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Textured polycrystal for increasing of positrons production

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Now, positrons are produced in tungsten single-crystalline and amorphous targets, see, e.g., [1]. To regret, application of tungsten single-crystals is restricted because of a short dechanneling length of incident electrons. We propose to apply textured polycrystalline target
for increasing of the positron production. The polycrystalline target can be produced as a set rolled tungsten foils and installed behind of a thin tungsten single-crystalline target. Application of textured polycrystalline target can increase the probability of the channeling of incident electrons and, hence, increase production of positrons. Channeling of electrons in textured (molybdenum) polycrystal recently has been observed in [2]. The research was supported by the Ministry of Education and Science of the Russian Federation, project 3.2009.2014/K.

References

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[2] Y. Takabayashi, K. Ishiji, Observation of channeling effects for relativistic electrons in a polycrystal, NIM B
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