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## 2.7 Simultaneous measurement of CVI, NeX and LiIII charge exchange lines on EAST

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Charge exchange spectra from the interaction of fully ionized Carbon impurity ions and injected neutral beam on EAST have been utilized to provide the plasma ion temperature and rotation velocity since the cCXRS was installed on EAST at 2014. However, the concentration of carbon became especially low on EAST with the tungsten divertor in the latest experimental campaign, it is necessary to investigate the CX lines from the other impurity ions. The cCXRS system was enhanced recently to extend its wavelength coverage and preserve the spatial channels at the same time. A pixel, back-illuminated frame-transfer CCD camera with on-chip multiplication gain was used. The bandpass filter centered on 529.1nm was removed and one entrance slit was used to enable a wide spectral band at one acquisition, and the emission lines of CVI at 529.1 nm, of NeX at 524.9 nm, and of LiIII at 516.7 nm could be observed simultaneously. The system contains 29 channels, and one channel is used for the real-time wavelength calibration. The simultaneous measurement of CVI, NeX, and LiIII lines was performed by puffing neon gas and dropping lithium power at the same time during the 2016 EAST experimental campaign. In the paper, the experimental hardware is described and preliminary measurements will be shown.

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