

Abstract Submitted  
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**Tomography-based real-time spatial uniformity diagnostics for meter-sized plasmas**<sup>1</sup> WONHO CHOE, JUHYEOK JANG, SANGHOO PARK, JOO YOUNG PARK, Korea Adv Inst of Sci Tech — In this presentation, we show optical emission spectral tomography diagnostics developed to measure spatial uniformity of meter-sized large-area plasmas for display manufacturing. The lines of sight and detector location were selected based on tomographic reconstruction tests using synthetic phantom images. The developed collection optics system is rather simple, consisting of slits, plano-convex lenses, optical bandpass filters, and array detectors. Using the collection optics, the line-integrated emission was acquired from meter-sized rectangular radio-frequency plasma, which was developed for display manufacturing. From the measured emission, two-dimensional (2D) spatial distributions of argon atomic emissions were obtained through tomographic reconstruction based on the Phillips–Tikhonov algorithm. The 2D argon plasma emission profiles matches well with the shape of the electrode and etch profile. In addition, 2D profiles of the excitation temperature were obtained from the measured argon emissions.

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