

Coco, S.; Corsaro, S.; Laudani, A.; Pollicino, G.; Dionisio, R.; Martorana, R.

COLLGUN: a 3D FE simulator for the design of TWTs electron guns and multistage collectors. (English) [Zbl 1157.78329](#)

Anile, Angelo Marcello (ed.) et al., Scientific computing in electrical engineering. Proceedings of the 5th international conference on scientific computing in electrical engineering (SCEE), Capo D'Orlando, Sicily, Italy, September 5–9, 2004. Berlin: Springer (ISBN 3-540-32861-0/hbk). Mathematics in Industry 9, 175-180 (2006).

Summary: In this paper a new simulator for the design of Traveling Waves Tubes (TWT) electron guns and multistage collectors is presented. The simulator is based on the 3-D FE discretization of the Poisson equation combined with a particle model for the solution of the Vlasov equation in the space charge limited regime.

For the entire collection see [\[Zbl 1096.00002\]](#).

MSC:

78A55 Technical applications of optics and electromagnetic theory

78A40 Waves and radiation in optics and electromagnetic theory

78M10 Finite element, Galerkin and related methods applied to problems in optics and electromagnetic theory

Software:

COLLGUN