

Supplementary Information

Cost-Effective Foam-Based Colorimetric Sensor for Roadside Testing of Alcohol in Undiluted Saliva

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Table S1. Effect of indicator concentration (n = 6).









































Concentration of $K_2Cr_2O_7$ (molL ⁻¹)	Concentration of alcohol (% v/v)				
	0.00	0.10	0.50	1.00	5.00
Blank)H ₂ O(				
0.01					
0.025					
0.05					
0.075					
0.10					
0.25					
0.50					

Table S2. Effect of sulfuric acid concentration (n = 6).





















Concentration of H_2SO_4 (molL ⁻¹)	Concentration of alcohol (% v/v)				
	0.00	0.10	0.50	1.0	5.0
1.0					
2.5					
5.0					
7.5					

Table S3. Effect of adsorption time (n = 6).


























Adsorption time (min)	Concentration of alcohol (% v/v)				
	0.00	0.10	0.50	1.0	5.0
30					
60					
120					
180					
240					

Table S4. Effect of sample volume the reaction (n = 6).


























Indicator solution: Alcohol (μL)	Concentration of alcohol (% v/v)				
	0.00	0.10	0.50	1.0	5.0
10					
20					
30					
40					
50					

Table S5. Effect of potential interferences on the analytical determination of alcohol (n = 6).

Potential interference	Normal concentration (g/L)	Added concentration (g/L)	Tolerance ratio (fold)	Color of the foam-based colorimetric alcohol sensor
Ammonium nitrate	0.320	524.80	1640	No change
Sodium chloride	0.159	239.10	1500	No change
Potassium Chloride	0.202	222.20	1100	No change
Urea	0.198	198.00	1000	No change
Potassium phosphate	0.260	208.00	800	No change
Ammonium chloride	5.349	288.85	54	No change
Sucrose	3.423	116.38	34	No change
Lactose	3.423	116.38	34	No change
Glucose	1.802	32.44	18	No change
Fructose	1.802	32.44	18	No change
Galactose	1.802	32.44	18	No change
Sodium nitrate	0.690	4.83	7	No change
Ascorbic acid	0.176	0.35	2	No change