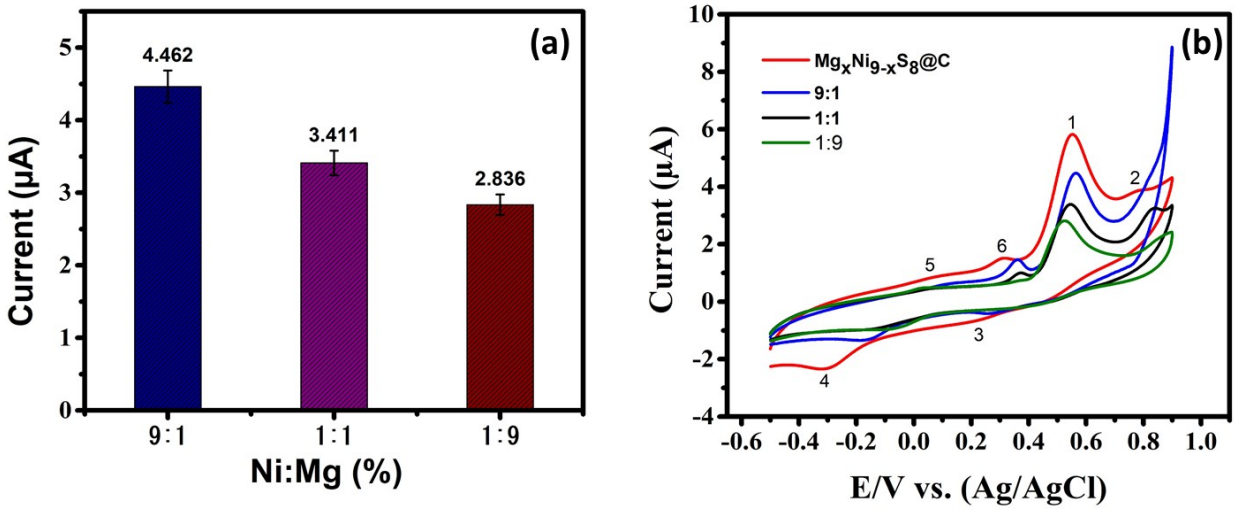

Fig.*S3* (a). Different molar ratio comparison of Ni and Mg in the presence of 100μM of DPA at the scan rate of 50mV/s. (b). Comparison of $Mg_xNi_{9-x}S_8$ and $Mg_xNi_{9-x}S_8$@C with different ratio of Ni and Mg in the presence of 100μM of DPA at the scan rate of 50 mV/s.

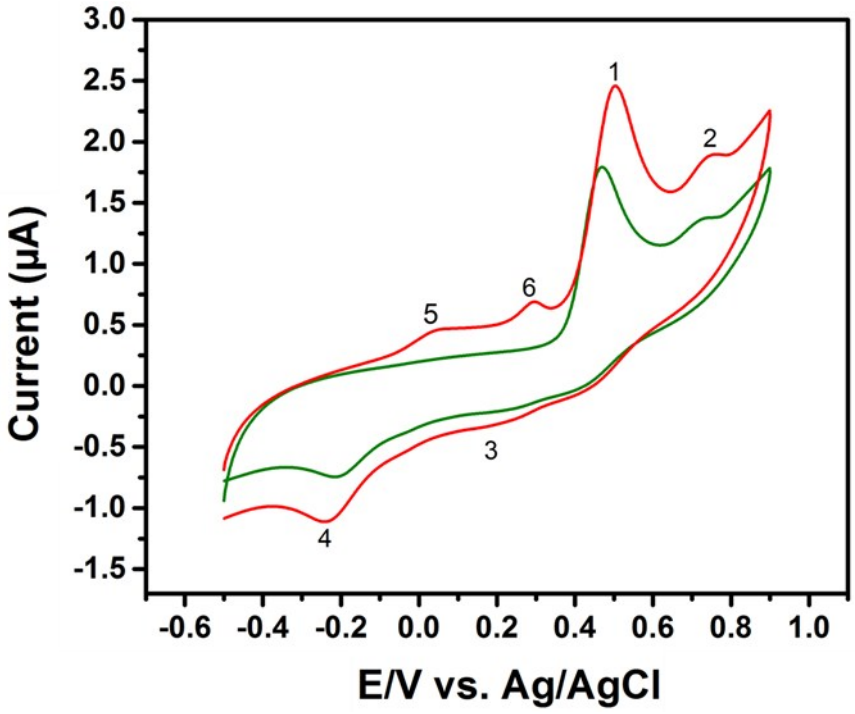

Fig.*S4.* The CV of $Mg_xNi_{9-x}S_8$@C in the presence of DPA at the scan rate of 30mV/s.

Table *S1* Determination of spiked DPA in fruit extract samples using $Mg_xNi_{9-x}S_8$ modified electrode

sample	Added(µM)	Found(µM)	Recovery (%)
Fruit extract (pear)	0.5	0.48	96
	0.6	0.59	98.3
	0.7	0.698	99.8

*Standard addition method