



KONWERSATORIUM INSTYTUTU FIZYKI UMCS

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Exploring the Frontier of Superheavy Elements: Advancing the Limits of the Periodic Table

Oganesson, the heaviest element identified to date, was created through the collision of a ^{48}Ca projectile and a ^{249}Cf target. Californium, the most substantial actinide producible in quantities sufficient for superheavy nuclei synthesis, is pivotal in these experiments. Consequently, the creation of novel elements now depends on using projectiles heavier than calcium alongside enriched heavy actinides. Presently, laboratories globally are either developing or already utilizing beams of $^{48,50}\text{Ti}$, ^{51}V , and $^{52,54}\text{Cr}$.

These beams are also employed to generate new isotopes of existing elements through reactions with lighter actinides. The seminar will discuss the potential of certain experiments, particularly recent ones, aimed at discovering elements with atomic numbers 119 and 120.

Understanding the reaction mechanisms facilitated by these innovative beams is essential for pioneering new reactions. I will introduce a new model developed in Warsaw that elucidates the synthesis process.

Uprzejmie zapraszam wszystkich pracowników, doktorantów i studentów Instytutu Fizyki.

Prof. dr hab. Ryszard Zdyb
Dyrektor IF UMCS