SUETAKE Kunihiro

"Development of Microwave Absorbers and Establishment of Educational Technology"

1. Biography

1920-5-14 Birth, Graduated from Electrical Engineering Department of Tokyo Institute of Technology (1944-9), and finished five years Research Fellow(1949), Assistant of Electrochemical Research Laboratory (1949), Associate Professor of Tokyo Institute of Technology (1957-9), Doctor of Engineering (1957-9), Professor of Tokyo Institute of Technology (1963), Director of the Center for Research and Development of Educational Technology (1973), Professor Emeritus of Tokyo Institute of Technology (1981-4), Professor of Kanagawa University (1981-4), President of Japan Association of Educational Technology (1984-1986), and Professor Emeritus of Kanagawa University (2000).

Awarded: Inada-Award and Best Paper Award from Institute of Electronics and Communication Engineers, Industrial Education one hundred and tenth Anniversary Award, honored the Order of the Rising Sun, Gold Rays with Neck Ribbon, 2017-12-15 Pass away (97 years old).

2. Summary

SUETAKE Kunihiro developed microwave absorbers made by dielectrics carbon-containing foamed polystyrene. He also developed ferrite-tile absorber for very high frequency wave.

He was pioneer to establish the Educational Technology Study Group in the Institute of Electronics and Communication Engineers in 1967. He also established the Center for Research and Development of Educational Technology at Tokyo Institute of Technology in 1973. He worked to promote educational technology as a lecturer in government agency and academic societies.

3. Development of wave absorbers and his Textbooks on electronics

(1) Microwave absorber by polystyrene mixed with carbon

He invented foamed polystyrene mixed with carbon and developed a multi-layer microwave absorber with different carbon mixing ratio.

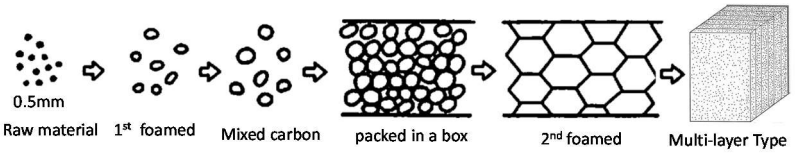


Fig.1 The manufacturing process of multi-layer absorber by polystyrene mixed with carbon

Since many anechoic chambers were constructed for the purpose of antenna research and experiments of electromagnetic noise reduction measures, he published the book "Illustrated EMC easy to understand" and contributed to the research on EMC (Electro Magnetic Compatibility).

(2) Development of Ferrite-tile wave absorber

He developed a ferrite-tile wave absorber that can obtain a wide band radio wave absorption characteristic despite its thin thickness. He named it the magnetic resistive sheet (Fig.2b) because

it is dual to the electrical resistive sheet (Fig.2a). He developed the ferrite wave absorbers which were used to reduce wave reflection from steel towers and wire mesh.

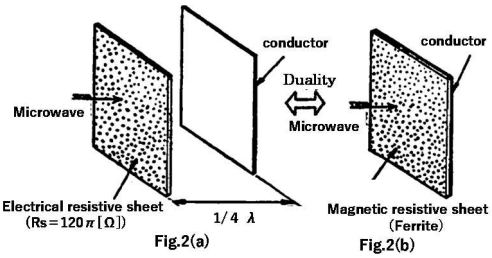


Fig.2(a) Fig.2(b)

4. Establishment of educational technology

(1) Achievements as a pioneer in educational technology

Since in 1967, he held a monthly Study Meeting to give an opportunity to have an interest in improving the quality of education of the engineering faculty. In 1973, he established the Center for Research and Development of Educational Technology at Tokyo Institute of Technology.

(2) Contribution to educational assistance in Southeast Asian countries

Under the commission of the Japan International Cooperation Agency (JICA), he promoted educational support projects for Thailand, the Philippines, Malaysia, etc., and visited Southeast Asian countries for many years, and made efforts to train educational leaders.

(3) Contribution to training industrial education leaders

For many years, he was in charge of planning and implementing the "Industrial Education Instructor Training Course" commissioned by the Ministry of Education. For his contributions, he received the 100th Anniversary Award for Industrial Education in 1994.

(4) Professor Suetake's class

He promoted lectures using two overhead projectors as shown in Fig. 3. In his class, various electric circuits were made on a transparent acrylic plate and explained while showing the movement of an ammeter (Fig,4), so it was easy to understand.

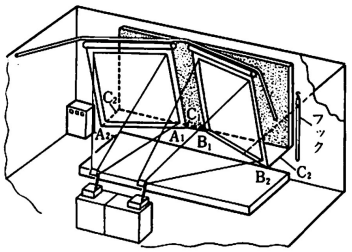
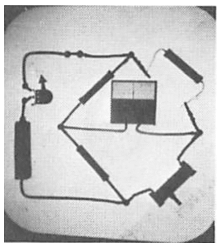


Fig.3


Fig,4

(5) Active lecturer in presentation techniques

After he retired from the university, he was active as a lecturer in presentation techniques at government agencies, academic societies, and companies.

(6) Writing of easy-to-understand textbook

He wrote textbooks for use in classes at an electrical university. The following books were designated as textbooks books in many universities and colleges of technology. "Microwave Circuits" Ohmsha, (1958.10), "Basic Electric Circuits I, II", Baifukan, (1971.11), and so on.

5. References

[1] "History of Tokyo Institute of Technology," Centenary Anniversary of Tokyo Institute of Technology, Kuramae Kougyoukai, pp.286-287, 1995-7.

[2] SUETAKE Kunihiro and SUGIURA Akira, " Illustrated EMC easy to understand", Unnecessary Radio Wave Problem Countermeasures Council, Ohmsha, pp.1-270, 1999.

[3] SUETAKE Kunihiro, "Better production method of [Poster Session]", IEICE Journal / Student Page, Vol.86, No.7, pp.520-526, 2003-7.

(2021-5-8 SHIMIZU Yasutaka presented)