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Each epoch in the history of solid state physics has its own focus, or a few focuses. 60 years ago, energy bands were such a focus: Fermi surfaces in metals and dispersion laws in semiconductors. The effect of electron-electron interaction was described in the framework of the Landau Fermi liquid theory in metals and stimulated a search for excitons in semiconductors and insulators. The challenging problem of superconductivity remained still unresolved. Predictions of a giant magnitude and anomalous sign of the g-factor in InSb looked to be the only promise for exciting spin physics in the future.

Currently, the landscape has changed drastically, and spin-orbit coupling became one of the central topics of solid state physics, including semiconductors, metals, and superconductors. Artificial spin-orbit coupling penetrated also into the physics of ultracold gases. Excitement embraces fundamental physics, especially since the discovery of topological phases of matter, and is motivated by numerous potential applications that are the subject of ongoing experimental research. The hallmark of topological bulk phases is their mapping into topologically stable surface modes. Strong violation of central symmetry near surfaces and interfaces manifests itself in a giant spin-orbit splitting of surface bands. This motivates research focused on surfaces.

On the experimental side, growing nearly perfect surfaces with atomic-size overlayers on them is a prerequisite for forming well-controlled surface states. Non less important are the techniques of imaging these states, and high resolution SARPES and STM spectroscopies are mutually complementary and highly efficient experimental tools. Guest Editors of this issue collected an excellent set of papers illuminating different aspects of the problem from theory through experimental results to instrumentation.

Application-motivated research on spin-orbit coupled systems is going in a number of different directions. To mention only a few, the Electric Dipole Spin Resonance (EDSR) is used for electric manipulation of electron spins in nanostructures, including qubits for processing quantum information. The perspectives of using Majorana bound states for topological quantum computing strongly stimulates the current search for Majoranas in spin-orbit coupled condensed matter systems. Despite huge efforts invested so far into interference spin devices of the spin transistor type, with ferromagnetic elements or without them, there are still no working devices of this sort. Surface layers with short spin precession lengths, similar to those described in some of the papers included in this issue, are anticipated to be prospective candidates for the nanometer scale spin interference devices. Also, spin-orbit coupling is considered as a critical mechanism responsible for driving domain walls in magnetic memory devices by electric current. Many of these applications require strong spin orbit coupling typical of the compounds including elements with high atomic numbers Z, and a number of such compounds was synthesized and demonstrated in recent years.

In conclusion, on a more personal note. The Editors graciously suggested including to the issue an English translation of my paper submitted to the Prague (1960) International Conference on Semiconductor Physics. The paper was published in the Conference Proceedings in Russian (because my English was too poor at that time) and it was not presented at the Conference (because I was not allowed to go to Prague). As a result, it was practically lost. However "Manuscripts do not burn", according to a provocative and enigmatic statement from "The Master and Margarita", a novel by Mikhail Bulgakov, one of the most brilliant Russian writers of 20th century. Because the statement turned out to be true, an English translation of that 1960 paper can be found in this issue. Remarkably, one of the principal results, toroidal surfaces of constant energy, has been noticed immediately, from the Conference Abstract written in English. Other results included prediction of EDSR that was discovered very soon and of a quantum phase transition in magnetic susceptibility discovered only recently.

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