

Supporting Information

A colorimetric sensor array for the discrimination of Chinese liquors

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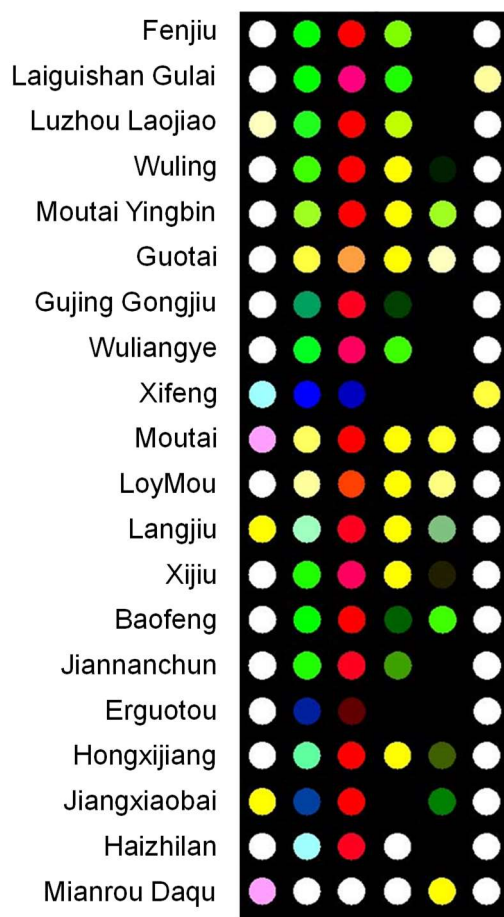


Fig. S1 Color difference maps of the array for all of the investigated Chinese liquors. For purposes of visualization, the color range of the difference maps was expanded from 3 to 8 bits per color (RGB range of 3-10 expanded to 0-255). A full database of the color differences is shown in Tables S1 (For each row, the 18 numbers represent the change in R, G, and B values of the 1×6 array, i.e., after exposure – before exposure). All of the experiments were performed in quintuplicate.

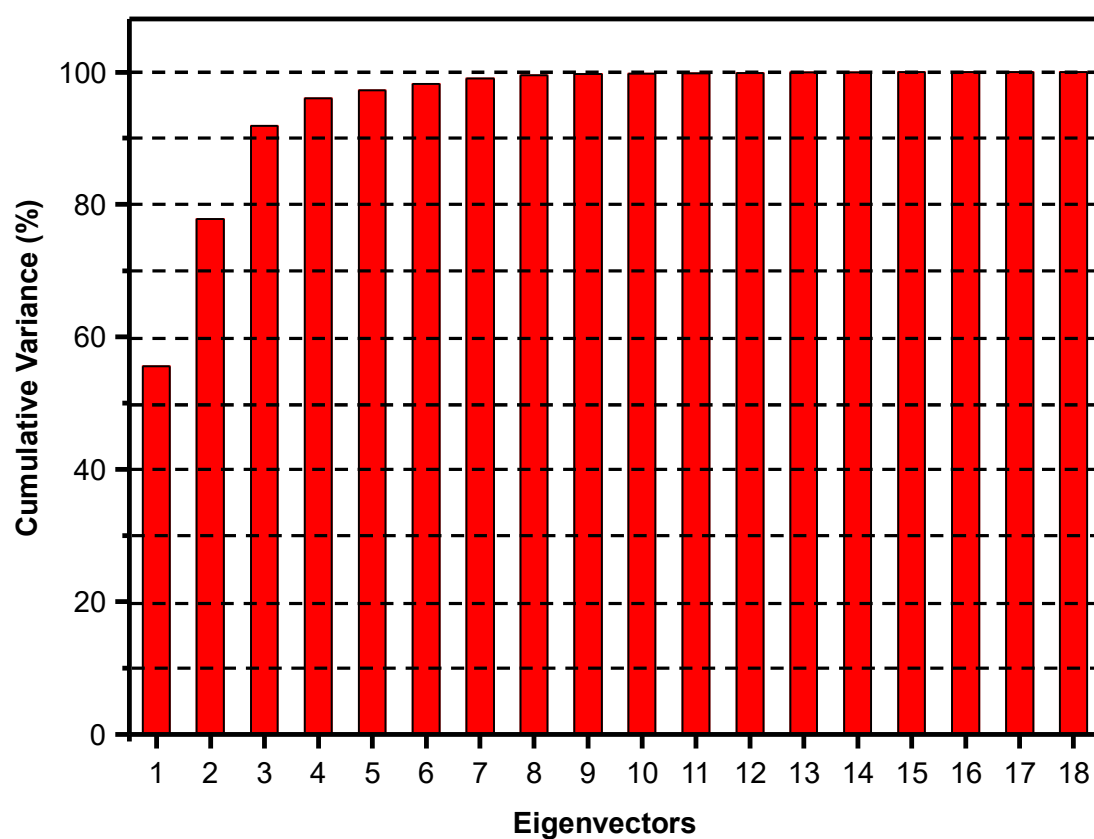


Fig. S2 Scree plot of the principal components from PCA of 105 baijiu samples and a control.

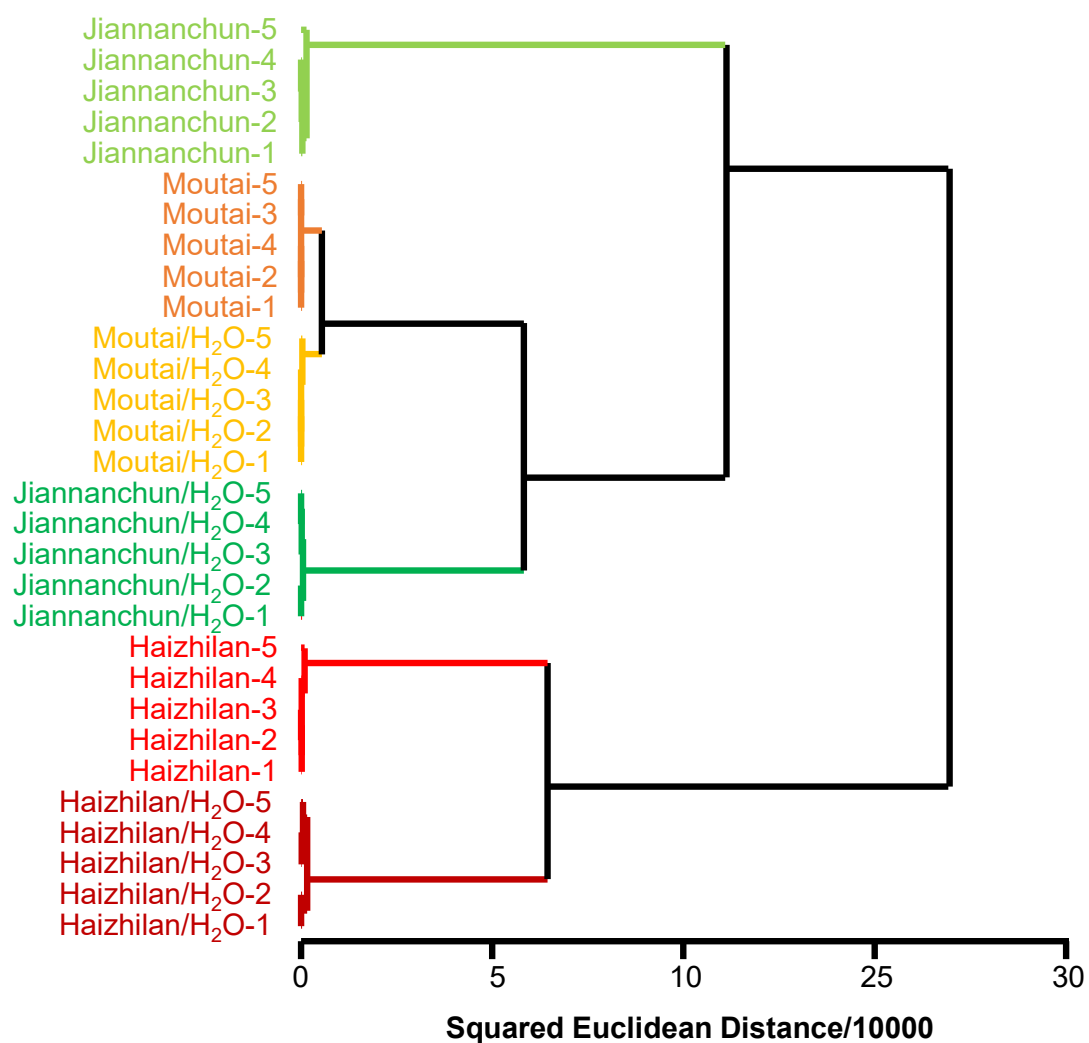


Fig. S3 Hierarchical cluster analysis result of the sensor array for various diluted liquors and their pristine forms.

Table S1. Database for liquors and a control (R1 to R6, G1 to G6, and B1 to B6 refer to the differences of the red, green, and blue (RGB) values from the center of every indicator solution (in 96-well plates) from the “before” and “after” images, respectively).

	R1	G1	B1	R2	G2	R3	G3	B3	R4	G4	B4	R5	G5	B5	R6	G6	B6
control-1	0.477982	-1.011608	0.835098	0.338013	-0.001707	0.130081	0.470123	0.002607	0.732674	0.225677	0.186752	0.888359	0.446693	0.238647	0.178223	0.215984	0.000683
control-2	0.261185	-0.299419	0.361121	0.508362	0.006487	0.191528	0.262894	0.180566	0.748032	0.085342	0.146133	0.614204	0.24649	0.063156	0.243423	0.515533	0.10994
control-3	0.292232	0.380979	-0.106522	0.368402	0	0.028995	0.178364	0.030716	0.038915	-0.015701	-0.025269	0.082149	0.146155	0.062149	0.013321	0.244446	-0.327759
control-4	0.283722	1.529167	-0.684532	0.645615	0.00956	-0.112671	0.278395	0.131544	-0.080574	0.007978	0.036221	0.187439	-0.092529	-0.203536	0.349274	-0.06282	0
control-5	0.271423	1.127346	-0.425407	0.235245	0.001366	-0.398422	0.120178	0.20076	-0.205185	0.097305	0.099686	0.173096	0.172073	0.174133	-0.201782	0.369751	0.203819
Juannanchun-1	20.912499	-0.0619119	51.408669	6.174454	-44.227383	95.043015	3.962448	0.197342	-34.529533	-24.788666	-20.334244	-2.116425	14.022202	43.484802	-14.688475	23.55743	-64.553259
Juannanchun-2	18.305573	-114.230633	47.599861	6.411072	-42.68829	96.178223	4.206207	-3.551392	-34.809486	-24.59166	-21.040283	-6.841583	13.61557	36.505981	-13.589615	12.78931	-61.107208
Juannanchun-3	54.72855	-109.414818	55.845468	-11.731017	-70.26255	131.310449	1.74292	-15.582794	-37.76886	-26.551041	-22.714659	33.17856	6.344408	32.146118	-2.701586	-34.88034	-66.659615
Juannanchun-4	5.607712	-109.031119	58.575279	-11.939318	-70.44977	135.04821	0.130177	-37.486738	-26.87265	-21.10066	5.80017	5.53012	30.80177	-7.825531	3.2827	-68.12786	-2.61615
Juannanchun-5	3.118118	-109.138611	56.310692	-11.24411	-70.66037	134.62653	2.267334	-15.817532	-37.60002	-25.327072	-21.44725	2.830658	5.523513	30.59002	-8.576645	-4.795502	-65.36296
Bao Feng-1	28.75306	-58.2896	-7.821777	40.520317	-0.024582	-60.580818	1.829094	20.74292	-3.682144	1.197327	6.808807	-1.651417	24.059753	57.624303	-3.706717	3.402191	9.616592
Bao Feng-2	28.956209	-3.146805	-1.671562	39.980202	-0.090133	-53.893822	2.768188	20.730367	-2.216118	1.801285	7.287811	0.728237	23.47325	58.30102	-28.5466	4.4047806	8.758957
Bao Feng-3	28.129117	-2.394333	-0.389557	38.940933	0.016646	-40.425064	2.181576	19.557526	-1.403547	2.595428	7.262574	7.22636	26.85552	55.537941	-28.26152	3.598966	8.520472
Bao Feng-4	28.251262	-5.431286	-4.32093	37.578039	-0.10618	-44.516556	1.572205	19.66044	-0.4654	0.979685	6.471832	0.890064	23.12649	55.09047	-27.54047	3.35241	8.110962
Bao Feng-5	27.624786	-1.786613	0.681122	34.388519	-0.270399	-38.299088	-0.223969	17.93341	-3.668875	0.643554	7.192551	0.20626	22.039612	53.29849	-27.58519	2.369391	7.643041
Haidian-1	23.84292	-104.75589	62.649704	5.192551	-8.254694	130.158752	8.876752	51.37214	-20.046873	-23.061111	-17.75827	9.029701	10.127701	43.239801	-9.916702	30.859088	90.50084
Haidian-2	25.599518	-107.967224	67.930465	4.880508	-12.385798	124.401835	9.761278	59.062784	-20.465997	-23.085693	-17.489423	8.613361	9.945334	42.87655	-37.19397	34.752823	-57.556839
Haidian-3	24.527887	-105.26646	67.720734	4.131454	-13.621714	123.89653	8.947458	50.875389	-20.463027	-22.87027	-16.2627	9.821102	9.277737	42.63633	-37.48857	33.906986	99.50113
Haidian-4	23.793718	-108.794815	63.691704	4.642654	-24.31949	120.291698	9.181974	49.274498	-20.47081	-23.088074	-16.91139	1.097984	9.28075	42.21373	-45.52575	33.09826	45.64273
Haidian-5	21.975321	-103.60437	65.201096	6.849091	-19.701643	122.960113	8.98377	49.919594	-17.546265	-21.490265	-15.290192	10.614887	9.341415	41.354385	-37.72323	30.402729	-107.77222
Moutai Yingbin-1	45.25819	-101.060776	55.672241	55.646286	-0.051895	-45.88719	16.454222	-22.599174	-19.240692	-10.11941	11.059746	24.188461	55.312057	-20.46027	34.244391	-17.982772	-0.010584
Moutai Yingbin-2	46.80561	-104.459198	59.388527	62.169006	-0.087402	-41.75801	11.878113	17.563324	-18.88719	-19.205185	-9.825253	9.351642	24.41687	54.160126	-18.820285	22.73848	-14.7733
Moutai Yingbin-3	45.753159	-101.867874	58.008591	57.223289	-0.027996	-39.263573	11.839203	17.587585	-17.80676	-18.50362	-8.922664	10.37464	23.175842	54.715192	-29.121237	34.927747	-14.218848
Moutai Yingbin-4	45.098663	-104.228527	57.864456	55.32802	-0.31418	-38.58361	11.664784	16.987468	-18.746831	-18.746831	-9.443821	11.894242	23.999189	53.821442	-28.36647	23.7686	-15.22908
Moutai Yingbin-5	41.75383	-104.113109	55.959585	54.263565	-0.238989	-37.470467	12.410385	17.649704	-14.759865	-17.212092	-8.03829	10.695554	23.109253	52.66483	-18.82849	21.488907	-14.813248
Hongjiang-1	37.94687	-104.00627	50.890747	37.517578	-3.122226	-73.52372	8.333221	17.960403	-22.735405	-21.039612	-16.206543	4.836464	15.268021	-14.169066	-14.028	22.69085	-36.10565
Hongjiang-2	39.372147	-107.98388	54.014679	36.347221	-2.483441	-69.161499	6.642883	19.352341	-17.98374	-21.250931	-15.962484	4.553429	14.8927	43.594742	-12.152267	31.90184	-33.0128
Hongjiang-3	38.440317	-104.66037	55.212021	35.274498	-3.151246	-70.36702	8.885284	19.052582	-20.658107	-19.895187	-14.612488	7.27689	15.533295	43.98388	-11.218506	20.57693	-39.01496
Hongjiang-4	38.336624	-107.292522	52.802389	37.264698	-4.355643	-68.87668	10.41828	19.98987	-17.226468	-19.452462	-14.94374	8.80725	16.25436	44.359461	-24.70947	30.88375	-13.28043
Hongjiang-5	35.722578	-102.459541	48.246306	39.526115	-18.026209	-71.371109	11.69421	23.845506	-13.211678	-17.114716	-12.064529	8.891567	17.141377	44.272306	-7.795151	22.897329	-29.86878
Gaojing Gaojing-1	17.331766	-100.831248	58.658241	-3.200409	-29.233871	137.282549	4.411407	-7.263901	-34.27108	-24.71936	-21.125977	2.229088	12.40646	41.070328	-9.916016	13.36969	-55.446571
Gaojing Gaojing-2	18.649306	-105.208946	61.179924	-3.149185	-42.459545	134.58963	5.726181	-5.604465	-34.004776	-24.330475	-20.687607	4.675316	11.660739	40.176382	-86.2936	0.926254	-60.10889
Gaojing Gaojing-3	17.894501	-102.41994	60.865486	-3.040283	-40.916012	133.05394	5.66051	-5.349945	-32.572891	-19.525436	-19.590386	12.282346	41.043701	40.47363	2.292938	-58.69219	-0.375357
Gaojing Gaojing-4	17.544071	-104.718338	60.505287	-2.966944	-45.335287	129.658902	6.181976	-5.74086	-32.466564	-25.063492	-20.081589	7.368387	13.093238	40.931717	-7.907622	5.368698	-59.77738
Gaojing Gaojing-5	18.131416	-100.640808	60.128723	-2.12399	-41.366676	130.66514	5.310121	-42.466713	-23.94038	-20.32925	-14.940414	7.564794	13.484014	40.867323	-2.852413	2.857315	-55.80397
Gaojing-1	54.44862	-100.24401	41.50593	90.362579	-1.122909	-13.68902	16.255327	22.64968	-25.18373	-46.57786	4.657576	6.4151501	34.59407	65.862368	35.132462	-68.432367	-0.618905
Gaojing-2	55.40039	-94.07579	43.5606	90.650398	-0.167203	1.255722	17.139984	23.452362	-21.44638	-10.050522	4.306244	5.341755	33.946747	64.28308	-35.9523	34.805054	53.33488
Gaojing-3	54.152611	-91.86731	42.828613	90.825546	-0.07014	0.547623	17.146085	23.27573	-19.8968	-9.467743	4.81189	5.064186	34.696487	65.542325	-35.46266	37.97787	49.727554
Gaojing-4	53.579851	-94.974739	41.667801	90.615906	-0.275909	0.936844	17.540637	-23.028	-19.53499	-9.824881	4.87519	6.586458	35.49348	65.064186	-33.93975	38.86347	49.91127
Gaojing-5	50.686577	-100.146841	38.139297	90.779442	-0.066214	3.204163	18.51265	24.184601	-16.49258	-7.165588	6.55603	5.892456	35.21924	64.199727	-32.59476	37.85698	41.17382
Wuling-1	38.83407	-99.244653	53.564011	48.4322	-1.25982	52.040619	7.636734	13.558513	-28.273125	-22.749741	-18.00359	6.31217	16.807785	48.234558	-16.41561	11.367706	-46.58249
Wuling-2	39.013284	-103.298737	56.402863	45.046977	-0.147491	-48.415848	8.326385	13.130753	-25.059509	-23.824844	-18.02356	5.350971	16.26767	47.120178	-14.554794	10.004314	-40.137902
Wuling-3	38.612839	-100.879478	56.109261	42.127377	-0.097886	-44.550705	7.981232	13.926605	-23.808254	-22.630936	-18.62061	7.297714	17.352416	47.332366	-14.261536	10.723114	-41.15901
Wuling-4	38.09164	-103.709114	54.444862	41.369743	-0.072038	-44.590302	7.934784	13.55812	-23.944008	-22.57572	-17.601227	9.644855	16.26894	46.969209	-17.601227	12.510013	-40.64588
Wuling-5	35.312729	-86.444862	54.577332	42.649264	-1.02482	43.646629	9.67897	13.575214	-20.48519	-20.36702	-15.031164	7.57325	16.748718	47.195618	-13.774681	10.726514	-40.83013
Luzhou Liaojuo-1	24.14032	-99.278038	56.928642	1.519623	-10.353502	122.36013	7.317905	3.964493	-33.158752	-29.939011	-19.004134	5.04575	16.649566	48.33357	-15.925919	10.75145	-34.292931
Luzhou Liaojuo-2	25.874695	-103.34781	59.977463	1.723465	-12.108569	120.098679	8.490317	4.89314	-29.187088	-22.74994	-19.279617	4.477295	16.498474	47.681808	-14	10.470123	-34.56179
Luzhou Liaojuo-3	24.357117	-101.897575	57.350296	1.407854	-12.134176	117.079552	8.12036	4.681473	-28.32946	-22.204514	-18.356781	5.055313	16.160126	47.571518	-13.393311	10.817352	-34.00602
Luzhou Liaojuo-4	24.293961	-103.878799	55.522362	1.849592	-13.492319	129.658902	8.366333	4.658936	-28.476273	-21.95344	-18.27781	5.842949	16.78827	47.911575	-12.385117	12.060671	-34.527708
Luzhou Liaojuo-5	22.713211	-100.389949	60.128723	2.802792	-0.046034	130.66514	5.984861	16.987468	-18.746831	-18.746831	-9.443821	12.062421	17.173817	47.624212	-12.700901	11.147144	-34.527708
Laigushan Guli-1	18.059607	-9															