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Extreme light at CoReLS and its application to single-cycle pulse generation

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Extreme light at Center for Relativistic Laser Science (CoReLS) in Korea has been developed and currently its' output power reaches 4 PW. The output energy and the pulse duration are 83 J and 19.6 fs, respectively after the pulse compression. In addition, we have carried out the pulse compression experiment with thin fused silica plates using a 30 fs, 100 TW laser pulse. After compensating the group delay dispersion (GDD) induced during the supercontinuum generation, the laser pulse was compressed to 12.3 fs. Here the development of a 4 PW Ti:sapphire laser and the pulse compression toward single-cycle generation will be presented.

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