

Seeding and Self-seeding Options at SACLA

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SACLA, the 2nd X-ray FEL facility in the world, has started user operation this March. The machine has been stably operated and a number of experimental results have been already obtained. In addition, several upgrade programs are in progress at SACLA and the top priority is put on the seeded FEL. In the hard x-ray region, we have investigated several configurations for the self seeding, including the scheme using the thin diamond single crystal, which has been demonstrated successfully in the LCLS. The results of numerical study are presented. Besides the self-seeding, we are also exploring the seeding FEL by means of the HHG and HGHG scheme especially in the soft x-ray region, which will be covered in the dedicated beamline to be constructed at SACLA in a couple of years. Recent results of the seeding experiments with an external HHG laser, which has been carried out in the test accelerator operating in the EUV region, are presented as well.