

^3He – ^4He DILUTION REFRIGERATOR, USED TO OBTAIN ULTRA-LOW TEMPERATURE (DOWN TO 25mK)

^3He – ^4He Dilution Refrigerator is the only device at the moment that allows to obtain an ultra-low temperature (down to 5mK) in a continuous mode (for several months and more). In 1966, one of the world's first ^3He – ^4He dilution refrigerators was created in Dubna under the leadership of B.S. Neganov. Since then, more than 10 ^3He – ^4He dilution refrigerators have been created in the Low Temperature Department of the DLNP JINR. At present, ^3He – ^4He dilution refrigerators are widely used in various fields of physics and technology: in elementary particle physics - for cooling a target material; in quantum computers - for cooling qubits; in condensed matter physics - to study the properties of matter at ultralow temperatures; in aerospace industry - for cooling detectors of telescopes; etc.

Section

Energy and materials science (Section 2)

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