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Relativistic Electron in Solid Phase

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"For more than 150 years we have used electrons for practical purposes. Yet they were only discovered in 1897. Early models described electrons in a metal as a gas. In 1956 the Russian physicist Lev Landau (Nobel Prize 1962) explained why electrons in a metal behave like nearly independent particles. Landau provided a model which can predict how electrons behave in increasingly sophisticated electronic applications. The whole microelectronics industry is based upon knowledge of how electrons move. ***First practice, then theory, then practice again in constant interplay.*** *This is the stuff that science is made of",*
Courtesy: https://www.nobelprize.org/prizes/physics/1998/9580-practice-and-theory/

Abstract:
This article presents a discussion on some of the important scientific events that has shaped our understanding of the behaviour of electron in solid materials. By looking at the history, one can appreciate how pure theoretical equations have led to new discoveries, and how investigations of materials under various external and internal stimuli have broadened the knowledge.