

Table of Contents

From Swarm Intelligence to Swarm Robotics	1
<i>Gerardo Beni</i>	
Swarm Robotics: From Sources of Inspiration to Domains of Application . .	10
<i>Erol Şahin</i>	
Communication, Diversity and Learning: Cornerstones of Swarm Behavior	21
<i>Tucker Balch</i>	
The SWARM-BOTS Project	31
<i>Marco Dorigo, Elio Tuci, Roderich Groß, Vito Trianni, Thomas Halva Labella, Shervin Nouyan, Christos Ampatzis, Jean-Louis Deneubourg, Gianluca Baldassarre, Stefano Nolfi, Francesco Mondada, Dario Floreano, and Luca Maria Gambardella</i>	
Pheromone Robotics and the Logic of Virtual Pheromones	45
<i>David Payton, Regina Estkowski, and Mike Howard</i>	
Distributed Localization and Mapping with a Robotic Swarm.	58
<i>Joseph A. Rothermich, M. İhsan Ecemiş, and Paolo Gaudiano</i>	
The I-SWARM Project: Intelligent Small World Autonomous Robots for Micro-manipulation	70
<i>Jörg Seyfried, Marc Szymanski, Natalie Bender, Ramon Estaña, Michael Thiel, and Heinz Wörn</i>	
An Overview of Physicomimetics	84
<i>William M. Spears, Diana F. Spears, Rodney Heil, Wesley Kerr, and Suranga Hettiarachchi</i>	
Lattice Formation in Mobile Autonomous Sensor Arrays	98
<i>Eric Martinson and David Payton</i>	
Swarming Behavior Using Probabilistic Roadmap Techniques	112
<i>O. Burçhan Bayazit, Jyh-Ming Lien, and Nancy M. Amato</i>	
Towards Dependable Swarms and a New Discipline of Swarm Engineering	126
<i>Alan F.T. Winfield, Christopher J. Harper, and Julien Nembrini</i>	
A Review of Probabilistic Macroscopic Models for Swarm Robotic Systems	143
<i>Kristina Lerman, Alcherio Martinoli, and Aram Galstyan</i>	
Order by Disordered Action in Swarms	153
<i>Gerardo Beni</i>	
Subject Index	173
Author Index	175



<http://www.springer.com/978-3-540-24296-3>

Swarm Robotics

SAB 2004 International Workshop, Santa Monica, CA,
USA, July 17, 2004, Revised Selected Papers

Sahin, E.; Spears, W.M. (Eds.)

2005, X, 182 p., Softcover

ISBN: 978-3-540-24296-3