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Superconducting State Parameters of Al-Li Binary Alloys

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Abstract: Theoretical computation of superconducting state parameters (SSP) viz. electron-phonon coupling strength λ , Coulomb pseudopotential μ^* , transition temperature T_C , isotope effect exponent α and effective interaction strength $N_0 V$ of face centered cubic $Al_{1-C} Li_C$ binary alloys have been made extensively in the present work using a model potential formalism for the first time. A considerable influence of various exchange and correlation functions on λ and μ^* is found from the present study. The present results of the SSP are found in qualitative agreement with the available experimental data wherever exist.

Key Words: Pseudopotential, Superconducting state parameters, Binary alloys.

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