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K-Shell Dielectronic Recombination for Si^{5+} and Ar^{9+} Ions SHAHIN ABDEL-NABY, Department of Physics, Beni-Suef University, FAYEZ SHAHIN, Department of Physics, Beni-Suef University, Egypt — Dielectroinic recombination (DR) is the dominant electron-ion recombination process for most of the ions found in low density photoionized plasmas and low-to-medium density electron collisionally ionized plasmas. Accurate DR rate coefficients are needed for plasma modeling. We report on K-shell DR cross sections and rate coefficients of Si^{5+} and Ar^{9+} ions. The DR cross sections are calculated in the angular momentum average scheme. The dominant contributions to the DR cross sections and rate coefficients are obtained from the $1s2s^22p^6np$ resonant states. The total DR rates increase as the effective charge of the ions increases and the peaks of these rates are shifted toward higher incident electron energies as the degree of ionization increases.

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