Electronic Supplementary information for

Direct determination of trace mercury and cadmium in foods by sequential electrothermal vaporization atomic fluorescence spectrometry using tungsten and gold coil traps

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Experimental

Instrumentation. Fig. S1 shows the full picture of the Hg-Cd analyzer. In Fig. S2, the Hg-vaporizer is also the on-line ashing unit for Cd analysis in food samples, where the quartz tube with an air gas line covered by electrical heating Ni-Cr coils connects to the catalytic oxidation tube. In Fig. S3, the catalytic oxidation tube is filled with the catalysts made of $KMnO_4$, Mn_3O_4, V_2O_5 and CaO to decompose the organic gas and smoke from the sample oxidation, as well as absorb halogen and sulfur oxides in smoke at 600 °C - 700 °C to ensure the Hg^0 export. The sampling boat (Fig. S4) comprises of porous carbon material, whose cost can be controlled within 1 dollar. We have proved that different boats have no influence on accurate and stable measurement when changing sampling boats. So, the present sampling boat can satisfy the demand of the solid sampling instrument.

Supplementary data

Figure S1 The full picture of the solid sampling Hg-Cd analyzer.

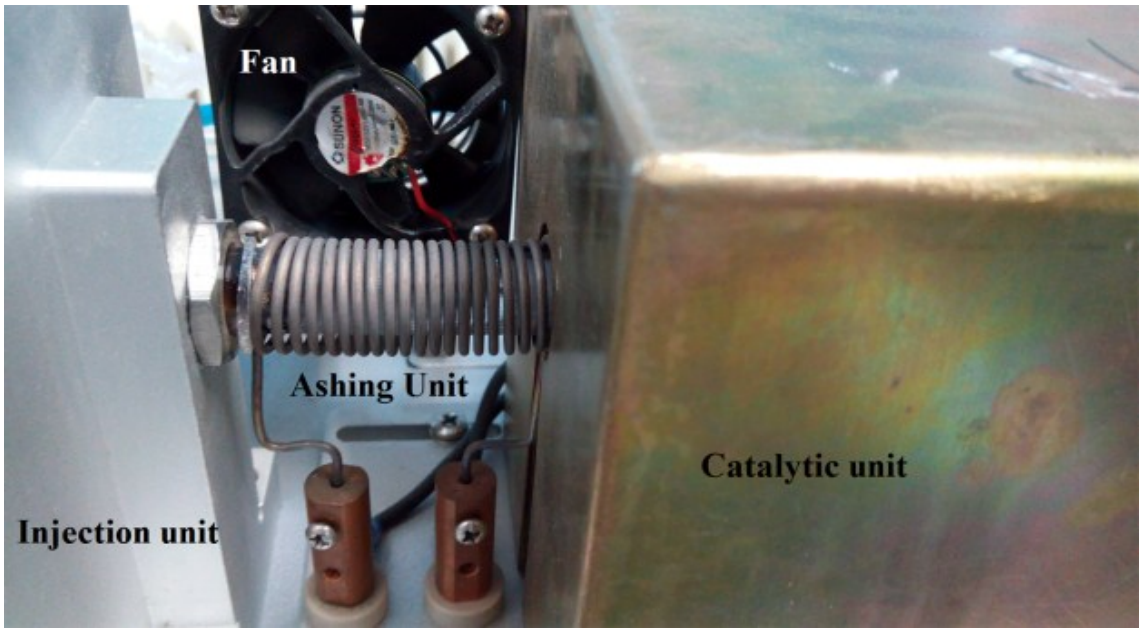


Figure S2 The picture of Hg-vaporizer (ashing unit) of the solid sampling Hg-Cd analyzer.

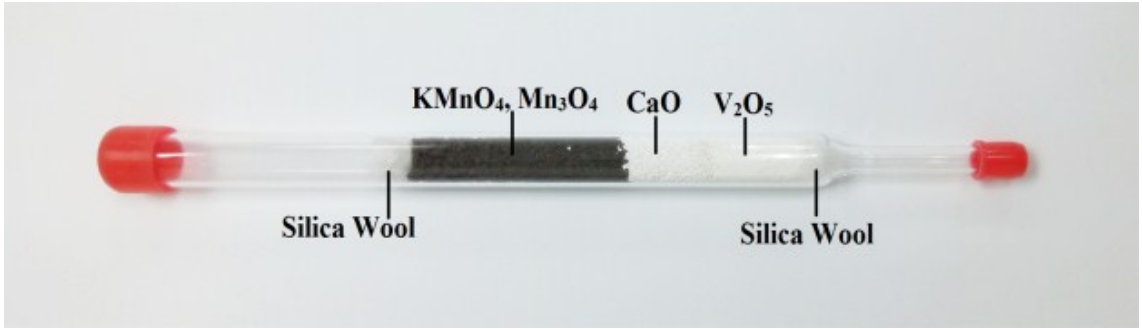
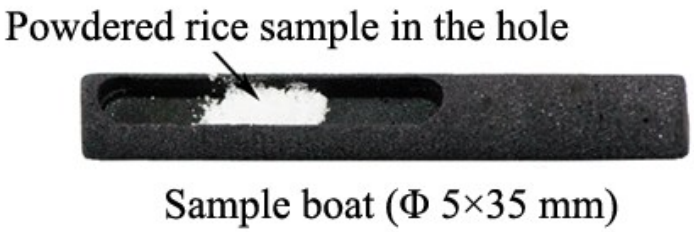


Figure S3 The picture of the catalytic oxidation tube.



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39 **Figure S4 The picture of the sampling boat.**