

Supporting information

Machine learning-assisted flexible wearable device for tyrosine detection

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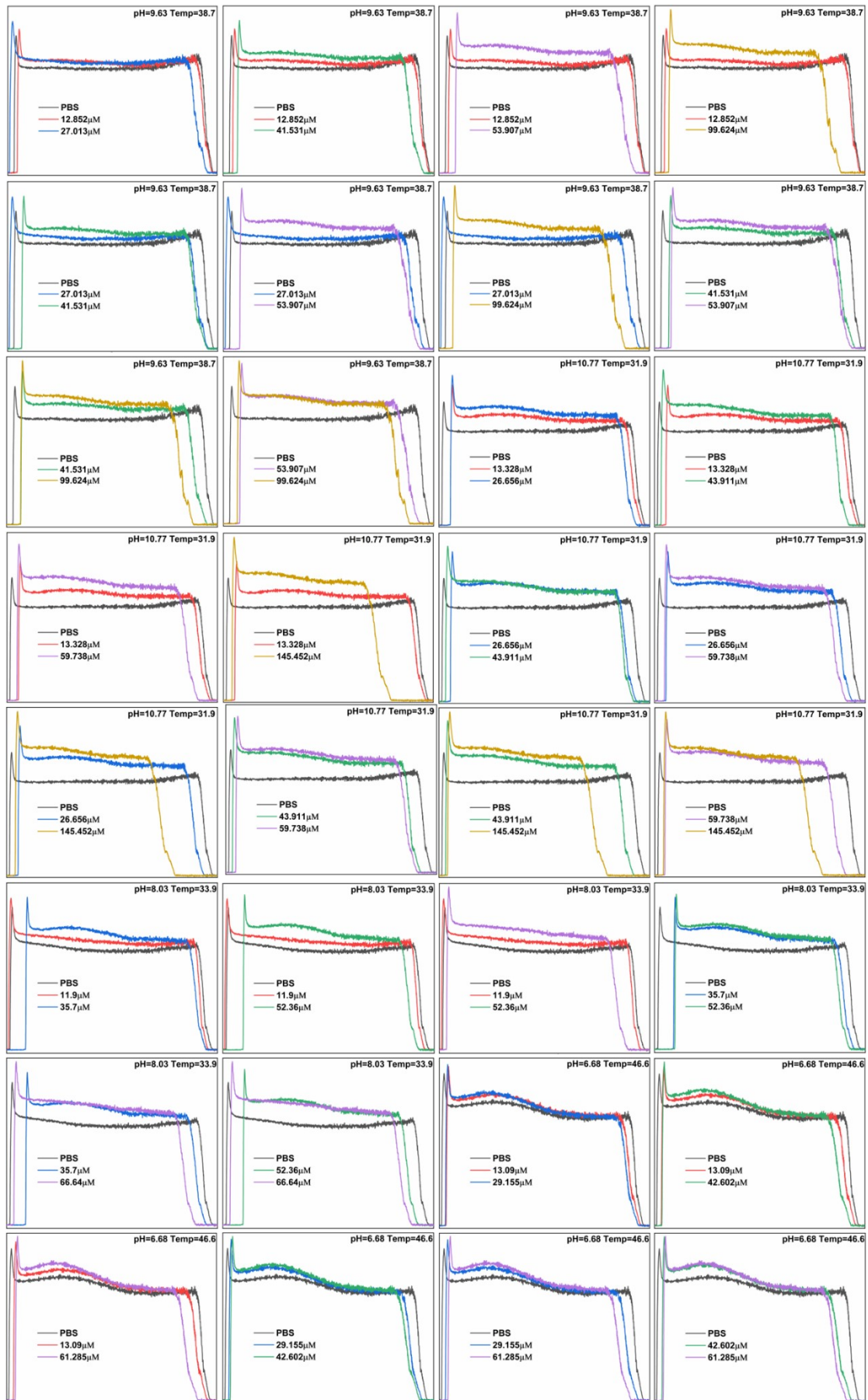


Fig S1 32 sets of DPV curves of CS/CB-GO/paper-based electrode in artificial urine at different pH and temperature. values.

Table S1 The statistics for the collected eigenvalue data.

CON_1	I_0	I_1	I_2	V_0	V_1	V_2	VP_0	VP_1	VP_2	CON_2	PH	TEMP
12.852	0.26671	0.26462	0.26096	1.5468	1.5034	1.4264	1.6028	1.5734	1.4922	27.013	9.63	38.7
12.852	0.26671	0.26462	0.26585	1.5468	1.5034	1.4166	1.6028	1.5734	1.4726	41.531	9.63	38.7
12.852	0.26671	0.26462	0.27865	1.5468	1.5034	1.3452	1.6028	1.5734	1.4292	53.907	9.63	38.7
12.852	0.26671	0.26462	0.27397	1.5468	1.5034	1.2262	1.6028	1.5734	1.3424	99.624	9.63	38.7
27.013	0.26671	0.26096	0.26585	1.5468	1.4264	1.4166	1.6028	1.4922	1.4726	41.531	9.63	38.7
27.013	0.26671	0.26096	0.27865	1.5468	1.4264	1.3452	1.6028	1.4922	1.4292	53.907	9.63	38.7
27.013	0.26671	0.26096	0.27397	1.5468	1.4264	1.2262	1.6028	1.4922	1.3424	99.624	9.63	38.7
41.531	0.26671	0.26585	0.30298	1.5468	1.4166	1.2304	1.6028	1.4726	1.4292	53.907	9.63	38.7
41.531	0.26671	0.26585	0.29906	1.5468	1.4166	1.2374	1.6028	1.4726	1.3424	99.624	9.63	38.7
53.907	0.26671	0.27865	0.27397	1.5468	1.3452	1.2262	1.6028	1.4292	1.3424	99.624	9.63	38.7
13.328	0.25738	0.27173	0.28424	1.5678	1.4838	1.425	1.6	1.5482	1.488	26.656	10.77	31.9
13.328	0.25738	0.27173	0.28324	1.5678	1.4838	1.4124	1.6	1.5482	1.4656	43.911	10.77	31.9
13.328	0.25738	0.27173	0.28753	1.5678	1.4838	1.348	1.6	1.5482	1.4138	59.738	10.77	31.9
13.328	0.25738	0.27173	0.29858	1.5678	1.4838	1.0624	1.6	1.5482	1.1562	145.452	10.77	31.9
26.656	0.25738	0.28424	0.28324	1.5678	1.425	1.4124	1.6	1.488	1.4656	43.911	10.77	31.9
26.656	0.25738	0.28424	0.28753	1.5678	1.425	1.348	1.6	1.488	1.4138	59.738	10.77	31.9
26.656	0.25738	0.28424	0.1516	1.5678	1.425	1.0624	1.6	1.488	1.1562	145.452	10.77	31.9
43.911	0.25738	0.28324	0.28753	1.5678	1.4124	1.348	1.6	1.4656	1.4138	59.738	10.77	31.9
43.911	0.25738	0.28324	0.1516	1.5678	1.4124	1.0624	1.6	1.4656	1.1562	145.452	10.77	31.9
59.738	0.25738	0.28753	0.1516	1.5678	1.348	1.0624	1.6	1.4138	1.1562	145.452	10.77	31.9
13.09	0.24298	0.24684	0.24633	1.418	1.3382	1.2808	1.4418	1.3858	1.3536	29.155	6.86	46.6
13.09	0.24298	0.24684	0.25094	1.418	1.3382	1.2332	1.4418	1.3858	1.3228	42.602	6.86	46.6
13.09	0.24298	0.24684	0.2532	1.418	1.3382	1.208	1.4418	1.3858	1.285	61.285	6.86	46.6
29.155	0.24298	0.24633	0.25094	1.418	1.2808	1.2332	1.4418	1.3536	1.3228	42.602	6.86	46.6
29.155	0.24298	0.24633	0.2532	1.418	1.2808	1.208	1.4418	1.3536	1.285	61.285	6.86	46.6
42.602	0.24298	0.25094	0.2532	1.418	1.2332	1.208	1.4418	1.3228	1.285	61.285	6.86	46.6
11.9	0.22254	0.23026	0.23177	1.565	1.5328	1.4404	1.6028	1.5734	1.5244	35.7	8.03	33.9
11.9	0.22254	0.23026	0.23483	1.565	1.5328	1.4068	1.6028	1.5734	1.4782	52.36	8.03	33.9
11.9	0.22254	0.23026	0.2364	1.565	1.5328	1.32	1.6028	1.5734	1.397	66.64	8.03	33.9
35.7	0.22254	0.23177	0.23483	1.565	1.4404	1.4068	1.6028	1.5244	1.4782	52.36	8.03	33.9
35.7	0.22254	0.23177	0.2364	1.565	1.4404	1.32	1.6028	1.5244	1.397	66.64	8.03	33.9
52.36	0.22254	0.23483	0.2364	1.565	1.4068	1.32	1.6028	1.4782	1.397	66.64	8.03	33.9

Table S2 Output of different algorithm models running 5 times on 70 % samples.

Linear	R ²	RMSE	MAE	Recovery (%)
1	0.9433	7.0993	5.9615	98.43
2	0.9574	6.7003	5.8862	97.97
3	0.7938	8.2963	6.7799	89.76
4	0.8986	6.23000	4.7042	95.30
5	0.9458	8.1168	7.1117	7.94

Elastic Net				
1	0.9473	7.3974	6.2411	99.39
2	0.9874	4.1573	3.3912	99.75
3	0.8926	7.6704	6.5640	95.73
4	0.9407	7.8171	6.7274	97.78
5	0.6001	6.2013	5.1703	91.20
KNR				
1	0.7319	16.9687	15.1117	86.94
2	0.2793	31.5270	24.4051	82.28
3	0.5519	25.8092	23.0374	88.37
4	0.6821	17.5036	13.7419	86.40
5	0.6385	17.6337	15.0135	87.49
DTR				
1	0.8305	13.6664	6.5352	91.53
2	0.9703	5.5520	3.6593	98.58
3	0.5904	21.3690	16.4636	94.55
4	0.9196	8.9904	5.5930	96.99
5	0.9203	11.7576	8.4093	96.01
Lasso				
1	0.9415	7.5584	5.8636	97.48
2	0.9629	5.8957	4.4400	98.17
3	0.4068	14.0672	8.2738	75.70
4	0.9030	13.1099	6.0096	95.61
5	0.8743	8.2852	6.7756	96.20
Bayesian Ridge				
1	0.9369	8.7832	7.4365	96.91
2	0.9659	7.1891	5.5647	98.85
3	0.8875	10.2222	7.3245	94.29
4	0.8363	12.4193	7.7389	92.87
5	0.7048	15.6021	12.5438	95.12
Ridge				
1	0.9828	5.4170	4.4912	99.24
2	0.9060	10.1210	8.7042	97.35
3	0.8237	8.3220	7.0380	93.61

4	0.9465	8.3077	7.0377	97.60
5	0.9542	6.9038	4.9683	97.86