

Herbert Fröhlich- A Coherent, Collective Phenomenon

**An appreciation of
Professor Dr. Herbert Fröhlich FRS
and his contribution to biological systems.**

by
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- Fröhlich belonged to the generation of the founding-fathers of theoretical physics all of whom he knew well.
- Pauli said of him, *"In Fröhlich we have a physicist who can not only calculate but can think!"*
- Here he studied under a great teacher, Arnold Sommerfeld who set him a problem concerning the absorption of light by metals. In just over two years, Fröhlich produced a thesis containing a solution for which he received his D.Phil. from Munich University (without ever doing a bachelors degree).
- He was then offered an accepted a teaching post at Freiburg University and started what should have become a distinguished academic career in Germany by commencing his first book, "Elektronentheorie der Metalle".
- In 1933, the Nazis organized his dismissal from Freiburg.
- He was forced to emigrate and went to work with Frenkel at the Physico-Technical Institute in Leningrad until two years later, Stalinism forced his hurried departure to England.
- He came to Bristol University in 1935 with the aid of the Academic Assistance Council. Here, he worked under Professor Sir Nevill Mott in the H.H. Wills Physical Laboratory becoming interested in cosmic rays, and dielectrics.
- In cooperating with Heitler he became familiar with quantum field theory.
- With other German refugees, they were interned when Britain declared war on Germany in 1939 and it took Bristol University three months to secure their release.
- He did not join other German émigrés in going to the USA to work on the Manhattan Project.
- He remained at Bristol University until 1948 when Professor Chadwick invited him to take up the first chair of Theoretical Physics at Liverpool University.
- Here he made major advances in the theoretical physics of metals, dielectrics and semiconductors, mesons and superconductivity, and the application of theoretical physics to biology during his tenure from 1948 - 1973.
- Fröhlich showed me an aged manuscript that had just been returned to him by the Registrar of Bristol University. He had deposited it for safe keeping.

