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Recent Progress in Steady-State Micro-Bunching Light Source Development

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Steady-State Micro-Bunching (SSMB) was proposed by Ratner and Chao in 2010 to generate high-power short-wavelength coherent radiation in an electron storage ring. To advance the SSMB development, an SSMB taskforce was established in Tsinghua University since 2017, in collaboration with several institutes around the world. In this talk, the recent progress achieved by the SSMB collaboration will be reviewed. More specifically, we will report the results of the SSMB proof-of-principle experiment conducted at the Metrology Light Source and present the conceptual design of an SSMB-EUV light source which can deliver 1 kW EUV radiation. The development progress of some key technologies for SSMB will also be briefly introduced, such as the laser enhancement cavity, the electron beam injection system and the accelerating unit of an SSMB storage ring.

Footnotes

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