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 8.**Accession number:** 10208174**Title:** Computational nanomechatronics: a pathway for control and manufacturing nanorobots**Authors:**[Cavalcanti, A.](#)¹; [Wood, W.W.](#); [Kretly, L.C.](#); [Shirinzadeh, B.](#)**Author affiliation:**

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Source:

2006 International Conference on Computational Intelligence for Modelling Control and Automation and International Conference on Intelligent Agents Web Technologies and International Commerce (CIMCA'06)

Publication date: 2006**Pages:** 6 pp.**Language:** English**ISBN-10:** [0-7695-2731-0](#)**Document type:** Conference article (CA)**Conference name:** 2006 International Conference on Computational Intelligence for Modelling Control and Automation and International Conference on Intelligent Agents Web Technologies and International Commerce (CIMCA'06)**Conference date:** 29 Nov.-1 Dec. 2006**Conference location:** Sydney, NSW, Australia**Publisher:** IEEE**Place of publication:** Piscataway, NJ, USA**Material Identity Number:** [YXA8-1901-844](#)**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.

Number of references: 38**Inspec controlled terms:** [agriculture](#) - [CMOS integrated circuits](#) - [control system CAD](#) - [environmental management](#) - [hydrology](#) - [intelligent sensors](#) - [mechatronics](#) - [microrobots](#) - [nanoelectronics](#) - [nanowires](#) - [system-on-chip](#)**Uncontrolled terms:** [computational nanomechatronics](#) - [nanorobot control](#) - [nanorobot manufacturing](#) - [nanorobot design](#) - [computer simulation](#) - [system on chip prototyping approach](#) - [CMOS](#) - [integrated circuits](#) - [nanoelectronics](#) - [nanowires](#) - [embedded sensors](#) - [hydrology monitoring](#) - [agriculture](#) - [environmental monitoring](#)**Inspec classification codes:** [C3390](#) Robotics - [C7420D](#) Control system design and analysis - [C3310C](#) Control applications in agriculture - [C3240N](#) Intelligent sensors**Treatment:** Practical (PRA)**Discipline:** Computers/Control engineering (C)**Database:** Inspec

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