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**Electron Impact Excitation Collision Strengths For Ni XI.** NUPUR VERMA, Deen Dayal Upadhyaya College, Delhi University, India., ALOK JHA, MAN MOHAN, Department of Physics and Astrophysics, Delhi University, India. — In recent years, there has been considerable interest in the study of interaction of electrons and photons with ionized atoms, particularly with the iron group elements. Nickel is an important impurity in modern fusion research devices, especially in those where the vessel walls are constructed largely of high- nickel-content alloys (e.g. The Joint European Torus). We have used the R-matrix method to calculate electron impact collision strengths from the ground state to the first 16 fine-structure levels of argon–like Ni XI. The relativistic effects are incorporated in the Breit Pauli approximation by including one body mass correction, Darwin, and spin-orbit interaction terms in the scattering equations. Configuration interaction wave functions are used to represent the lowest 9 LS-coupled target states. The low energy region is dominated by closed channel (or Feshbach) resonances which perturb the otherwise smoothly varying background collision strength. The effective collision strengths are determined by integrating the collision strengths over a Maxwellian distribution of electron energies. Results are presented for the effective collision strengths for a wide temperature range. Our results are the only collision strengths and rate coefficients available for this ion. We believe that the data calculated in this work will be useful in solar, astrophysical and laser applications.

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