

# EXPERIMENTAL STUDY OF MCF PROCESSES AT DLNP OF JINR

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The Dzhelepov Laboratory of Nuclear Problems of JINR made a prominent contribution to the MCF experimental study. The Dubna group discovered the phenomenon of the  $dd\mu$ -molecule resonance formation [1] and later directly confirmed its existence by measurements of temperature dependence of the  $dd\mu$ -molecule formation rate [2]. This group was the first to experimentally investigate the muon catalyzed  $d - t$  fusion [3] and to confirm the theoretical predictions [4] of the high intensity of this process which induced the activity in the MCF study in the world.

Since 1997 Dubna MCF collaboration has been carrying out a large program of investigation of MCF processes in D/T and H/D/T mixtures at the JINR Phasotron [5]. The distinctive characteristic of our study is the use of the novel methods both in the measurements and in the experimental data analysis, which allows us to obtain accurate and reliable data not worse than those obtained at the meson facilities and surpassed them in fullness. The experimental method used by us made it possible to measure the MCF cycle parameters in the D/T mixture under a wide variety of mixture conditions.

The review of the MCF experimental study in Dubna is presented.

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