

Shikata Medal

Masuzo Shikata and the Polarograph

After graduating from the Department of Agriculture at Tokyo Imperial University in 1920, Masuzo Shikata went to Germany in 1922 as a research fellow of the Ministry of Education to study colloid chemistry and electrochemistry. Dissatisfied with the lack of precise measurement methods in colloid chemistry, he sought another study destination and visited universities across Europe. In 1923, while in Prague, Czechoslovakia, he met Jaroslav Heyrovský, who was researching dropping mercury electrode, and became strongly interested in fundamental research of interfacial electrochemistry. In June of the same year, he moved to Prague and began research on the relationship between applied voltage and electrolytic current.

At that time, experiments to record current-voltage curves were time-consuming as they involved manual switching of resistors, allowing for only two measurements per day at most. Therefore, there was a desire to automate this process. Shikata achieved this by rotating a drum wound with a resistance wire and sliding a contact to automatically vary the applied voltage. The electrolytic current was recorded by reflecting light from a light source onto a mirror attached to an ammeter and then onto photosensitive paper synchronized with the rotating drum. In this way, he completed the automatic recording device for current-voltage curves, called the "polarograph," during his study abroad period. This was the world's first instrument to automatically plot dependent variables against independent variables in experiments.

Upon returning to Japan in October 1924, Shikata, who had been appointed as an associate professor at the Faculty of Agriculture of Kyoto Imperial University, collaborated with Isamu Tachi, who joined as an assistant professor the following February, to operate the polarograph brought back from Prague. The first successful measurement of current-voltage curves was achieved on June 18, 1925. Since then, various events have been held to commemorate this day as "Polarograph Memorial Day." (For details, please refer to the Society's Journal, Vol. 61, No. 2).

About the Shikata Medal

The Society awards the Shikata Medal, named in honor of Masuzo Shikata's achievements, in two categories as per the Society's regulations:

"Shikata International Medal" to researchers, both domestically and internationally, who have made

significant contributions in the fields of electrochemical measurement methods, electrochemical reactions, electrochemical analysis methods, and other related areas of electrochemistry and are highly esteemed worldwide.

"Shikata Medal" as a research encouragement award to young members (up to 45 years of age as of April 1 of the award year) who have achieved outstanding research accomplishments with expectations for future development. However, for the person who has interrupted their R&D activities to engage in childbirth, childcare or nursing care, the age limit is extended in principle by up to three years in monthly increments corresponding to the period of absence. Please note here that the upper age limit shall not be applicable if the Shikata Medal Selection Committee approves.

The deadline for candidate recommendations is every year on **June 18, "Polarograph Memorial Day."**