

# **First International Conference on Quantum, Nano, and Micro Technologies**

**(ICQNM 2007)**

**Guadeloupe, French Caribbean  
2 - 6 January 2007**



**IEEE Catalog Number: CFP0770B-PRT  
ISBN: 978-1-4244-3131-1**

# Table of Contents

## ICQNM 2007

### Foreword

ICQNM 2007 Technical Program Committee

QSEC 2007 Technical Program Committee

---

### ICQNM1

---

Diner Based Channel Access Protocol for Nano-Machines .....1  
*Adeel Ghayur*

Comparison of Two Bounds of the Quantum Correlation Set.....6  
*David Avis and Tsuyoshi Ito*

Anisotropic Plasmon Resonance of Surface Metallic Nanostructures Prepared  
by Ion Beam Mixing .....9  
*V. Ovchinnikov and A. Priimagi*

### ICQNM2

---

DNA and Quantum Theory.....15  
*Mehdi Mirzaee and Milad Falahatchian*

DFT Studies of Closely Bound Ground State of  $(N_2-N_2)^{+1}$  Ionic Dimmer.....18  
*Ajmal H. Hamdani and Sheikh Shahdin*

Symbolic and Numeric Quantum Circuit Simulation.....23  
*Alexandre de A. Barbosa, Bernardo Lula, and Aécio Ferreira de Lima*

## ICQNM3

---

Continuous-Variable Quantum Information with Three-Mode Gaussian States: Allotment, Trade-Off, Teleportation, and Telecloning.....	27
<i>Gerardo Adesso, Alessio Serafini, and Fabrizio Illuminati</i>	
Biomimetic Nanotechnology and Nonlinear Dynamics .....	36
<i>S. Raiesdana, M.H. Gholpayeghani, and A.M. Nasrabadi</i>	
Transferring Proofs of Zero-Knowledge Systems with Quantum Correlations .....	42
<i>P. Mateus, F. Moura, and J. Rasga</i>	

## QSEC1

---

Quantum Key Distribution with Classical Bob .....	48
<i>Michel Boyer, Dan Kenigsberg, and Tal Mor</i>	
Qunits in Two Way Quantum Key Distribution .....	54
<i>Jesni Shamsul Shaari and Mohamed Ridza Wahiddin</i>	
Anonymous Transmission of Quantum Information .....	57
<i>Jan Bouda and Josef Šprojcar</i>	

## QSEC2

---

Architecture of the Secoqc Quantum Key Distribution Network.....	63
<i>Mehrdad Dianati and Romain Alléaume</i>	
Towards Model-Checking Quantum Security Protocols .....	70
<i>P. Baltazar, R. Chadha, P. Mateus, and A. Sernadas</i>	
Quantum Entanglement, Non-Locality, and Secure Computation .....	76
<i>Yao-Hsin Chou, I-Ming Tsai, Chin-Shyurng Fahn, Shi-Jinn Horng, and Sy-Yen Kuo</i>	