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# Electrets - A long history and a bright future

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**Date: Tuesday, 15 May. 2018, 15:00-16:00**

**Venue: Faculty of Engineering Bldg. 2, 3F, 31A**

### Abstract:

The history of electrets can be traced back to Thales of Miletus (approx. 624-546 B.C.E.) who reported that pieces of amber (“electron”) attract or repel each other. The science of fundamental electrical phenomena is closely intertwined with the development of electrets which came under such terms as “electric”, “electrophore”, “charged/poled dielectric”, etc. until about one century ago. Modern electret research started with Oliver Heaviside (1850-1925), who defined the concept of a “permanently electrized body” and proposed the name “electret” in 1885, and Mototarô Eguchi, who experimentally investigated carnauba wax electrets at the Higher Naval College in Tokyo around 1920.

Today, we see a wide range of electret types, electret materials, and electret applications, which are being investigated and developed all over the world in a truly global endeavour. A classification of electrets will be followed by some examples of useful electret effects and exciting device applications in such areas as electromechanical and electroacoustical transduction, radiation dosimetry, gas filtration, switching devices, micro-energy harvesting, etc.

### Biology:

Reimund Gerhard, fellow of the American Physical Society (APS) and the Institute of Electrical and Electronics Engineers (IEEE), is professor at the University of Potsdam in Germany. He was the John B. Whitehead Memorial Lecturer in 2014 and the Bernhard Gross Memorial Lecturer in 2017. Presently, he is president of the IEEE Dielectrics and Electrical Insulation Society (DEIS).

