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13. Study on Surface Electricity. (VIII)

Measurement of Streaming Potential by Vibration Method. (2)

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In the preceding papar we related to a new method for the measurement of streaming potential as one of the applications of "U-effect I". But the experiment related gave only its possibility and had may defects on its practical devices, so that we have improved it in the following manner.

(1) Vibrating element.

In the former device we used an element of glass capillary filled with liquid in which Cu-electrodes were inserted tangentially from the both ends and sealed with rubber cement. But this time we used an element filled with liquid in which Pt -electrodes were inserted vertically from the capillary wall, and a fine glass pole was inserted from one end of the capillary in order to prevent the vibration of liquid in compliance with the vibration of the capillary wall. "Telex" glass was used.

(2) Amplitude of vibration.

The amplitude of mechanical vibration was represented by the measure of the valve voltmeter connected parallel to the moving coil.

(3) Amplifier.

We observed the frequency character of the amplifier.

(4) Streaming potential.

In the older device we measured the streaming potential by the height of the wave observed on the plate of the cathode ray oscillograph. Here we made a peak-voltmeter (UX 514) and measured the streaming potential by this arrangement.

With these improvements we measured the streaming potential of glass-KCI aq. interface in various concentration and also at various amplitude of vibration.

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14. Study on Surface Electricity. (IX)

Capacity Measurement at Mercury-solution Interface by Impedance Matching Method. (1)

Shizuo Ueda, Akira Watanabe and *Fukuju Tsuji.*

Various methods of capacity measurement at mercury-solution interfaces have been already deviced. The representative ones among them are calculation method of the second derivative of the electrocapillary curve, impedance bridge method and calculation method from the direct measurement of the charging current of the electrical double layer of increasing interface.