Overview of Atomic Spectroscopic Data for the Blue-X Water Window Program

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Thousands of spectral lines from dozens of ions are experimentally known in the water window between 2.3 and 4.4 nm. I will present an overview of the relevant critically evaluated spectroscopic data available in the NIST Atomic Spectra Database [1]. Emphasis will be given on those spectral lines that can be potentially used for the Blue-X project due to their strong intensities and/or high abundances of the corresponding ionization stages under typical experimental conditions of EUV lithography. Some representative results of detailed collisional-radiative simulations for the most promising lines will be presented.

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Yuri Ralchenko is currently with NASA/University of Maryland after leading the NIST Atomic Spectroscopy Group for many years. His scientific interests are in atomic and plasma spectroscopy, collisional-radiative modeling, spectroscopy of highly charged ions, and development of atomic databases and online tools. He is the APS Fellow and a recipient of several NIST awards.