



Banafsheh ZAHRAIE

Home Country

Iran

Degree

**Post-Doctorate in
Operation
Optimization of Multi-
Reservoir Systems**

Expertise

**Water Resources
Engineering and
Management**

Research Focus

**Evolutionary
Computing in Water
Engineering**

Host University

**University of Tehran,
Iran**

**Fellowship Awarded
2007**

Banafsheh Zahraie lives in Tehran, Iran. Her parents motivated and fully supported her educational aspirations. She is married and also receives a great deal of support for her professional activities from her husband.

Banafsheh received her undergraduate, graduate and doctoral degrees in civil engineering from the School of Civil and Environmental Engineering at Amirkabir University of Technology (Tehran Polytechnic). Since 2002 she has been teaching in the School of Civil Engineering at the University of Tehran. An expert in water resources planning and management, during the past 10 years she has been involved in more than 20 applied research projects related to qualitative and quantitative aspects of water management.

In 2007 Banafsheh began a one-year post-doctoral research program in the School of Electrical and Computer Engineering at the University of Tehran. In her research projects, she has developed a methodology for applying an Adaptive Management (AM) approach to reservoir operation management. For this work she used a Varying Chromosome Length Genetic Algorithm (VLGA) model. In the AM approach she developed, the initial solutions for each year of the planning horizon were selected based on the similarity in hydrologic characteristics of different years. Application of this methodology to three case studies in Iran has shown a significant improvement in reduction of computation efforts of the GA model. In her post-doctoral research, this model was further developed to be stochastic. Also, the search and selection methods for the initial solutions were developed to increase the convergence speed of the model.

After finishing her post-doctorate, Banafsheh began teaching in the School of Civil Engineering at the University of Tehran, where she also continues to pursue one of her main research interests, in the area of applications of evolutionary computing in water engineering.