

Constructive Optimization of a Multi-Enzymatic Film based on a Cascade Reaction for Electrochemical Biosensors

Kai Sasaki^{1,2}, Hiroyuki Furusawa^{2,3,4*}, Kuniaki Nagamine^{1,4}, and Shizuo Tokito^{1,4*}

¹Graduate School of Organic Materials Science, Yamagata University, 4-3-16 Jonan, Yonezawa, Yamagata 992-8510

²Innovative Flex Course for Frontier Organic Material Systems (iFront), Yamagata University, 4-3-16 Jonan, Yonezawa, Yamagata 992-8510

³Institute for the Promotion of General Graduate Education (IPGE), Yamagata University, 4-3-16 Jonan, Yonezawa, Yamagata 992-8510

⁴Research Center for Organic Electronics (ROEL), Yamagata University, 4-3-16 Jonan, Yonezawa, Yamagata 992-8510

E-mail: hfurusaw@yz.yamagata-u.ac.jp (H.F.); tokito@yz.yamagata-u.ac.jp (S.T.)

Supporting Information

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Figure S3: Scanning electron microscopy images of electrode surfaces.

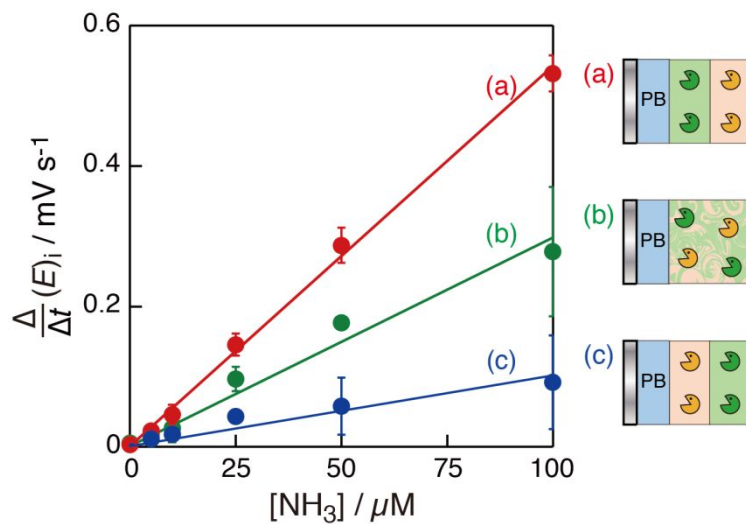


Figure S1. Linear plots for the initial rate values of ΔE measured by (a) the normal-sequential layered film electrode, (b) the mixed film electrode, and (c) the reverse-sequential layered film electrode. The measurements were carried out at 25 °C in a 100 mM phosphate buffer solution (pH 8.0) containing 200 mM KCl, 2 mM NADPH, and 5 mM α -KA for the NH_3 detection (5–100 μM). The error bars indicate the standard deviation ($n = 3$). The lines a and b are the same as those in Figure 4B line d and Figure 3B line d for ease of comparison, respectively.

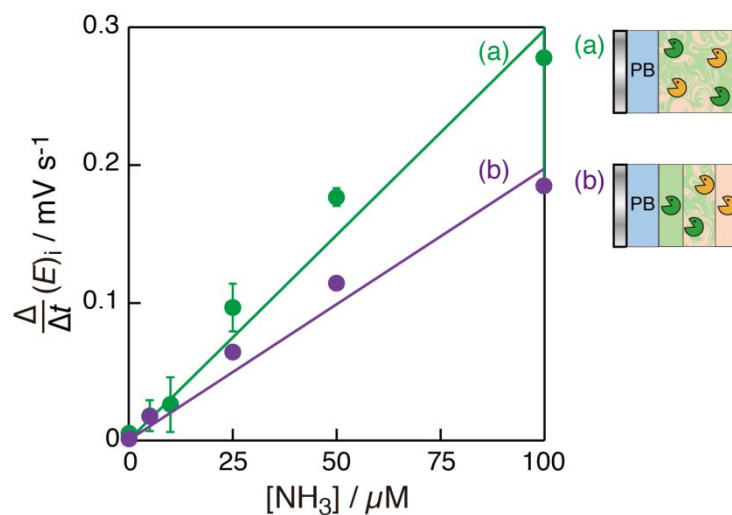


Figure S2. Linear plots for the initial rate values of ΔE measured by (a) the mixed film electrode and (b) the three layered film electrode. The measurements were carried out at 25 °C in a 100 mM phosphate buffer solution (pH 8.0) containing 200 mM KCl, 2 mM NADPH, and 5 mM α -KA for the NH_3 detection (5 –100 μM). The error bars indicate the standard deviation ($n = 3$). There are no error bars for (b). The line a is the same as that in Figure 3B line d for ease of comparison.

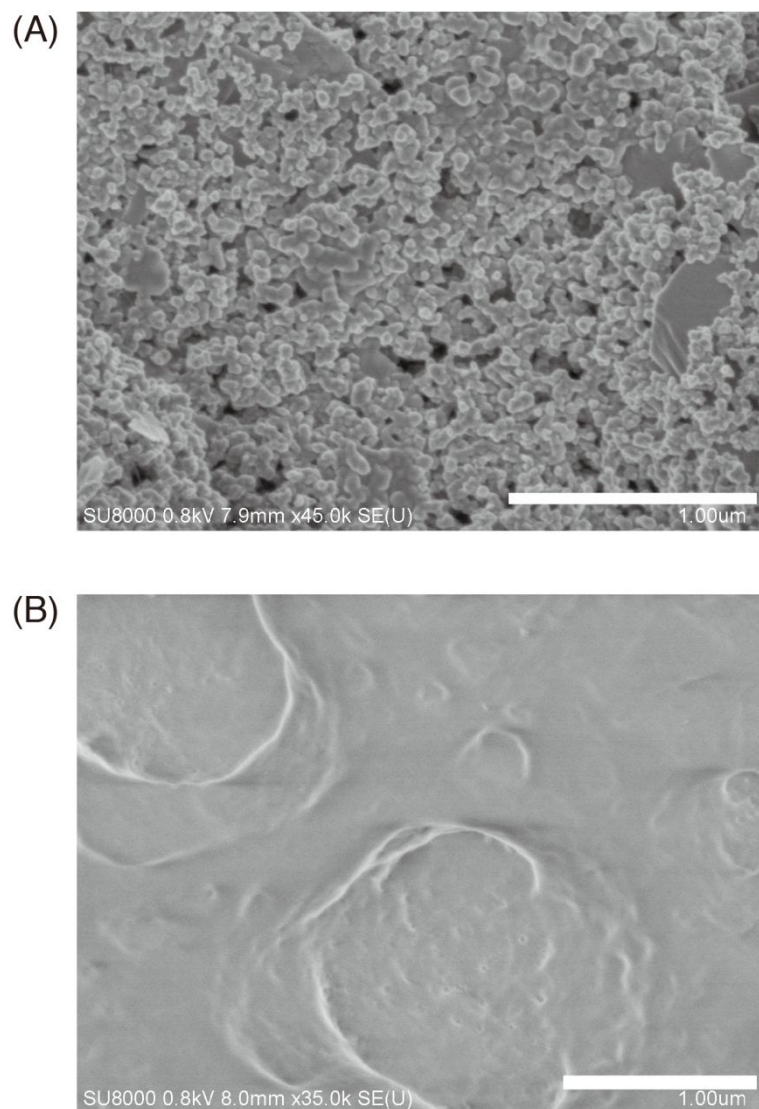


Figure S3. Scanning electron microscopy images of surfaces of (A) a bare PB-carbon electrode and (B) an electrode covered by normal-sequential layered film. The scanning was carried out at acceleration voltage: 0.8 kV using SU8000 (Hitachi High-Tech Co., Ltd., Tokyo, Japan). The white scale bars indicate the 1 μm width, respectively.