

# SCREENING AT A CHARGED SURFACE BY A MOLTEN SALT

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The screening of the electrical potential at a charged solid surface in a molten salt, KCl, has been investigated in a Molecular Dynamics simulation study. In the study the molten salt was confined between two rigid walls of equal and opposite charge. The relaxation time associated with the screening of the charged walls by the molten salt is found to be very short, and not dependent on diffusion. We also find that despite pronounced oscillatory structure in the charge density, the structure and dynamics of the ions close to the interface are very similar to those in the bulk.

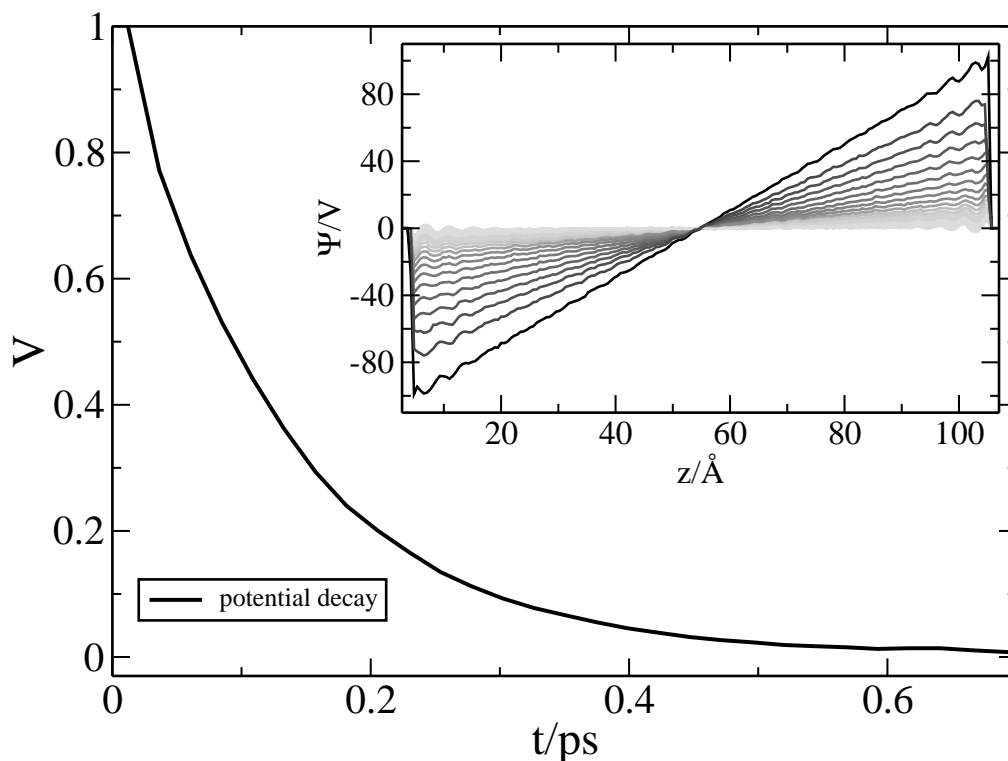


Figure 1: The relaxation of the electrical potential following a change in the value of the wall charges at  $t = 0$ . The inset shows the profiles of the Madelung potential across the cell for successive intervals of time of length  $2.4 \times 10^{-2}$  ps after this initial change. They are plotted black to light grey with 30 lines in total. In the main figure the normalised value of this potential at a reference position within the cell is plotted *versus* time.