

1 **Supporting information for**
2 **Single wall carbon nanotubes-oxide test strip for one-step solid phase extraction**
3 **of triazine and ultrafast detection using surface enhanced Raman spectroscopy**

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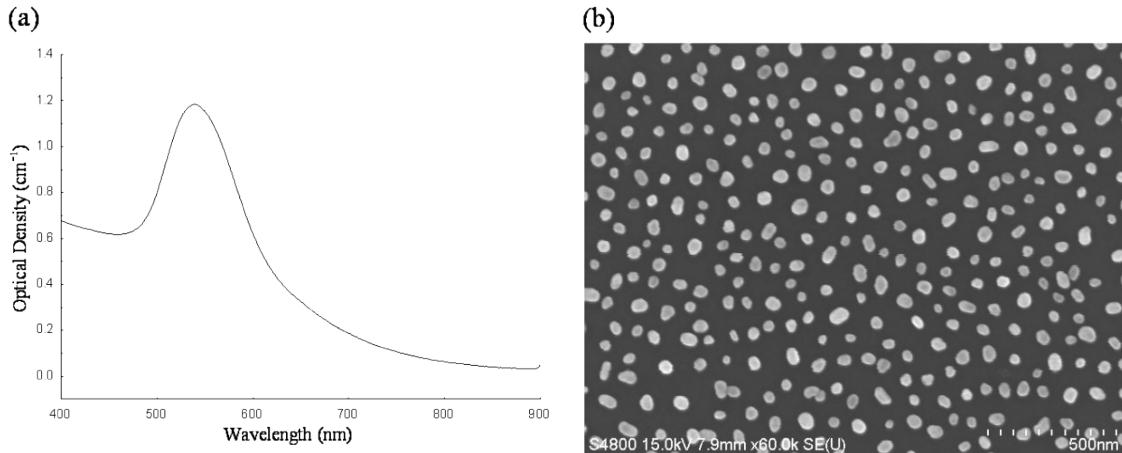
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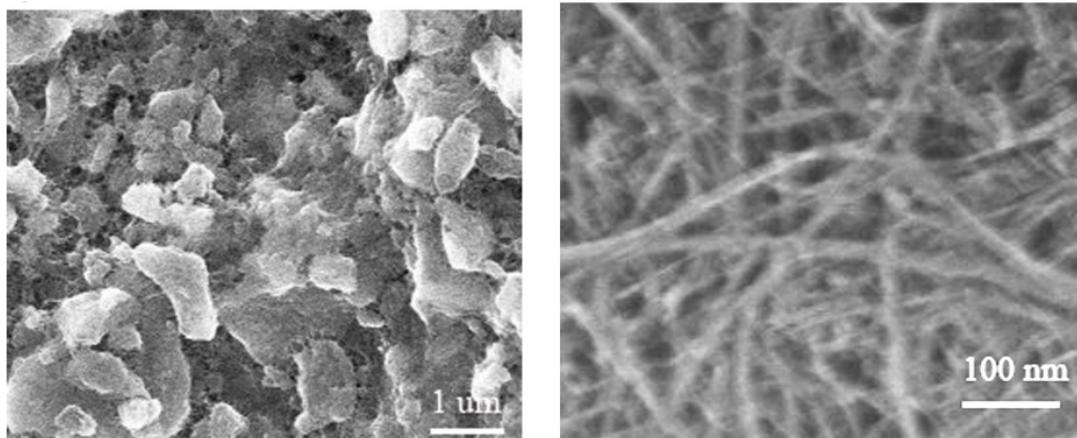
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13 Fig. S1. (a) The UV-Vis absorbance spectrum of gold colloid. (b) Scanning electron
14 microscope (SEM) image of gold nanoparticles with a size of 55 nm.

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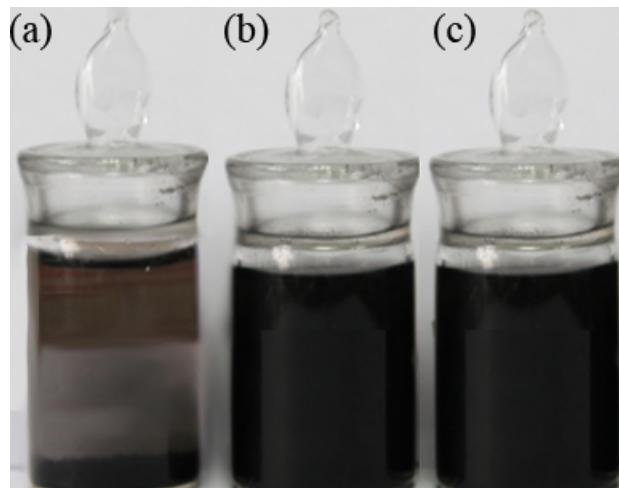


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Fig. S2. SEM images of a SWCNTs-oxide test strip.

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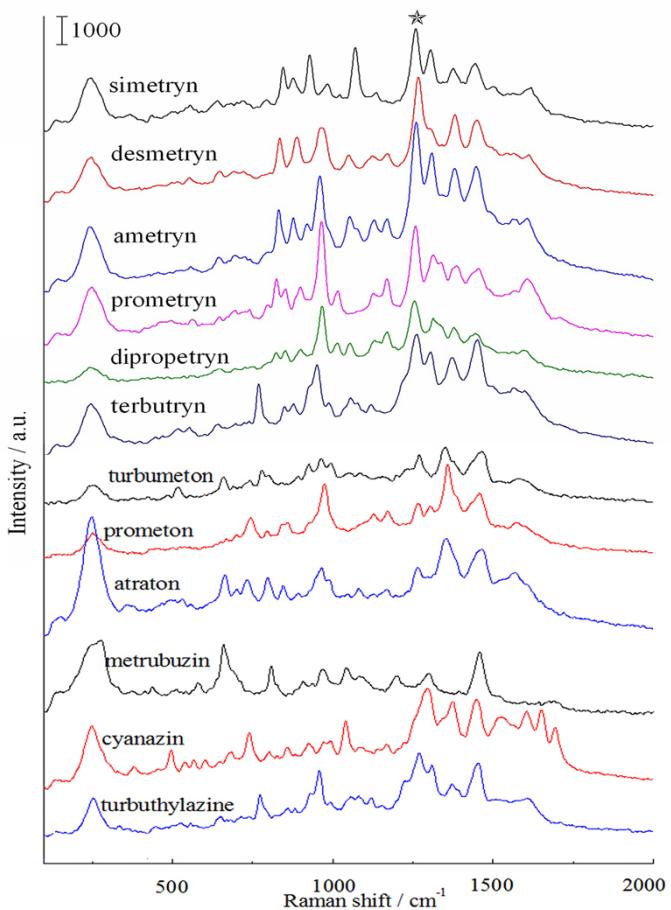
Fig. S3. Pictures of the dispersion of the SWCNTs sample (2 mg) in DMF (12 mL). (a)

20 HCl-treated SWCNTs; (b) HCl-H₂O₂-treated SWCNTs; (c) HNO₃-treated SWCNTS.

21 Samples were dispersed in DMF using sonication for 10 min.

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25 Fig. S4 SERS spectra of twelve triazines on the Si/SiO₂ substrate (simetryn,
 26 desmetryn, ametryn, prometryn, dipropetryn, terbutryny, turbumeton, prometon, atraton,
 27 metribuzin, cyanazine and turbuthylazine, constant concentration, 1000 mg/L, volume,
 28 10 μL, after methanol evaporated, SERS signals were collected with 10 μL
 29 concentrated gold colloid).

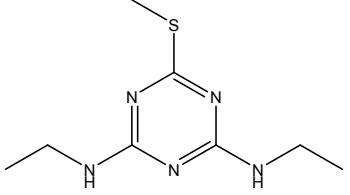
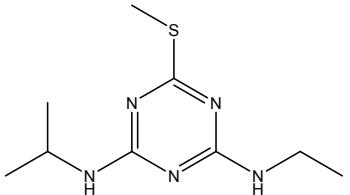
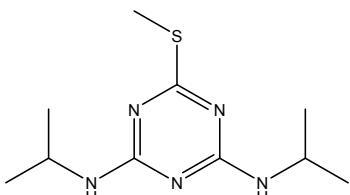
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31 **Table S2** Comparision of the published methods with the proposed method in this
 32 work in detection triazine herbicide

Method	Linear range ($\mu\text{g L}^{-1}$)	LOD ($\mu\text{g L}^{-1}$)	Ref.
DWC-MIPs-SPE- HPLC	50–1000	3.2-8.6	1
MAA/TRIM-SPME-GC	100-10000	12.2-34.6	2
SWCNTs-oxide test strips- SPE-SERS	10-300	2.0	This work

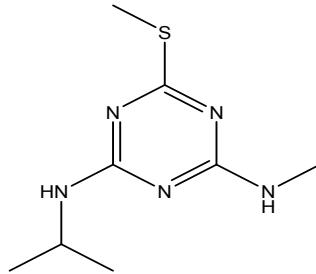
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34 **Table S1** Molecular formula and structural formula of triazine herbicide.

Compound	Molecular formula	Structural formula
Simetryn	C ₈ H ₁₅ N ₅ S	
Ametryn	C ₉ H ₁₇ N ₅ S	
Prometryn	C ₁₀ H ₁₉ N ₅ S	

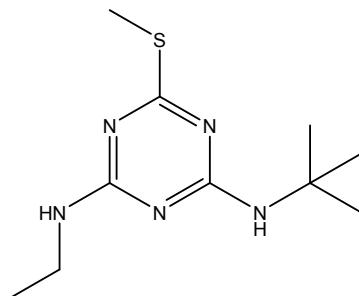
Desmetryn

C₈H₁₅N₅S



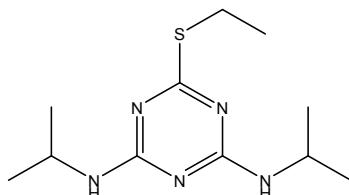
Terbutryn

C₁₀H₁₉N₅S



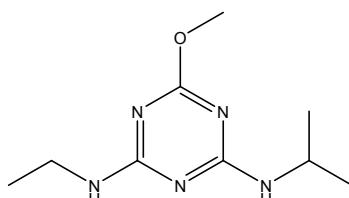
Dipropetryn

C₁₁H₂₁N₅S



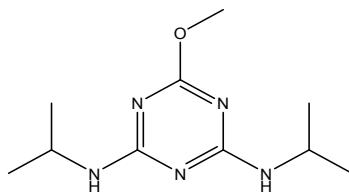
Atraton

C₉H₁₇N₅O



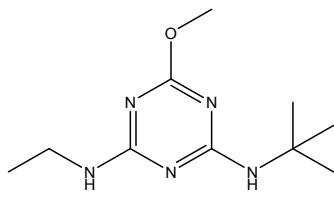
Prometon

C₁₀H₁₉N₅O



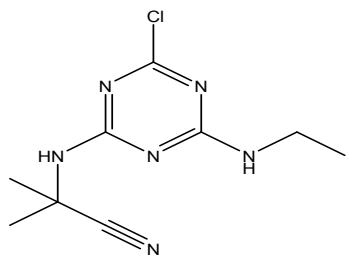
Terbumeton

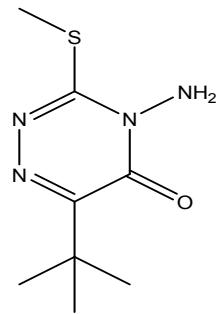
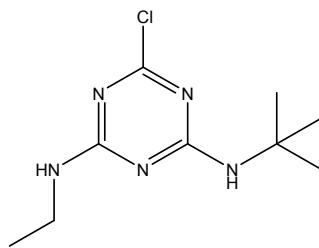
C₁₀H₁₉N₅O



Cyanazine

C₉H₁₃ClN₆



Metribuzin**Terbutylazine**

35 References

- 36 1 S. Xu, H. Lu and L. Chen, Journal of Chromatography A, 2014, 1350, 23-29.
37 2 J. Zeng, J. Chen, L. Chen, Y. Wang, W. Chen, X. Huang and X. Chen, Analytica chimica acta, 2009, 648,
38 194-199.