Electronic Supplementary Material (ESI) for RSC Advances. This journal is © The Royal Society of Chemistry 2020

Supporting Information

Nano-Hydroxyapatite/Polyaniline Composite as an Efficient Sorbent for Sensitive Determination of the Polycyclic Aromatic Hydrocarbons in the Air by the Needle Trap Device

Ali Akbar Alinaghi Langari¹, Saber Alizadeh ², Shiva Soury³, Ali Firoozichahak ^{4*}, Davood Nematollahi ², Parsa Mohammad Alizadeh¹, Nasim Sanaei⁵

- ¹ Student Research Committee, school of public health, Bam University of medical sciences, Bam, Iran
- ² Department of Chemistry, Bu-Ali-Sina University, Hamedan, Iran.
- ³Department of Occupational Health Engineering, School of Public Health, Ilam University of Medical Sciences, Ilam, Iran
- ⁴ Department of Occupational Health, Faculty of Health, Social Determinants of Health Research Center, Gonabad University of Medical Science, Gonabad, Iran.
- ⁵Center of Excellence for Occupational Health, Occupational Health and Safety Research Center, School of Public Health, Hamadan University of Medical Sciences, Hamadan, Iran

Table S1: List of the abbreviations

SPME	Solid Phase Microextraction	
NTD	Needle Trap Device	
PAHs	Polycyclic Aromatic Hydrocarbons	
LOD	Limit of Detection	
LOQ	Limit of Quantitation	
RSD	Relative Standard Deviation	
BTV	Breakthrough Volume	
FE-SEM	Field-Emission Scanning Electron Microscopy	
XRD	X-ray Diffraction	
FT-IR	Fourier-Transform Infrared Spectroscopy	
Nano-HA/PANI	Nano-Hydroxyapatite/Poly-Aniline	

Table S2: List of the Units

Parameters	Unit of Measure
Desorption Time	°C
Desorption Temperature	min
Breakthrough Volume	mL
Carryover Effect	Percentage (%)
Repeatability	Relative Standard Deviation Percentage
Reproduction	Relative Standard Deviation Percentage
Limit of Detection	ng.mL ⁻¹
Limit of Quantitation	ng.mL ⁻¹
Concentration	mg.m ⁻³

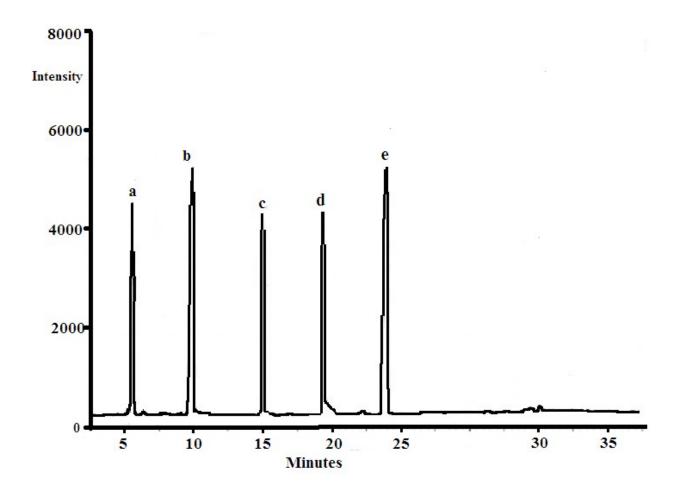


Figure S1. Chromatogram of PAHs compounds from NTD: PANI@HA. a) Naphthalene, b) Phenanthrene, c) Fluoranthene, d) Benzo[a]anthracene, and e) Benzo[a]pyrene.

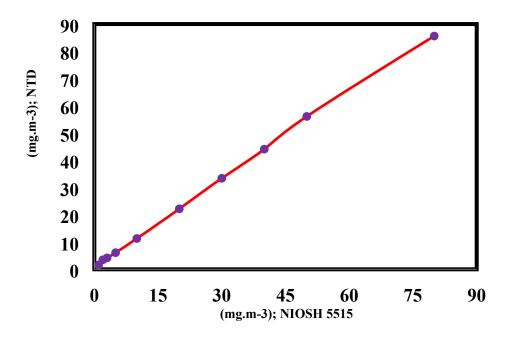


Figure S2. Comparison of the result between the NTD packed with PANI@HA and XAD-2 sorbent tube for the sampling of the benzo[a]pyrene