

On Q Values and Other Energy Parameters for Superheavy Element Synthesis

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Abstract: Q value and optimal exciting energy of hypothetical superheavy nuclei in cold fusion reaction are calculated with relativistic mean field model and semiempirical shell model mass equation (SSME) and the validity of the two models is tested. To give useful references for the experiments in the superheavy nuclei synthesized in cold fusion reactions, the Q value, fusion barrier and optimal exciting energy for the possible target plus projectile combinations suggested by Gupta et al. are calculated and the most possible target plus projectile combinations are pointed out according to our calculations.

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Key words: superheavy nuclei, cold fusion, Q value

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