APPENDIX

A.1) a). Best set of parameters of MBFA used to obtain convergence solution.

1. No of bacteria =20.
2. Run length unit =0.04.
4. Magnitude of attractant by a bacterium =1.08.
5. Probability of elimination of bacteria= 0.25.

b). Parameters used in GA model.

1. No of individual in population =40.
2. Probability of crossover =0.95.
3. Probability of mutation =0.05.

b) Parameters used in GA model.

1. No of bacteria =20.
2. Run length unit =0.04.
4. Magnitude of attractant by a bacterium =1.08.
5. Probability of elimination and dispersal of bacteria= 0.2.
6. Probabilities of Crossover and Mutation are same as those of GA.

d) Parameters used in ACO model.

1. Initial pheromone value =10^-6
3. Exploration constant=1.
4. Global pheromone decay rate=0.9.
5. Local pheromone decay rate=0.5.

e) Parameters used in PSO model.

2. Cognitive constant=1.
3. Social constant for swarm interaction=1.
4. Inertia weight factor $\omega_{max} =0.9$, $\omega_{min} =0.4$.
5. Acceleration Constant=2.
A.2) Flow chart information of proposed optimization technique (MBFA) in Fig.2.1.

Abbreviations used in the flow chart of MBFA

El: Elimination loop
Di: Dispersal loop
E: Number of elimination events
R: Number of reproduction events
N_c: Number of chemotactic processes
S_I: Swim length
S_{max}: Maximum swim length
N_B: Number of bacteria
LIST OF PUBLICATIONS

PAPERS PUBLISHED/ ACCEPTED


PAPERS UNDER REVIEW.