

Abstract Submitted  
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**Possibility of an H-like N recombination laser at 13.39 nm excited by capillary discharge** YUSUKE SAKAI, SHUNSUKE TAKAHASHI, MASATO WATANABE, AKITOSHI OKINO, EIKI HOTTA, Tokyo Institute of Technology — A capillary discharge soft X-ray laser is fascinating in its high efficiency due to direct energy conversion from the electrical discharge energy and spatial coherence taking advantage of the long plasma column. In order to shorten the wavelength of the laser and to put it into practical use, possibility of the lasing of an H-like N recombination 13.39 nm laser, which can be focused by using a Mo/Si multi-layer mirror, is investigated. Population inversion between principal quantum numbers  $n=2$  and  $n=3$  might be generated in the expansion phase after the maximum pinch utilizing fast pulsed current amplitude of over 50 kA with pulse width of about 100 ns. Temporal radiation intensity from the nitrogen plasma column is measured using a x-ray photo diode to evaluate optimum plasma parameter required to realize a 13.39 nm laser.

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