I will overview recent developments of one of major frontiers of nuclear physics: structure of exotic nuclei. There have been well-established paradigms on the structure of atomic nuclei, such as density saturation, magic number/shell structure, shapes, etc. For instance, the magic numbers were proposed by Mayer and Jensen to be 2, 8, 20, 28, 50, … Such old paradigms are being challenged for exotic nuclei away from the beta-stability line on the nuclear chart. It has been shown by the author and his collaborators that characteristic features of nuclear forces do change magic numbers and shell structure in exotic nuclei from those of stable nuclei, leading to paradigm shift [1]. For instance, the tensor force varies spin-orbit splitting considerably depending on configurations, leading to, for example, rapid appearance of new magic number $N=16$ in exotic nuclei with $Z=8\sim 12$. The Fujita-Miyazawa three-body force raises neutron-single particle energies in neutron-rich nuclei, resulting in anomalous neutron drip line of O isotopes, for instance.

Such new aspects are being studied theoretically and experimentally. In particular, RI-beam laboratories as well as conventional ones have conducted many experiments discovering various exciting features. From Japan, not only theoretical initiatives mentioned above but also many new experimental data have been obtained particularly from RIKEN’s new facility, RIBF. This includes unexpected deformation of exotic Si isotopes, new (sub)magic number $N=34$ in exotic Ca isotopes, new isotopes in heavier regions, etc.

In this talk, not only an overview of the developments in the past but also perspectives over the future studies will be discussed, if possible.