



1. Title:	Strongly Multiplexed Micro Plasma Pulse EUV Source with Non-Destructive EUV Radiation Collimating-Focusing Structure
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#### 7. Abstract body:

A high frequency (3kHz) photon collection and projection device based on a plasma structure in the micro plasma pulsed (MPP) source has been demonstrated. The properties of the plasma collimating structure (PCS) has been characterized and the combined PCS/MPP source shows an etendue value suitable for multiplexing 100 or more units together, while staying within the 1-3 mm<sup>2</sup>.sr etendue requirement of a single source. A slit scan technique with tools of EPPRA and Phystex was used to measure the spatial and temporal profile of the in-band EUV radiation after collimating structure, yielding the value of radiation size and energy. Absolute measurements of EUV in-band radiation have been done. The energy value measured means that focusing of EUV in plasma structure takes place and has high efficiency. A numerical tool Z\* Blackbox Modelling Engine (Z\* BME) was used realistically in parametric scanning to explore the plasma dynamics in MPP discharge at EPPRA with transient ionization processes, non-equilibrium radiation transport, EUV emission, electrode heat loading and debris production to choose power supply parameters and to improve efficiency and lifetime of MPP source. The realization of a plasma collimating structure allows designing a fully scalable, strongly multiplexed EUV source, that is compact and free of complex ML or grazing incidence optics.