The intense hard x-rays from XFEL can create high excitation density conditions of a specific ionization state of the atoms in solid materials. About 20% of the atoms in a solid metal can be ionized in a very short time interval (<10fs) at XFEL intensity of 1020 W/cm². This well-ordered nonequilibrium condition is suitable for new hard-ray laser medium. Recently, we demonstrate a new type of mode-selective hard-ray lasers based on a distribution feedback Bragg (DFB) scheme.