

Notes from the Oesper Collections

The Siemens Elmiskop IA Electron Microscope

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The Oesper Collections have recently acquired a circa 1964 Siemens IA Elmiskop electron microscope (figures 1 and 2) which was being discarded by UC Environmental Health and Safety and which has now been placed on permanent display on the upper mezza-

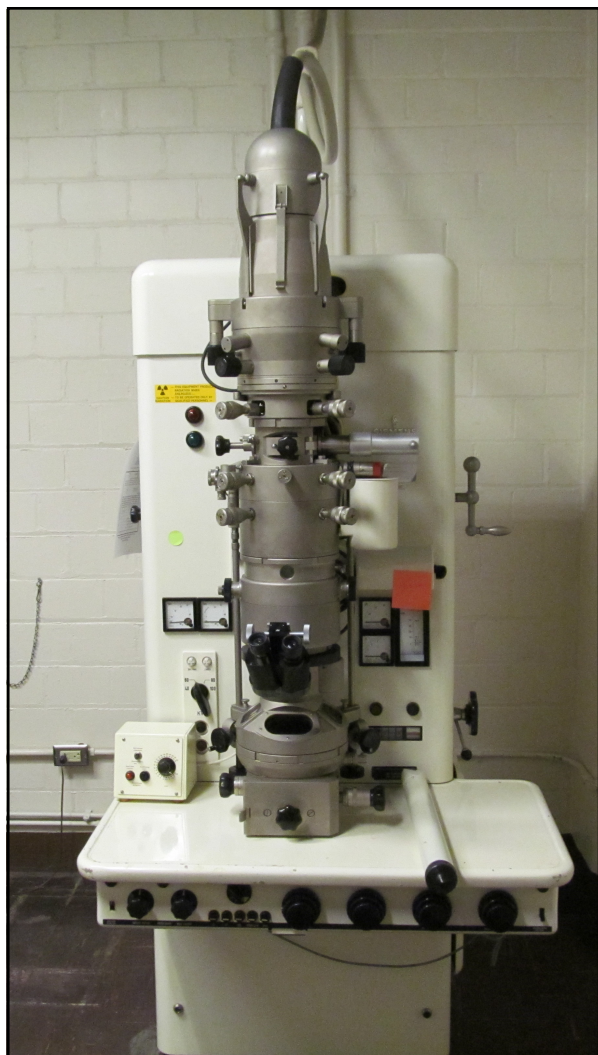


Figure 1. Front view of the Siemens IA Elmiskop in its original location at UC Environmental Health and Safety.



Figure 2. Side view of the Siemens IA Elmiskop in its original location at UC Environmental Health and Safety.

nine of the Chemistry-Biology Library in 503 Rieveschl. Similar instruments are on display at both the London Science Museum and the Physics Museum of the University of Queensland.

The first experimental electron microscope was

built in 1931 by German electrical engineers Max Knoll and Ernst Ruska (1). In 1937 Ruska (figure 3) was hired by Siemens to develop the first commercial instrument which went on the market in late 1939 (2). Further development was hampered by World War II. In 1954 Siemens introduced the Elmiskop I and in 1964 the slightly modified version on display in the Chemistry-Biology Library (3). Both instruments were widely popular because of their superior resolution and quality construction.

A light microscope employs glass lenses to control and focus the light beam and can resolve objects as small as 2000\AA . An electron microscope, like an old-fashioned television set, employs electromagnets to control and focus the electron beam and can resolve objects as small as 10\AA , including large protein molecules. Use of these instruments revolutionized the practice of microscopy in the 1950s and 1960s and led to a Nobel Prize for Ruska in 1986.

References and Notes

1. P. Hawkes, "Ernst Ruska," *Physics Today*, **1990**, 43(7), 84-85.
2. N. Rassmussen, P. Hawkes, "Electron Microscope," in R. Bud, D. J. Warner, Eds., *Instruments of Science: An*

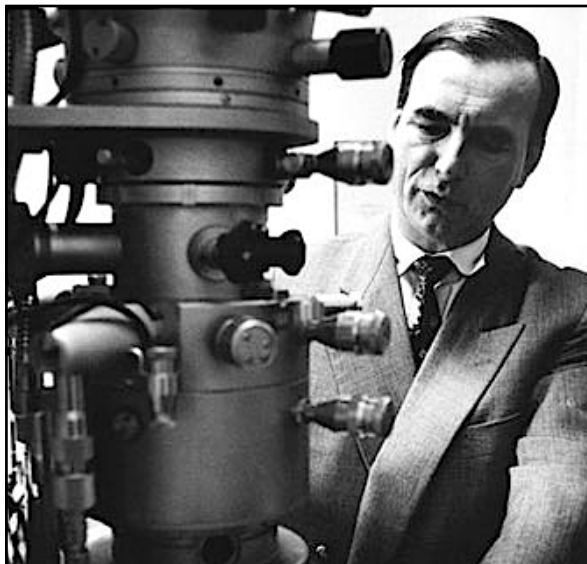


Figure 3. Ernst Ruska
(1906-1988)

- Historical Encyclopedia*, Garland: New York, NY, 1998, pp. 382-385.
3. *Elmiskop IA Instruction Manual*, 2 Vols., Siemens & Halske Aktiengesellschaft: Wernerwerk für Messtechnik, 1964.