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Application of low-energy, tunable-delay ultrashort electron bunch pairs for irradiation experiments

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On AREAL RF photogun linac at CANDLE, time-separated ultrashort electron bunch pairs are generated by means of temporal shaping of the laser pulses driving the photocathode. The free-space interferometric delay line method used for the laser pulse shaping provides the means for tailoring the beam characteristics such as the charge contrast and relative delay of the bunch pairs in the train. In this contribution, the details on generation and characterization of temporally modulated beams will be presented along with the description of the set of available control parameters for various applications. In addition, results of ongoing studies of the effects of high-dose rate irradiation on structural and optical properties of transparent thin films and glasses will be presented and discussed.

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Footnotes

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Yes

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