

Supplementary Information for:

**Time-dependent wave packet dynamics study of the resonances in the
 $\text{H} + \text{LiH}^+(\nu = 0, j = 0) \rightarrow \text{Li}^+ + \text{H}_2$ reaction at low collision energies**

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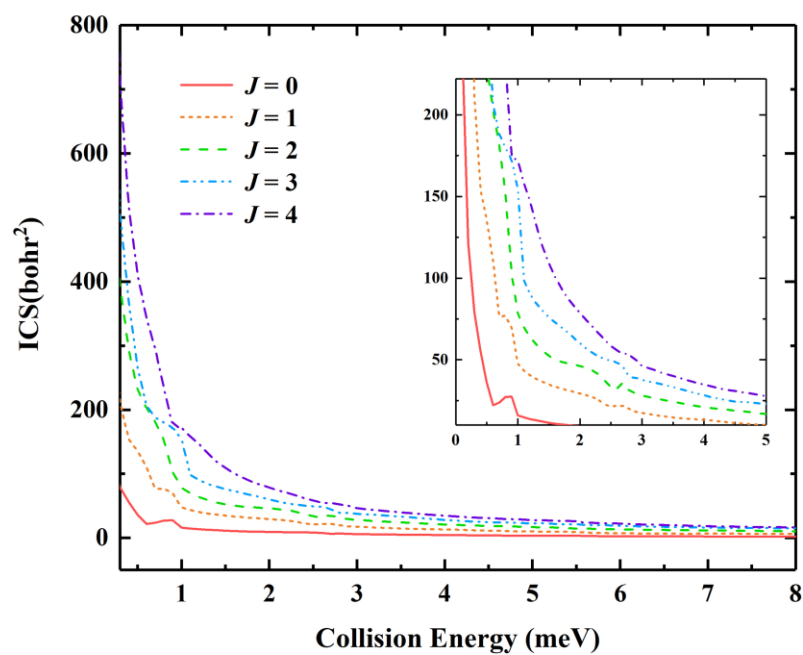


Fig. S1 Partial-wave cross sections for the $\text{H} + \text{LiH}^+ (v = 0, j = 0) \rightarrow \text{Li}^+ + \text{H}_2$ reaction calculated by the TICC method based on the MTBG-PES.

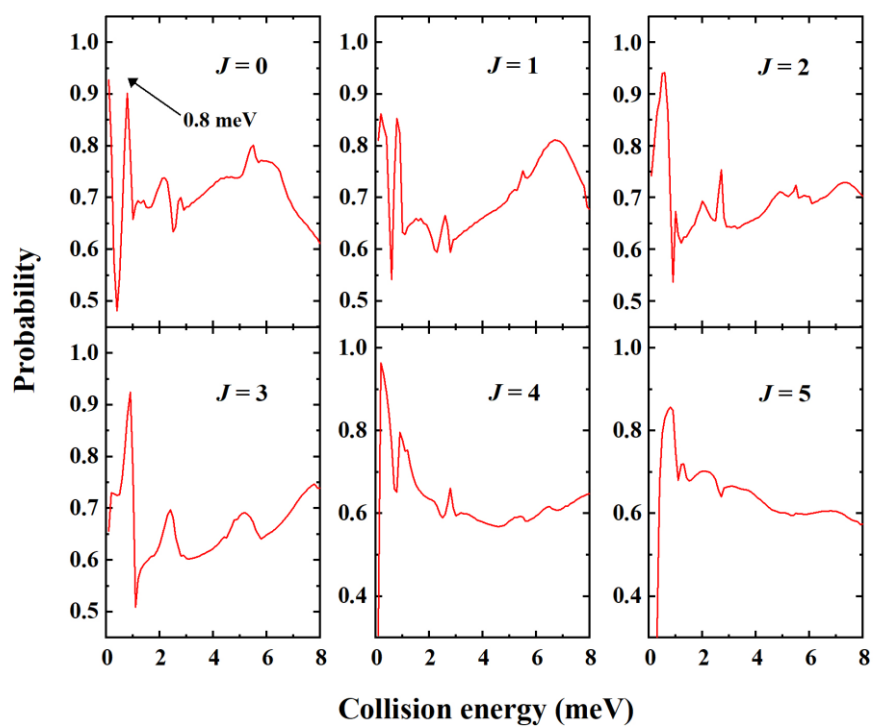


Fig. S2 Total reaction probabilities as a function of collision energy on the $\text{H} + \text{LiH}^+ (v = 0, j = 0) \rightarrow \text{Li}^+ + \text{H}_2$ reaction for $J = 0 - 5$ partial waves.

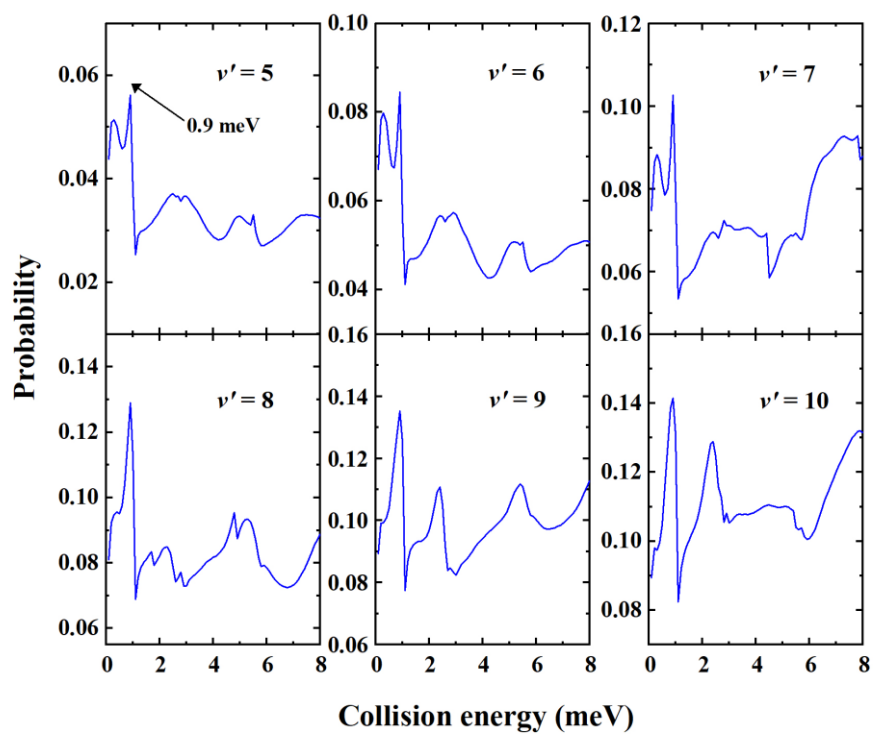


Fig. S3 Product vibrational state-resolved reaction probabilities as a function of collision energy on the $\text{H} + \text{LiH}^+ (v = 0, j = 0) \rightarrow \text{Li}^+ + \text{H}_2$ reaction for $J = 3$. The partial wave of $J = 3$ is selected because of its larger contribution.

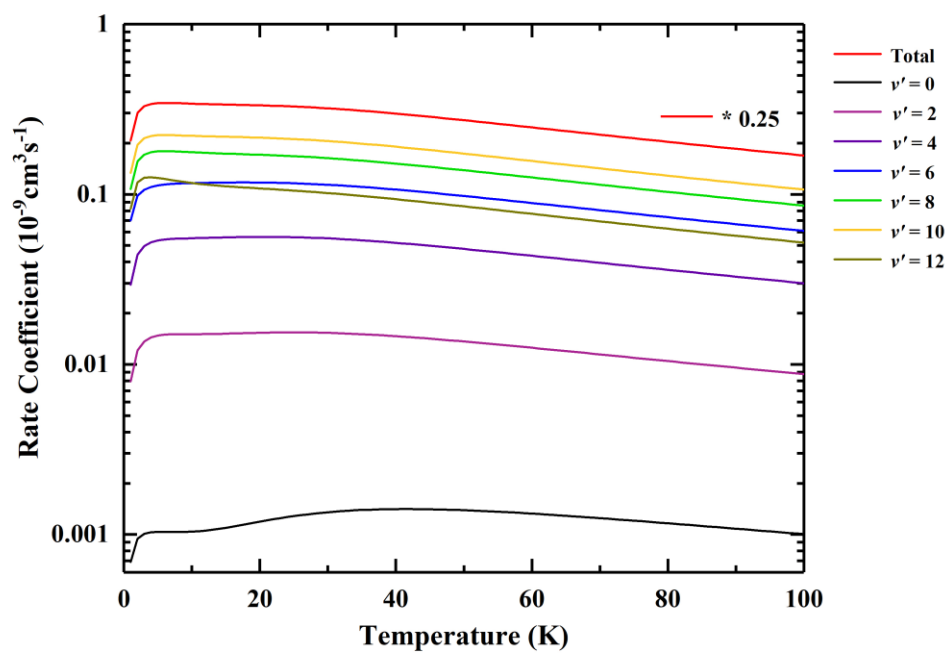


Fig. S4 Total and product vibrational state-resolved rate coefficients of the $\text{H} + \text{LiH}^+ (v=0, j=0) \rightarrow \text{Li}^+ + \text{H}_2$ reaction as a function of temperature.