

Analytical Expression for the Radial Distribution Function of a Pure Peng-Robinson Fluid

Pradnya P. Ghoderao¹, Mohan Narayan¹ and Vishwanath H. Dalvi²

Institute of Chemical Technology

¹*Department of Physics*

²*Department of Chemical Engineering*

Mumbai 400019

E-mail: m.narayan@ictmumbai.edu.in, vishwanathdalvi@gmail.com

Abstract: *We propose a structure for the radial distribution function of a pure Peng-Robinson fluid. The fluid intermolecular potential is modelled as a square well. The formula contains parameters that can be expressed completely in terms of the well-parameters. We have compared our result with Monte Carlo simulation data for square-well fluids and found reasonable agreement.*