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sets were obtained via curve fitting with data collected for each compound in a range of distances. Bond stretching model with corresponding parameter set were calculated and presented in graphic form. The results are not exactly fitted but it is considered achieve in good agreement with the each set of data collected.

**Keywords:** Bond Stretching Polynomial; Force Field; Diatomic Molecules.

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## MPSK 15 - CONSTRAINED ARTIFICIAL BEE COLONY ALGORITHM FOR OPTIMIZATION PROBLEMS

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### ABSTRACT

Artificial Bee Colony (ABC) algorithm is a well known swarm intelligence algorithms which have shown a competitive performance with respect to other population-based algorithms. However, this algorithm has poor exploitation ability. To address this issue, an Improved Constrained Artificial Bee Colony (icABC) algorithm is proposed where three new solution search equations are introduced respectively to employed bee, onlooker bee and scout bee phases. This algorithm is tested on several constrained benchmark Problems. The numerical results demonstrate that the icABC is competitive with other state-of-the-art constrained ABC algorithm under consideration.

**Keywords:** Artificial Bee Colony, Swarm intelligence, Constrained optimization.

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## MPSK 16 - FORECASTING THE MORTALITY RATES OF MALAYSIAN POPULATION USING LEE-CARTER METHOD

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### ABSTRACT