

# GENEALOGY DATABASE ENTRY

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Warburg, Emil Gabriel

1846 - 1931

DEGREE: PhD (physics)

DATE: 1867

PLACE: Berlin

TEACHER/RESEARCH ADVISOR: Magnus

in collaboraton with A. Kundt, furnished conclusive experimental confirmation that the inner friction and the heat conduction of a gas are independent of the pressure, investigated the decrease in velocity and increase in temperature of the boundary layer of gases and liquids flowing over surfaces, and showed that at constant pressure and volume, the specific heats of monatomic gases possess the value  $5/3$  predicted by theory; discovered and explained the hysteresis effect in ferromagnetic materials; ascertained that conductivity in quartz is 100 times greater along one axis than in the direction perpendicular to it; discovered the migration of magnesium and lithium ions through glass; discovered the electrochemical double layer and the existence of a potential difference between an electrode and the electrolyte; one of the founders of quantitative photochemistry and measured the first "quantum yield" by showing that for every photon absorbed by HBr, one molecule of  $H_2$  and one molecule of  $Br_2$  are formed; confirmed Planck's radiation formula.

1. *Dictionary of Scientific Biography*; Charles Scribner's Sons: 1970-1990; vol. 14, p170-172.
2. *Naturwiss.* **1922**, *10*, 823-828 and **1931**, *19*, 993-997.
3. *Chem. Ber.* **1931**, *64*, 195A.
4. *Forsch. Forts.* **1931**, *7*, 351.
5. *Alm. Akad. Wiss. Wien* **1932**, *82*, 312-314.
6. *Ann. Physik* **1931**, *11*, 521-524.
7. *Elektrotech. Z.* **1926**, *47*, 317.