

# Molecular Dynamics Simulation Report

Optimized Lattice Parameter:  $5.2823 \times 10^{-10}$  m

Melting Point: 120 K

Boiling Point: 165 K

Total Runtime: 4871.72 seconds

Best Verlet Algorithm: Velocity-Verlet (Adaptive)

Best Time Step:  $1.00 \times 10^{-15}$  s

Reason: Lowest average potential energy ( $-1.29 \times 10^{-20}$  J) and minimal energy drift ( $6.22 \times 10^{-24}$  J) during preliminary simulation.

