



HistoLab

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Condensator Straw Electroscope

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branch of study: electrodynamics

inventor: Alessandro Volta

The Condensator Straw Electroscope was first described by Alessandro Volta in 1787. Two thin straws are hung up inside of a jar so they can oscillate freely without being disturbed by moving air. The wire holding them is not just the mount but also the electrical connection to the bottom plate of the condensator mounted on top of the bottle neck. If the condensator is not charged both straws point straight to the ground.

Once the condensator is charged or brought near to an already charged condensator the straws are charged and move away from one another due to the same electrostatic charge. The angle formed between the two straws is proportional to the electrical charge causing this effect. The equilibrium of forces in the "charged" state makes it clear, that the mass of the straws, whilst being small, has a great effect on the precision of any measurement. As a consequence electroscopes with much lighter indicators were built such as gold-leaf electroscopes, yielding a greater precision or measurements.



further reading

Heilbron, J. L. (1979). *Electricity in the 17th and 18th centuries: a study of early modern physics*. Berkeley: University of California Press.

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