

GILLES HOLST
1886-1968

Holst was born in Haarlem on 20 March 1886. His father, Casper Hendrik Holst, was director of a shipyard; his mother was Antje Boerlage. He attended the HBS in Haarlem and, after receiving his diploma in 1903, worked in industry for two years. In 1905 he enrolled at the Eidgenössische Technische Hochschule (ETH) in Zurich to study mechanical engineering, switching to mathematics and physics the following year; he received his diploma of *Gepprüfter Fachlehrer* in 1908 and remained at the ETH as assistant to H.F. Weber until 1910. In that year, he became an assistant of Kamerlingh Onnes at the Leiden Physics laboratory. Here Holst made the first measurements of the electrical resistance of metals at liquid-Helium temperatures and was thus intimately involved in the discovery of superconductivity. For his dissertation, Holst made measurements of the thermal properties of ammonia and methyl chloride, and for this work he received his doctorate from the ETH in 1914.

Having finished his education, Holst joined the Philips Gloeilampenfabriek in Eindhoven, where he founded the Physics laboratory, which quickly became the most important industrial research laboratory in the Netherlands. He published a series of articles on measurements of illumination, the properties of Tungsten, and gas discharges. More importantly, Holst surrounded himself with capable associates (e.g., H.B.G. Casimir), whom he led and inspired, and he had a keen sense of which scientific results were ready for practical application. The laboratory's studies of gas discharges, for instance, were inspired by Bohr's atomic theory; important studies were performed under Holst's direction on radio tubes, X-Ray tubes, and photocells. Holst's early ideas about radio as a means of communication were controversial, but he was strongly supported by the company's owner, Anton Philips. By the mid-1930s, Holst had put together a research group on the electrical and magnetic properties of solids to investigate the possibilities opened up by quantum theory. From 1929 to 1939, Holst served as honorary professor at Leiden.

Personally reserved, Holst was not a good public speaker or talented writer: his talent lay in inspiring others. He made sure that his staff maintained contacts with the foremost researchers in scientific fields, and encouraged them to publish in scientific journals and attend scientific conferences. Although Holst suffered increasingly from

depression, he carried on at the Philips laboratory until 1946, when he retired, retaining his connection with Philips as an advisor until 1956. From 1946 to 1956 he also served as 'curator' (governor) of the Technical College in Delft. He was instrumental in the founding of the Netherlands' second technical college in Eindhoven in 1957. He died in Waalre on 11 October 1968.

Primary works

Poggendorff, vol. 5, 553; vol. 6, 1150; vol. 7B, 2056-2057. Dissertation: *Les propriétés thermiques de l'ammoniaque et du chlorure de méthyle* (Leiden, 1914); inaugural lecture at Leiden: *Industrielaboratoria* (The Hague, 1930); *Electrische lichtbronnen* (Haarlem, 1920); many scientific papers, of which the most important are reprinted in H.B.G. Casimir and S. Gradstein, eds, *An Anthology of Philips Research* (Eindhoven, 1966).

Secondary sources

H.B.G. Casimir, *Jaarboek der Koninklijke Nederlandse Akademie van Wetenschappen* (1968-1969) 225-230; *idem*, 'G. Holst. Profile of a research director', *Science journal* 5 (July 1969): 81-84; *idem*, *Gilles Holst. Pionier van industrieel onderzoek in Nederland* (Holst lecture, Eindhoven, 1981). See also Casimir's *Haphazard Reality: Half a Century of Science* (New York: Harper and Row, 1983), *passim*, esp. 165-166 and 230-238. H.B.G. Casimir, in: *BWN*, vol. 1, 250-251.

[A.v.H.]