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Radiation Measurements with InfraRed imaging Video Bolometer and Filtered AXUV Arrays in KSTAR[1] JUHYEOK JANG, NFRI, BYRON PETERSON, NIFS, SEUNGTAE OH, NFRI, INWOO SONG, KAIST, JAESUN PARK, ITER Organization, KIYOFUMI MUKAI, NIFS, WONHO CHOE, KAIST, JAYHYUN KIM, JUNGHEE KIM, NFRI, MATTHEW REINKE, ORNL, BYUNG-HO PARK, NFRI — The radiated power from the plasmas is a crucial parameter in fusion plasma study. In KSTAR, an InfraRed imaging Video Bolometers (IRVB) has been used for radiation measurement. The IRVB has advantages such as a flat sensitivity and a wide field of view. The FLIR SC7600 camera is used as a detector. The spatial and temporal resolutions are 10 ms and 9 cm, respectively. Tomographic reconstruction code provides 2-D cross-sectional radiation profiles and the total radiated power of plasmas. The KSTAR IRVB plays an important role in impurity seeding and plasma-divertor detachment experiments. In the krypton seeding experiment, ELM mitigation, suppression and ITB formation are achieved with increasing Kr radiation. IRVB also shows the poloidally asymmetric distribution of tungsten. Besides, AXUV-based fast bolometers are developed for shattered pellet injection (SPI) experiments. Poloidal and toroidal filtered AXUV arrays are designed to assess the cross sectional images and the toroidal peaking factor of SPI radiation, respectively.

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