

Abstract Submitted
for the GEC14 Meeting of
The American Physical Society

Transport properties derived from ion-atom collisions: ${}^6\text{Li}$ - ${}^6\text{Li}^+$ and ${}^6\text{Li}$ - ${}^7\text{Li}^+$ Cases¹ MONCEF BOULEDROUA, Faculte de Medecine and Laboratoire de Physique des Rayonnements, Badji Mokhtar University, Annaba, Algeria, FOUZIA BOUCHELAGHEM, Physics Department, Badji Mokhtar University, Annaba, Algeria, LPR TEAM — This investigation treats quantum-mechanically the ion-atom collisions and computes the transport coefficients, such as the coefficients of mobility and diffusion. For the case of lithium, the calculations start by determining the gerade and ungerade potential curves through which ionic lithium approaches ground lithium. Then, by considering the isotopic effects and nuclear spins, the elastic and charge-transfer cross sections are calculated for the case of ${}^6\text{Li}^+$ and ${}^7\text{Li}^+$ colliding with ${}^6\text{Li}$. Finally, the temperature-dependent diffusion and mobility coefficients are analyzed, and the results are contrasted with those obtained from literature. The main results of this work have been recently published in [Phys. Chem. Chem. Phys. Vol. 16, 18751 (2014)].

¹This work has been realized within the frames of the CNEPRU project D01120110036 of the Algerian Ministry of Higher Education.

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Date submitted: 11 May 2014

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