

P1 | **Application of the theory of excitons to study of the positronium in matter.
Optical transition during positronium formation in matter**

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Considerable similarity between a positronium atom (Ps) in matter and an exciton in a quantum dot is indicated. Following this, we apply the calculation regime from the theory of excitons to describe some aspects of formation of a Ps in matter. We consider the possibility of photonic deexcitation during Ps formation and show the way of calculation of its probability.

The photonic transitions speculated here, if detected, allows improving experimental studies of solid matter with positron techniques.