

Extending the Chart of Nuclides: How to Create New (Super)Heavy Nuclei

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How and where are the heaviest chemical elements created in the universe? Where is the upper end of the periodic table? And what is the nature of the still obscure nuclear force? Such fundamental questions occupy nuclear physicists. The answers are mostly hidden in the properties of still unknown exotic nuclei, mainly located on the very neutron-rich side and at the upper end of the nuclide chart. But how does one populate these still vacant areas? The standard nucleosynthesis reactions, which are fragmentation, fission and fusion, are reaching their limits. Therefore, other pathways to exotic nuclei are needed. This talk will present an overview of emerging concepts and current experimental strategies aimed at accessing these unexplored territories.