

Figure 1 is a plot showing the relative rate of ionization,  $\sigma_{rel}$ , as a function of translational energy [eV] for the  $\text{H}^+ + \text{H}_2$  system. The x-axis represents translational energy [eV] from 0 to 1.6, and the y-axis represents  $\sigma_{rel}$  from 0 to 1.0. Eight curves are plotted, corresponding to different values of the quantum number  $m_J$  (0 to 7). The curves show a minimum around 0.1 eV and then increase with energy, with higher  $m_J$  values resulting in higher  $\sigma_{rel}$  values at higher energies.

