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5 **SUPPORTING INFORMATION**  
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11 **A Novel Wearable Flexible Dry Electrode Based on Cowhide for**  
12 **ECG Measurement of a young woman**

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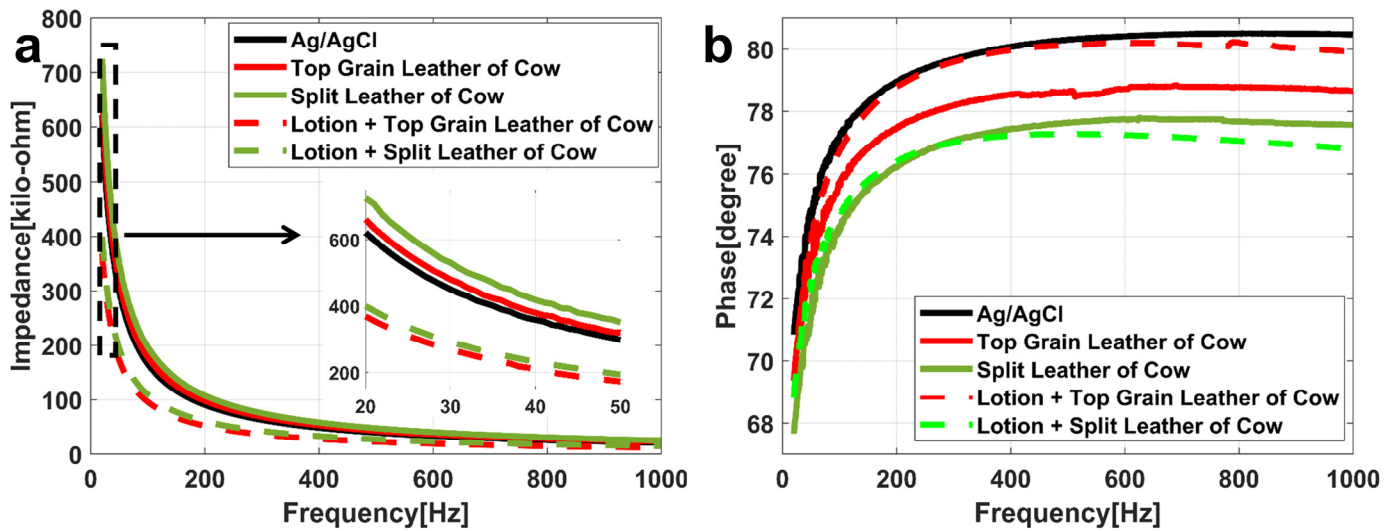
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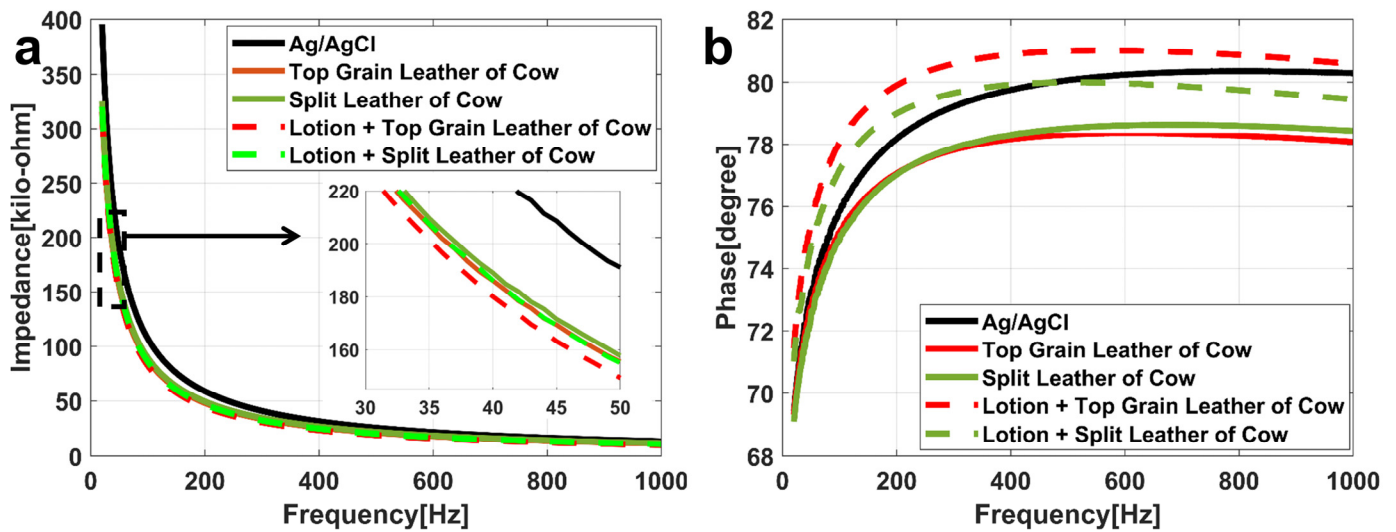
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36 **Figure S1.** Diagram of (a) skin-electrode impedance-frequency and (b) skin-electrode phase-frequency of the second  
 37 subject. The frequency range is 20-1000 Hz, each electrode is indicated by one color, and the application of lotion is  
 38 indicated by a dotted line.

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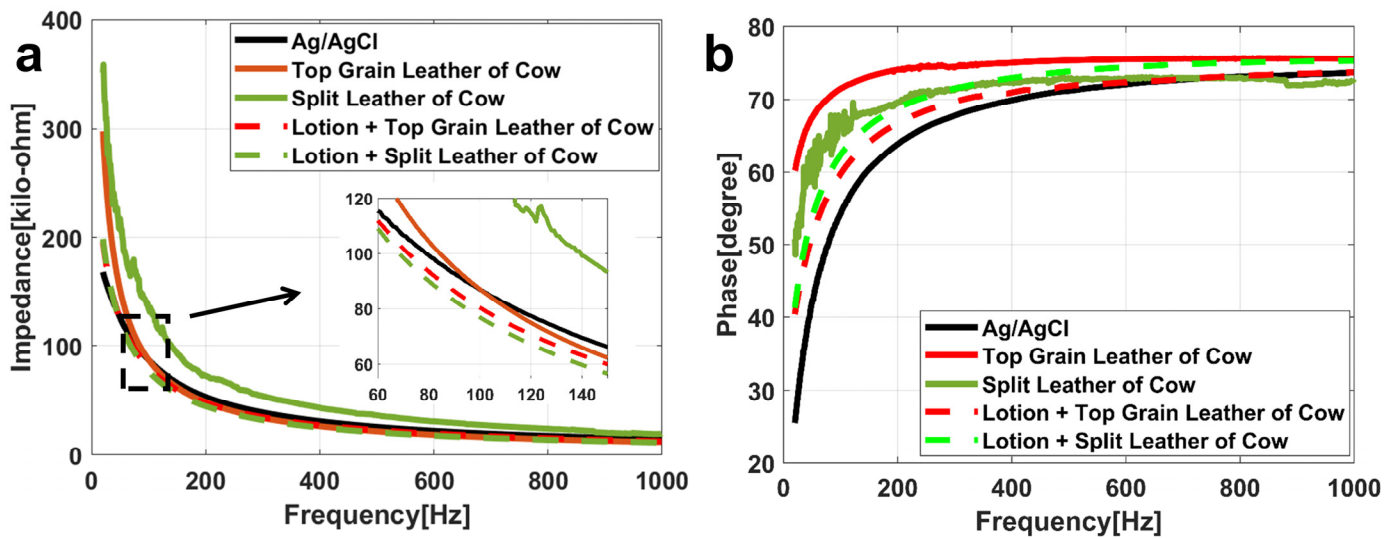
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41 **Figure S2.** Diagram of (a) skin-electrode impedance-frequency and (b) skin-electrode phase-frequency of the third  
 42 subject. The frequency range is 20-1000 Hz, each electrode is indicated by one color, and the application of lotion is  
 43 indicated by a dotted line. (The impedance of the electrode based on cowhide of the subject is lower than that of the  
 44 standard electrode, which may be due to the skin stratum corneum is removed frequently and body lotion was used  
 45 often in the daily life of the third subject. These behaviors can cause thin stratum corneum and higher moisture  
 46 content of skin, resulting in the final skin electrode impedance test results.)

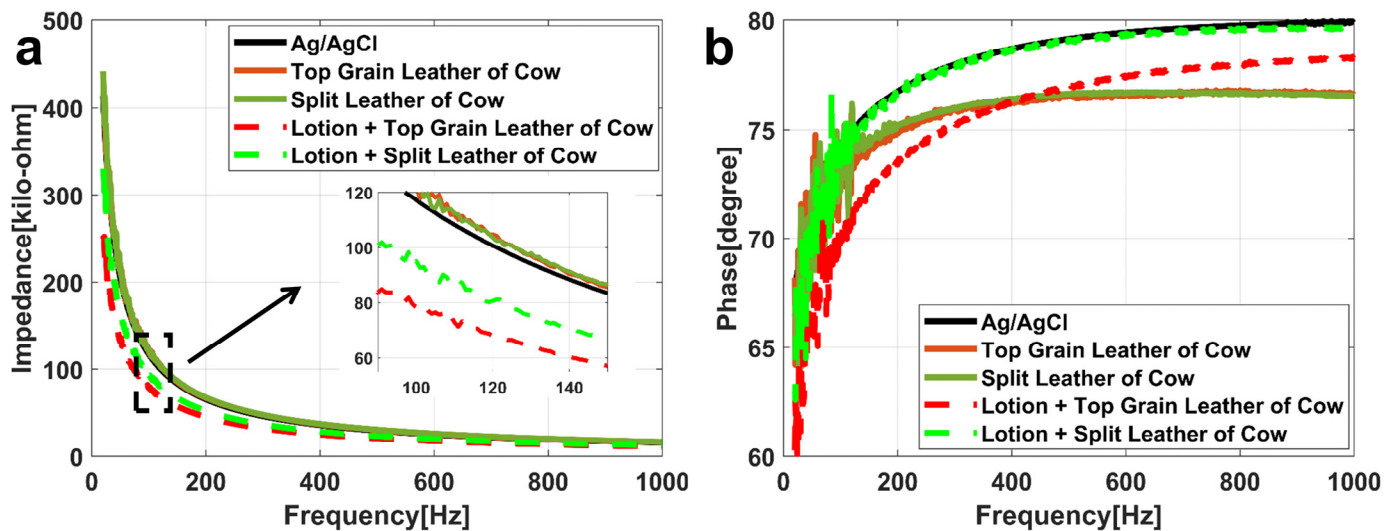
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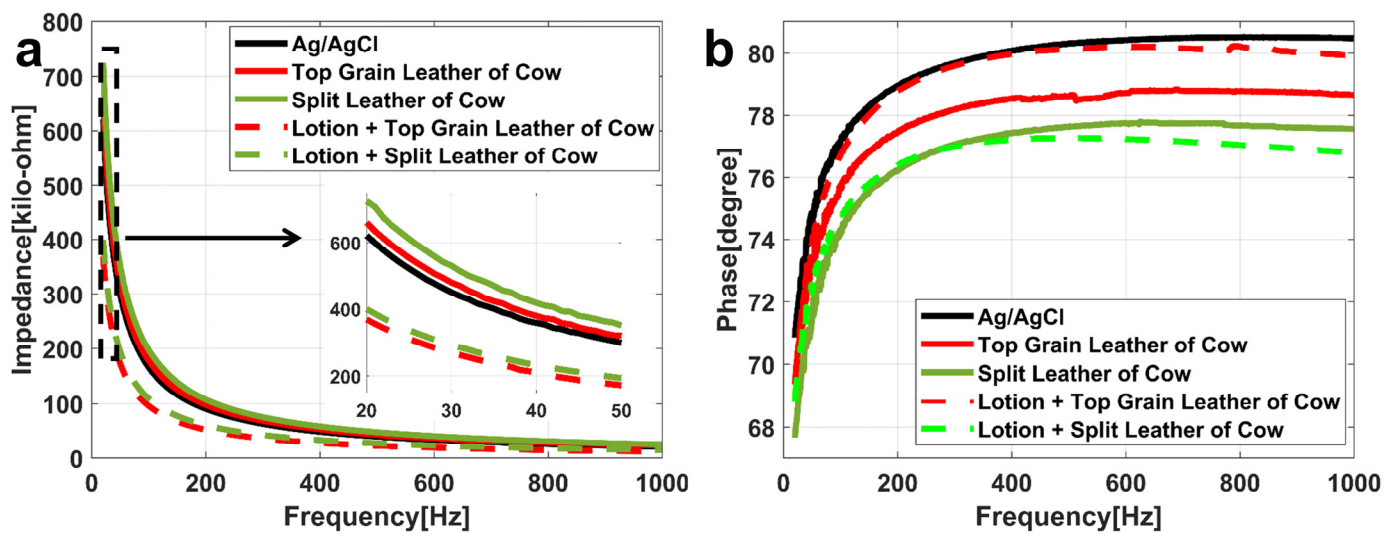


49 **Figure S3.** Diagram of (a) skin-electrode impedance-frequency and (b) skin-electrode phase-frequency of the fourth  
 50 subject. The frequency range is 20-1000 Hz, each electrode is indicated by one color, and the application of lotion is  
 51 indicated by a dotted line. (Compared with other subjects, the overall impedance of the subject was lower, and the  
 52 impedance of the electrode based on the top grain layer of cowhide was lower than that of the standard electrode  
 53 when the frequency was more than 100Hz, which may be related to that the skin stratum corneum was removed  
 54 deeply by scrubbing and washing skin forcefully few days ago.)

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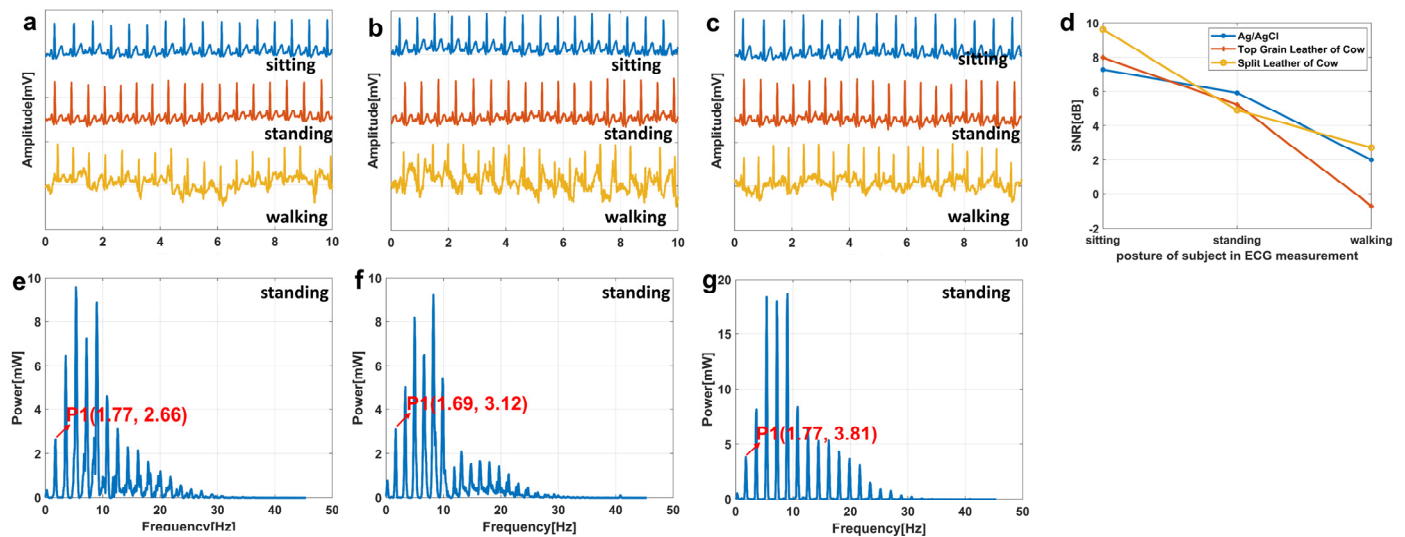
57 **Figure S4.** Diagram of (a) skin-electrode impedance-frequency and (b) skin-electrode phase-frequency of the fifth  
 58 subject. The frequency range is 20-1000 Hz, each electrode is indicated by one color, and the application of lotion is  
 59 indicated by a dotted line.



60 **Figure S5.** Diagram of (a) skin-electrode impedance-frequency and (b) skin-electrode phase-frequency of the sixth  
 61 subject. The frequency range is 20-1000 Hz, each electrode is indicated by one color, and the application of lotion is  
 62 indicated by a dotted line.

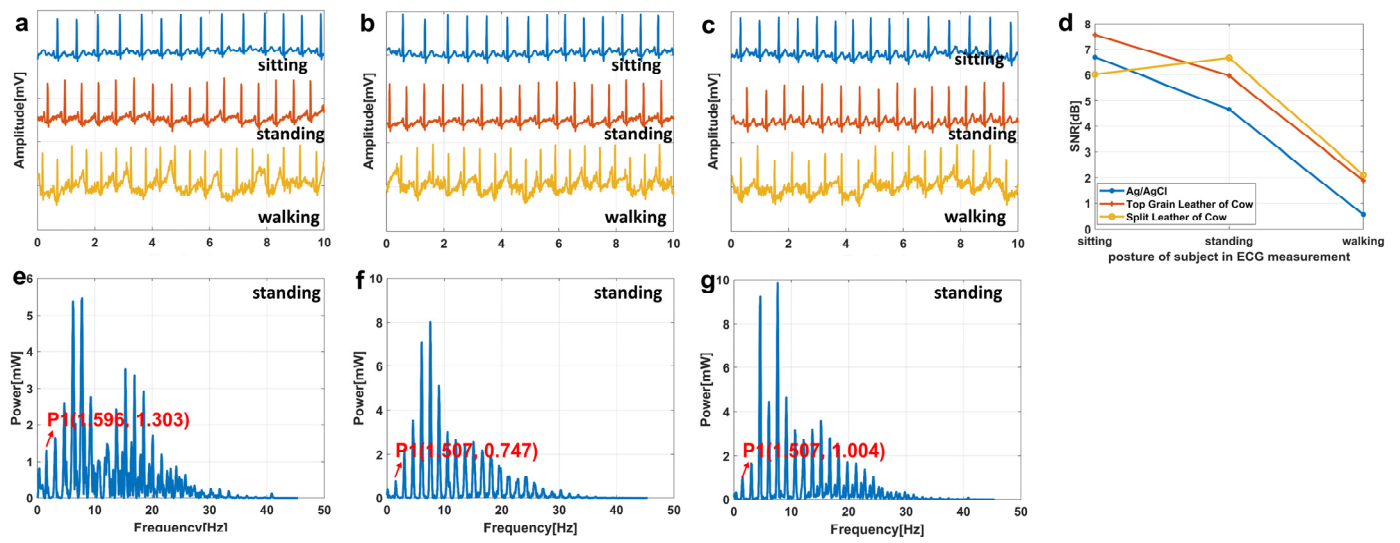
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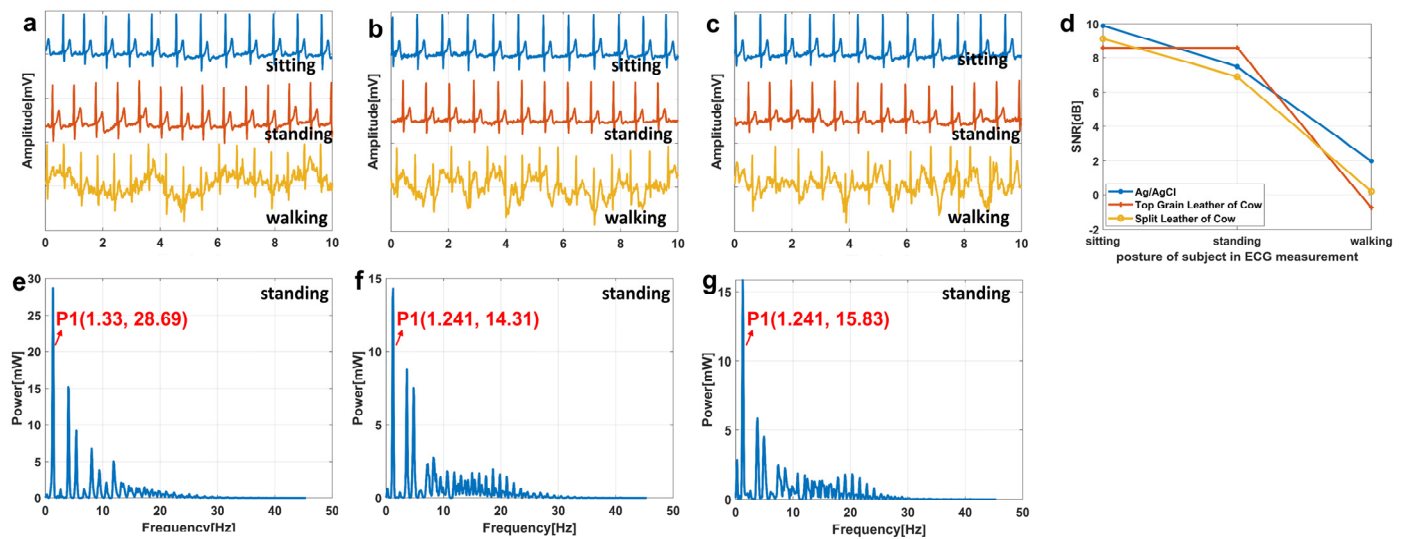
65 **Figure S6.** The ECG result of the second subject. The ECG of (a) the standard Ag/AgCl electrode and (b) (c) the  
 66 electrodes based on the top grain layer and split layer. (d) Signal-to-noise ratio (SNR) diagram. The power spectrum  
 67 of the standing posture of (e) the standard Ag/AgCl electrode (f) the electrode based on the top grain layer and (g) the  
 68 electrode based on the split layer. (The heart rates of the subject are 106.2, 101.4 and 106.2 beats per minute, which is  
 69 normal when the subject was obviously nervous.)

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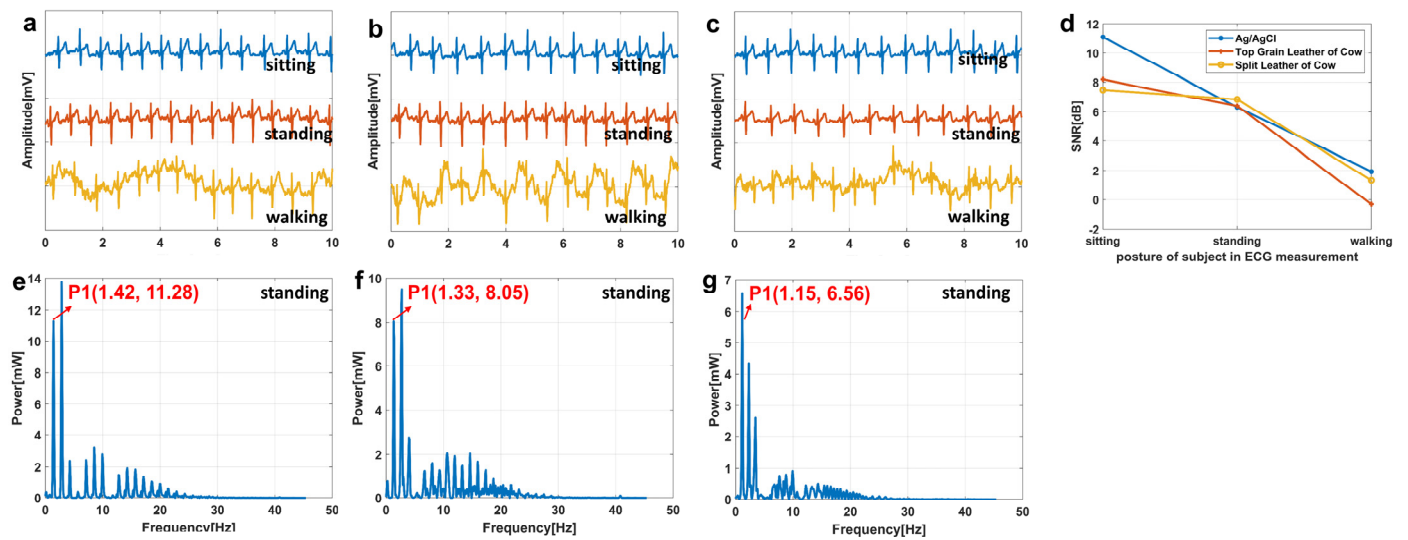
71 **Figure S7.** The ECG result of the third subject. The ECG of (a) the standard Ag/AgCl electrode and (b) (c) the  
 72 electrodes based on the top grain layer and split layer. (d) Signal-to-noise ratio (SNR) diagram. The power spectrum  
 73 of the standing posture of (e) the standard Ag/AgCl electrode (f) the electrode based on the top grain layer and (g) the  
 74 electrode based on the split layer. (The heart rates of the subject are 95.76, 90.42 and 95.76 beats per minute, which is  
 75 normal.)

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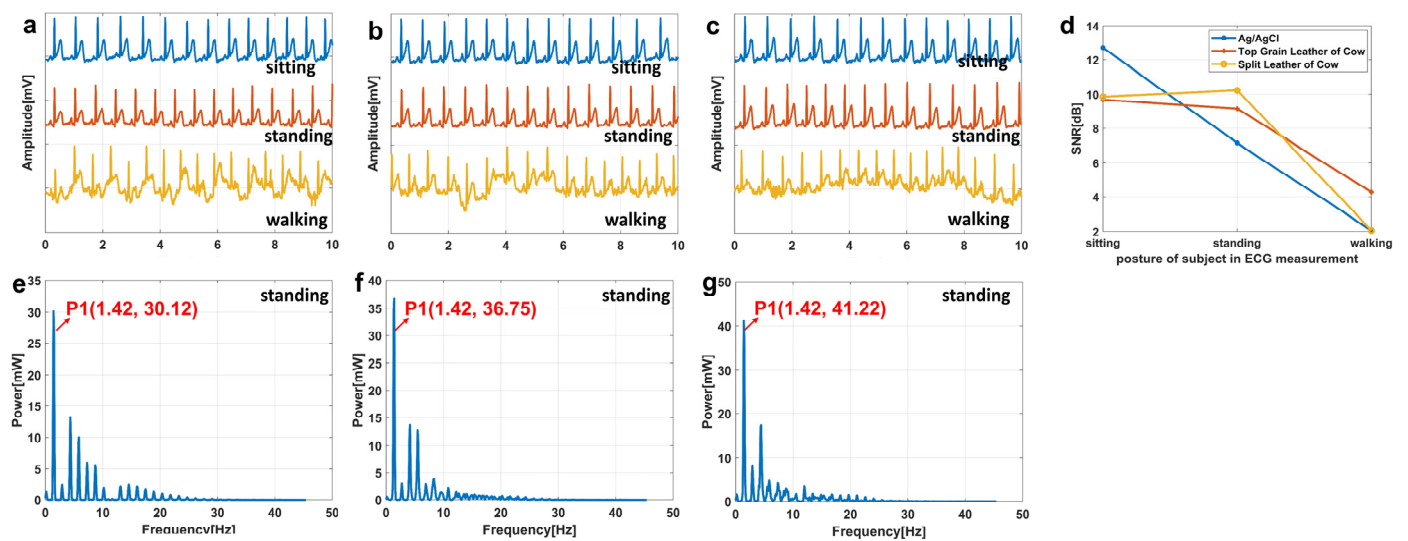
78 **Figure S8.** The ECG result of the fourth subject. The ECG of (a) the standard Ag/AgCl electrode and (b) (c) the  
 79 electrodes based on the top grain layer and split layer. (d) Signal-to-noise ratio (SNR) diagram. The power spectrum  
 80 of the standing posture of (e) the standard Ag/AgCl electrode (f) the electrode based on the top grain layer and (g) the  
 81 electrode based on the split layer. (The heart rates of the subject are 79.8, 74.46 and 74.46 beats per minute, which is  
 82 normal.)

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86 **Figure S9.** The ECG result of the fifth subject. The ECG of (a) the standard Ag/AgCl electrode and (b) (c) the  
 87 electrodes based on the top grain layer and split layer. (d) Signal-to-noise ratio (SNR) diagram. The power spectrum  
 88 of the standing posture of (e) the standard Ag/AgCl electrode (f) the electrode based on the top grain layer and (g) the  
 89 electrode based on the split layer. (The heart rates of the subject are 85.2, 79.8 and 69.0 beats per minute, which is  
 90 normal.)

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93 **Figure S10.** The ECG result of the sixth subject. The ECG of (a) the standard Ag/AgCl electrode and (b) (c) the  
 94 electrodes based on the top grain layer and split layer. (d) Signal-to-noise ratio (SNR) diagram. The power spectrum  
 95 of the standing posture of (e) the standard Ag/AgCl electrode (f) the electrode based on the top grain layer and (g) the  
 96 electrode based on the split layer. (The heart rates of the subject are all 85.2 beats per minute, which is normal.)

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