

Abstract Submitted  
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**ECEI/MIR on KSTAR: Conceptual Design**<sup>1</sup> Z. SHEN, Z.G. XIA, C.W. DOMIER, N.C. LUHMANN, JR., University of California at Davis, H. PARK, Princeton Plasma Physics Laboratory — A plasma imaging diagnostic is being developed for the KSTAR tokamak to image electron temperature  $T_e$  profiles and fluctuations via Electron Cyclotron Emission Imaging (ECEI) and electron density  $n_e$  fluctuations via Microwave Imaging Reflectometry (MIR). The envisioned ECEI system consists of a pair of 32 element mixer arrays which span a frequency range of 172-216 GHz, yielding a  $32 \times 48$  or 1536 channel  $T_e$  image. The MIR system consists of a pair of 20 element mixer arrays with a frequency range of 104-152 GHz, yielding a  $20 \times 16$  or 320 channel  $n_e$  fluctuation image. Use of in-vessel reflective optics permits both systems to view the KSTAR plasma through a relatively small vacuum window. System details, including preliminary optical and electronics designs, will be presented.

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