Supporting Information

Facile fabrication of all-solid-state ion-selective electrodes by laminating and drop-casting for multi-sensing

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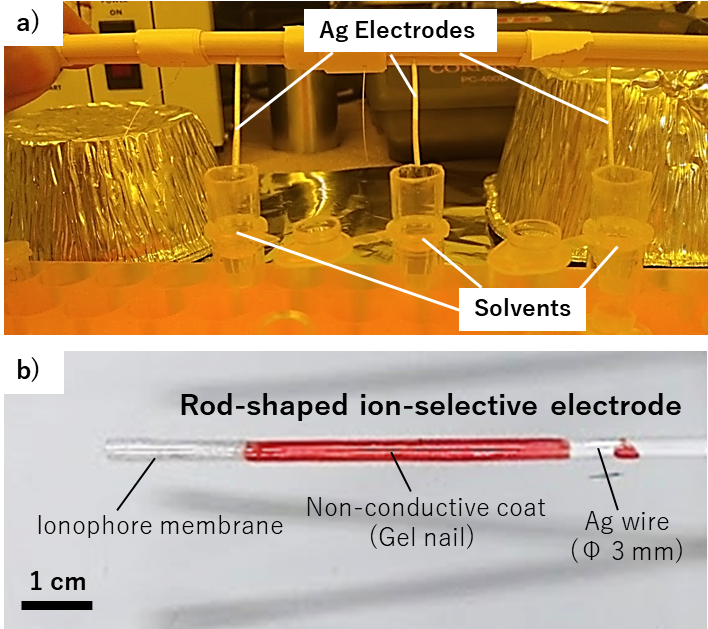
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**Keywords:** Ion-selective electrode; All-solid-state; Multi-sensor; Arduino; Wireless system

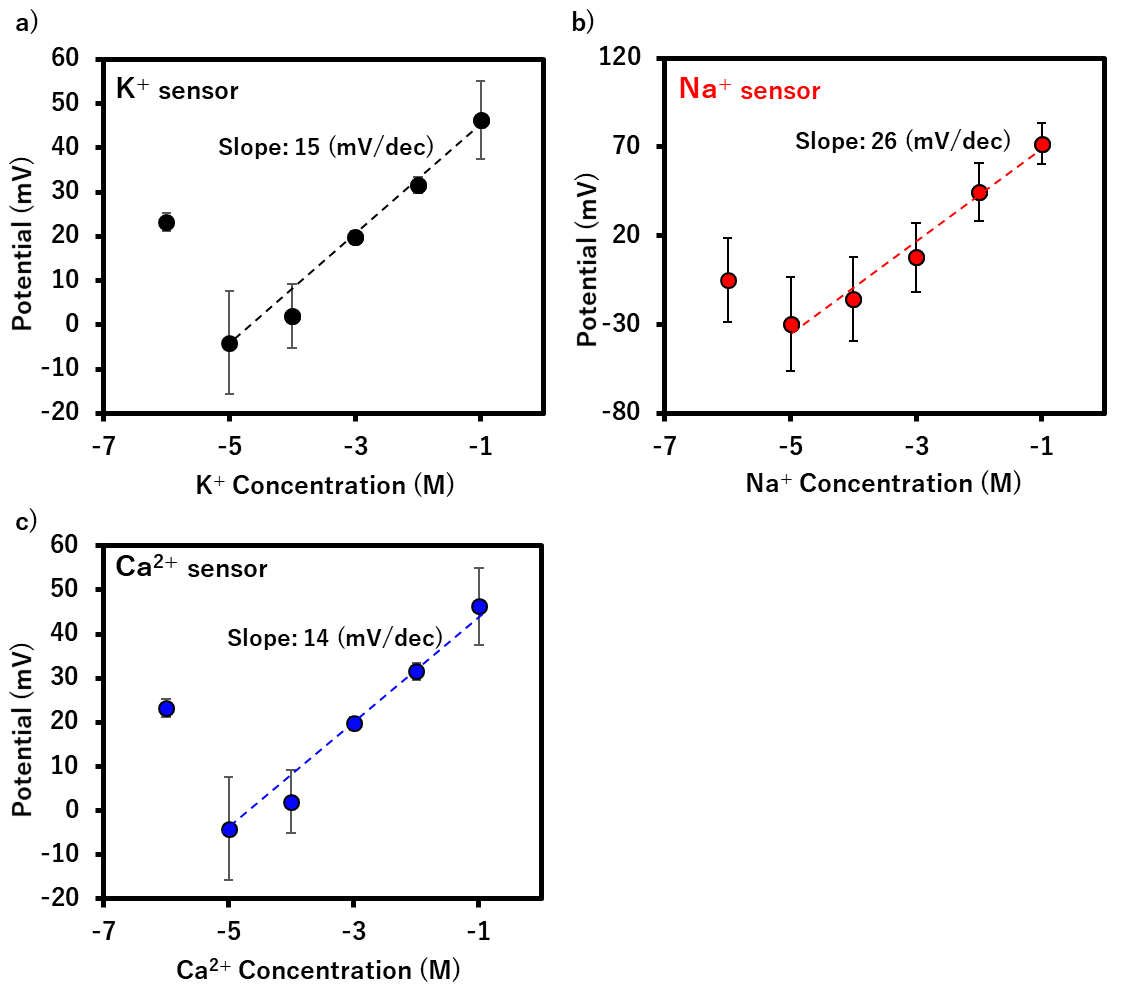
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自動的に生成された説明

**Fig. S1.** Molecular structure of Bis[(12-crown-4)methyl]2-dodecyl-2-methylmalonate (Bis(12-crown-4)), Bis[(benzo-15-crown-5)-4-methyl]pimelate (Bis(benzo-15-crown-5)), Calcium ionophore Ⅱ (ETH 129) and magnesium ionophore Ⅰ (ETH 1117).



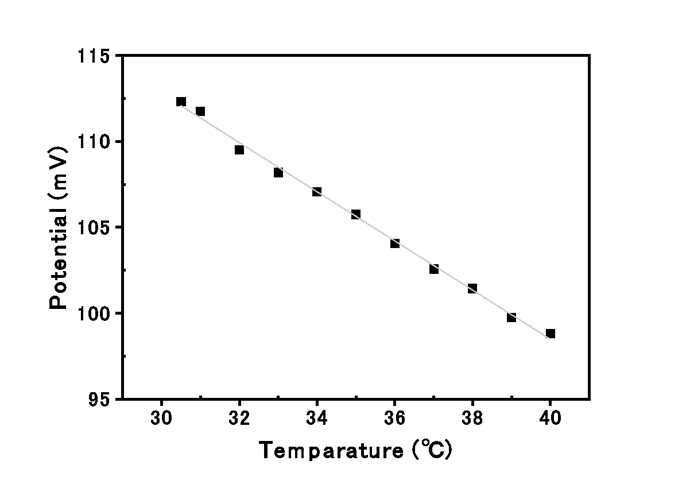
**Fig. S2.** (a) Photograph of dip-coating to prepare rod-shaped ion-selective electrode. (b) Photograph of rod-shaped ion-selective electrode. Gel nail as non-conductor is coated to the Ag wire. The membrane containing ionophore is coated by dip coating. The composition of the membrane cocktails: ionophore (6%), PVC (30%), NPOE (58%) and TFPB (6%).



**Fig. S3.** The sensor performance: K+ sensor (a), Na+ sensor (b) and Ca2+ sensor. The composition of the membrane cocktails: ionophore (6%), PVC (30%), NPOE (58%) and TFPB (6%). These data were obtained by electrodes without PEDOT:PSS layers.



**Fig. S4.** Long time measurement for observing potential drift of all-solid-state type electrode. The Ca2+ sensor was used. The composition of the membrane cocktails: ionophore (6%), PVC (30%), NPOE (58%) and TFPB (6%).



**Fig. S5.** Relation between potential and temperature. The all-solid-state type Ca2+ sensor was used. The composition of the membrane cocktails: ionophore (6%), PVC (30%), NPOE (58%) and TFPB (6%).