

GENEALOGY DATABASE ENTRY

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Coulson, Charles Alfred

1910 - 1974

DEGREE: PhD

DATE: 1936

PLACE: Cambridge

TEACHER/RESEARCH ADVISOR: Lennard-Jones

investigated the electronic structure of molecules in momentum space, the relationship of bond-order to bond-length, hyperconjugation, conjugated molecules, London forces, and hydrogen bonding; developed the idea of sp^2 hybridization; came up with the first definition of bond order based on the molecular orbital method; promoted the description of solids as the limiting case of large molecules - a theory which gave rise to the field of low-dimensional solids; pioneer in the use of self-consistent calculations, contour integration, configuration interactions, three- and four-center integrals, and hypervirial relations in MO theory; opened up the electronic structures of strained and crowded molecules; developed first theory of the vacancy color centers in solids such as diamond; developed the description of III-V semiconductors in terms of localized chemical bonds.

1. *Biog. Mem. Fell. Roy. Soc.* **1974**, 20, 75-134.

2. *Dictionary of National Biography*; Smith, Elder & Co.: 1908-1986; (1971-1980), p182-183.