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Support information

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Table S1 Main reagents

Reagent	Specification	Manufacturer
1,2-diaminobenzene, OPD	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.
Pyrocatechol	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.
Citric acid	Analytically pure	Chongqing Chuandong Chemical Group Co., Ltd.
DMF	Analytically pure	Chongqing Chuandong Chemical Group Co., Ltd.
Ethylene glycol	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.
DMSO	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.
Formic acid	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.
Acetic acid	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.
Acrylic acid	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.
Butyric acid	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.
Valeric acid	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.
Formaldehyde	Analytically pure	Shanghai Titan Technology Co., Ltd.
Acetaldehyde	Analytically pure	Shanghai Titan Technology Co., Ltd.
1,1-Diethox	Analytically pure	Shanghai Titan Technology Co., Ltd.
Furfural	Analytically pure	Shanghai Titan Technology Co., Ltd.
Butyraldehyde	Analytically pure	Shanghai Titan Technology Co., Ltd.
Valeraldehyde	Analytically pure	Shanghai Titan Technology Co., Ltd.
Methyl alcohol	Analytically pure	Chongqing Chuandong Chemical Group Co., Ltd.
1-Propanol	Analytically pure	Chongqing Chuandong Chemical Group Co., Ltd.
1-Butanol	Analytically pure	Chongqing Chuandong Chemical Group Co., Ltd.
1-Hexanol	Analytically pure	Chongqing Chuandong Chemical Group Co., Ltd.
Ethyl formate	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.
Ethyl acetate	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.

Reagent	Specification	Manufacturer
Ethyl valerate	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.
Ethyl caproate	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.
Ethyl caprylate	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.
Ethyl lactate	Analytically pure	Shanghai Aladdin Biochemical Technology Co., Ltd.

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Table S2 Information on 17 kinds of Wuliangye series Baijiu

No.	Distilled liquor	Alcohol content
1	Jianzhuang Gaoguang	50°
2	Jianzhuang Daguang	50°
3	Wuliangchun	35°
4	Wuliangchun	45°
5	Wuliangchun	50°
6	Dongfangjiaozi	52°
7	Fuguitianxia	52°
8	Wuliangtouqu	52°
9	Mianroujianzhuang	50°
10	Wuliangtequ	52°
11	Wuliangtequ Boutique	52°
12	Wuliangtouqu	52°
13	Wuliangchun Red Packaging	50°
14	Wuliangchun Golden Packaging	50°
15	Wuliangchun Silver Packaging	50°
16	Wuliangye	52°
17	Xinglong Shangpin	52°

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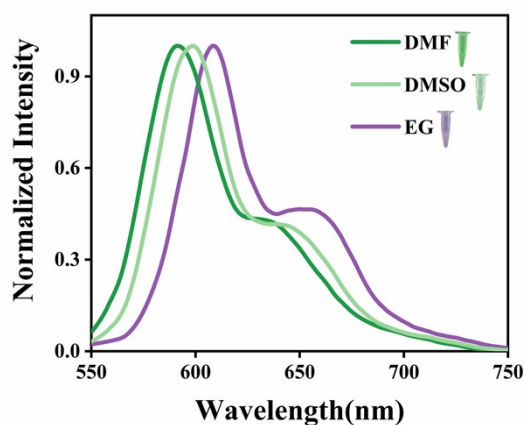
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Table S3 Main instruments and equipment

Instrument name Model	Specifications	Manufacturer
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Instrument name Model	Specifications	Manufacturer
Electronic Balance	EL-204	METTLER TOLEDO Instruments Ltd.
Electric blast drying oven	DHG-9055A	Shanghai Yiheng Scientific Instrument Co., Ltd.
Fluorescence spectrophotometer	FL970	Tianmei Yituo Laboratory Equipment (Shanghai) Co., Ltd.
Fourier Transform Infrared Spectrometer	Nicolet iS50	Thermo Fisher Scientific (China) Co., Ltd.
X-ray photoelectron spectrometer	ESCALAB250Xi	Thermo Fisher Scientific
Ultrapure water machine	Milli-Q Academic	Millipore Corporation of America
Ultrasonic cleaner	GVS-2L	Shenzhen Goway Technology Co., Ltd.
Transient steady-state fluorescence spectrometer	FLS1000	Edinburgh, UK
Transmission electron microscope	JEM-1400PLUS	JEOL Corporation of Japan

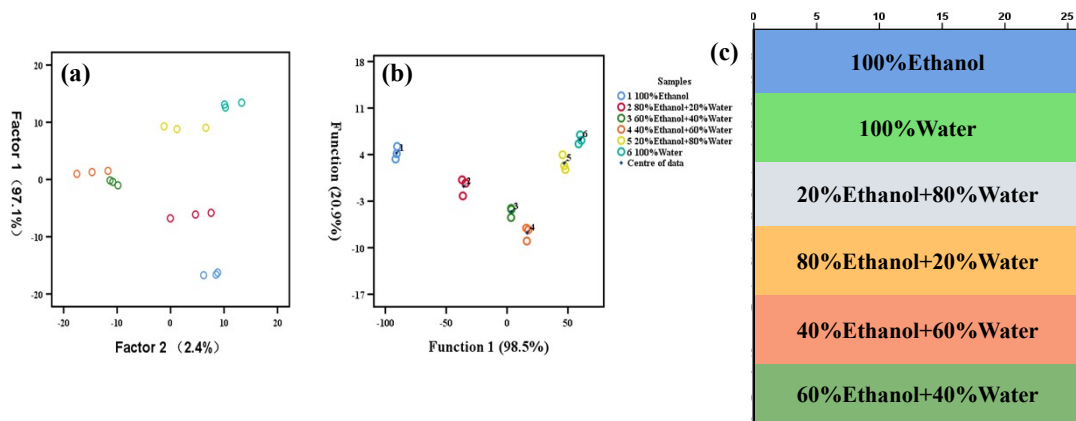
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10 **Fig. S1.** Normalized fluorescence of GQDs in three solvents (DMF, DMSO and EG)

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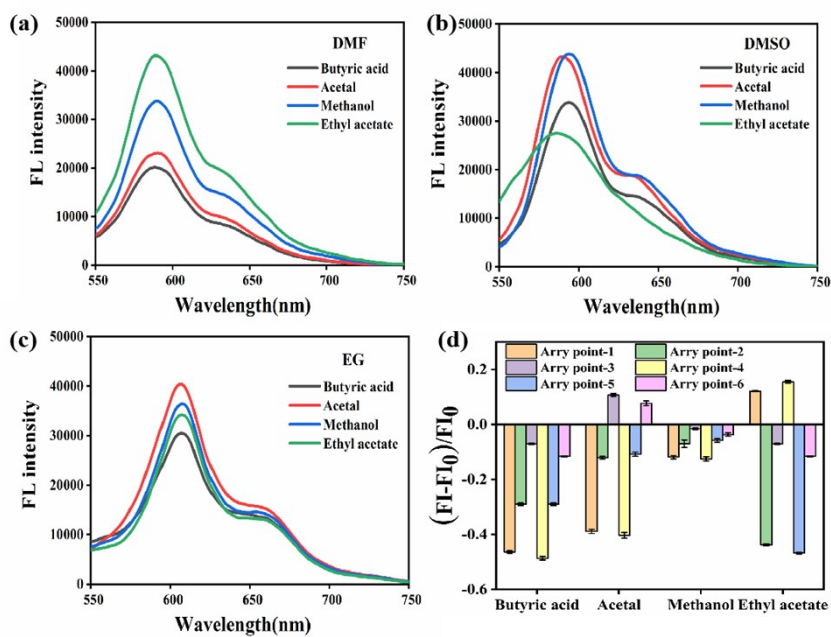
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13 **Fig. S2.**Detection of ethanol-water mixed solutions of different concentrations (a)PCA; (b)LDA;

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(c)HCA

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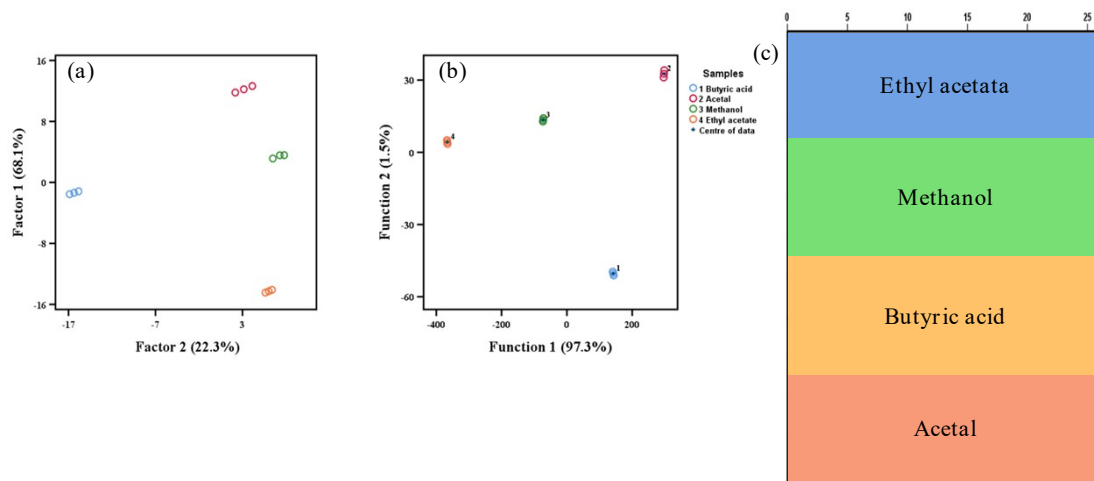


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Fig. S3. Feasibility study of small organic molecule detection

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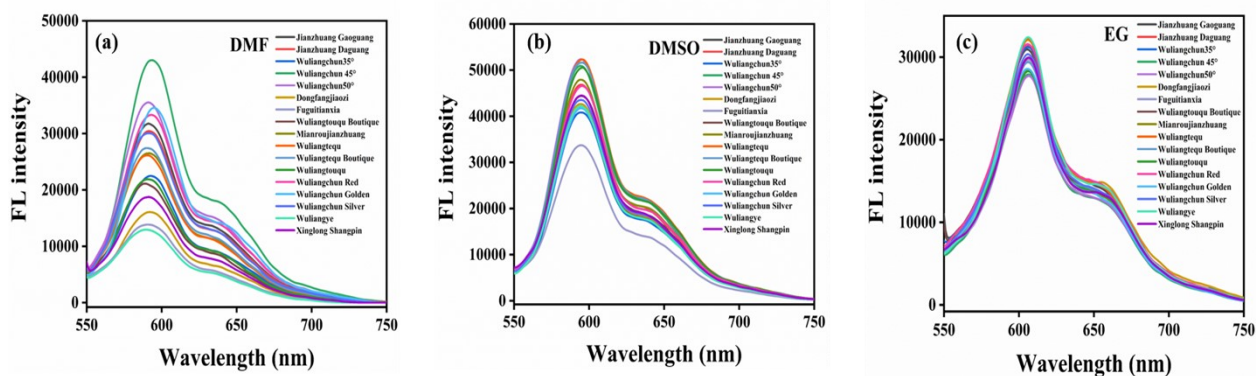


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Fig. S4. Feasibility study of small organic molecule detection

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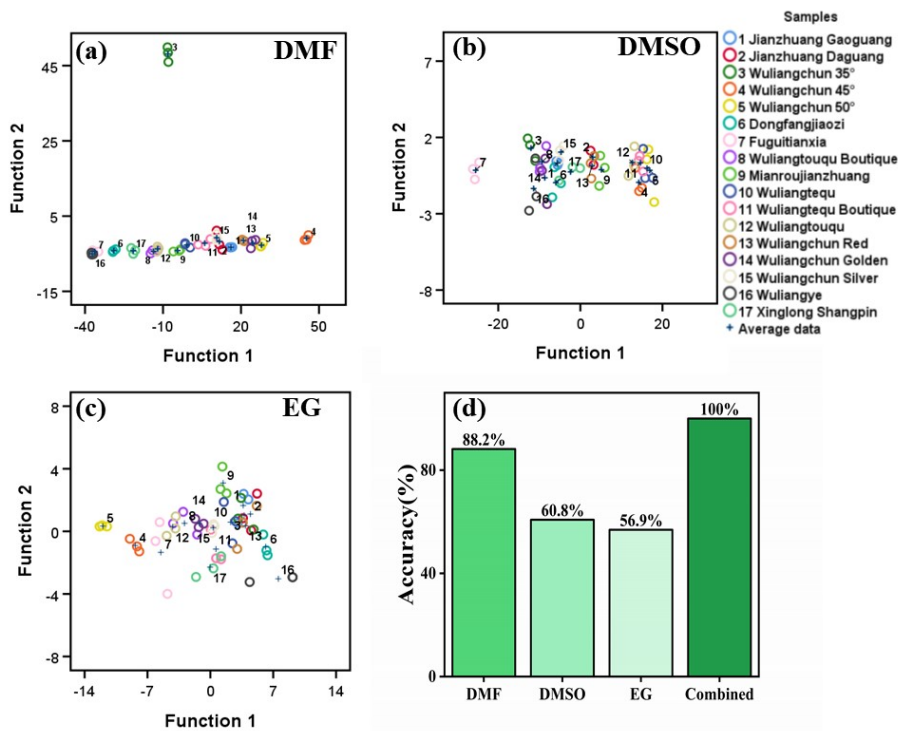
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Fig. S5. Fluorescence spectra of the GQDs after reaction with Wuliangye Baijiu. (a) DMF;

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(b) DMSO; (c) EG

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27 **Fig. S6.** LDA detection graphs with a single solvent array (a) DMF; (b) DMSO; (c) EG; (d)

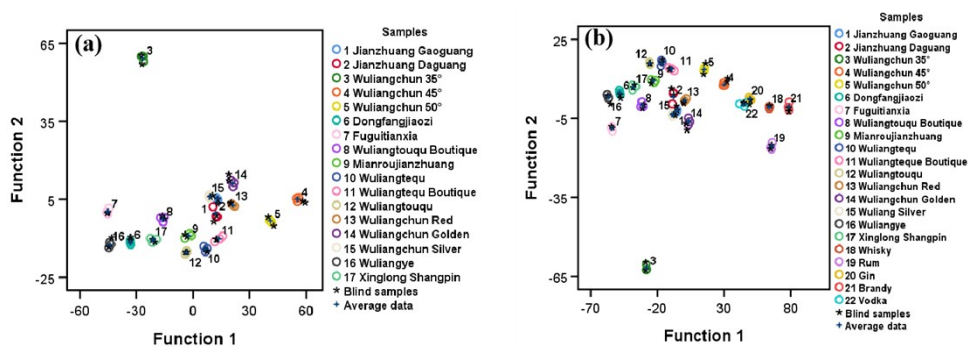
28 detection capability compared to a composite array

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31 **Fig. S7.** LDA analysis chart of 22 distilled spirits

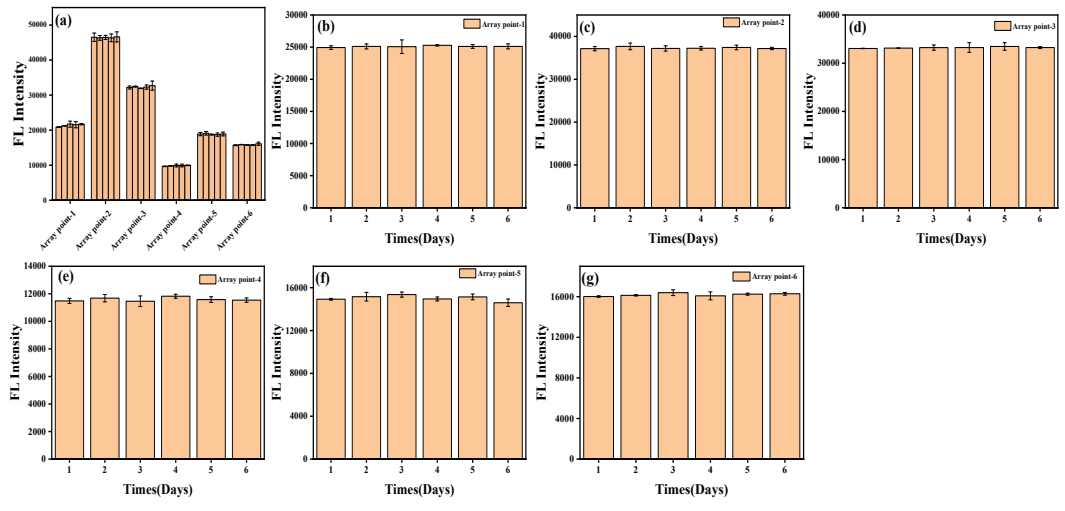
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34 **Fig. S8.** Detection of blind samples (a) Wuliangye Baijiu; (b) 22 distilled spirits

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37 **Fig. S9.**(a)Repeatability detection; Stability (b)Array point-1; (c)Array point-2; (d)Array point-3;

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(e)Array point-4; (f)Array point-5; (g)Array point-6.