



Computational Nanomechatronics: A Pathway for Control and Manufacturing Nanorobots

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Proceedings of the International Conference on Computational Intelligence for Modelling Control and Automation and International Conference on Intelligent Agents Web Technologies and International Commerce [table of contents](#)

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Year of Publication: 2006

ISBN:0-7695-2731-0

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Publisher

IEEE Computer Society Washington, DC, USA

Bibliometrics Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Citation Count: 0

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[10.1109/CIMCA.2006.74](https://doi.org/10.1109/CIMCA.2006.74)

ABSTRACT

This paper describes an innovative work for nanorobot design and manufacturing, using a computer simulation and system on chip prototyping approach. The use of CMOS as integrated circuits, with the miniaturization from micro towards nanoelectronics, and the respective advances of nanowires are considered into the proposed model design and discussed as a practical pathway to enable embedded sensors for manufacturing nanorobots. The proposed nanorobot model is applied to hydrology monitoring. It can be useful for agriculture or environmental monitoring and management.

INDEX TERMS

Primary Classification:

B. [Hardware](#)

 B.7 [INTEGRATED CIRCUITS](#)

 B.7.1 [Types and Design Styles](#)

 **Subjects:** [Advanced technologies](#)

Additional Classification:

C. [Computer Systems Organization](#)

 C.3 [SPECIAL-PURPOSE AND APPLICATION-BASED SYSTEMS](#)

 **Subjects:** [Real-time and embedded systems](#)

F. [Theory of Computation](#)

 F.m [MISCELLANEOUS](#)

General Terms:

[Algorithms](#), [Design](#), [Theory](#)

Keywords:

[Control systems](#), [electromagnetic sensors](#), [environmental monitoring](#), [lithography](#), [mechatronics](#), [nanorobots](#), [nanotechnology](#), [nanotubes](#), [NEMS](#), [photonic](#).

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