FILTER THESE RESULTS

Search within results: Search

CONTENT TYPE

- Conference Publications (4)
- Journals & Magazines (2)

PUBLICATION YEAR

Single Year | Range

2002 — 2007

From: 2002

To: 2007

AUTHOR

- Cavalcanti, A. (5)
- Shirinzadeh, B. (2)
- Einav, S. (1)
- Fukuda, T. (1)
- Ikeda, S. (1)
- Kretly, L.C. (1)
- Hogg, T. (1)
- Rosenfeld, M. (1)
- Curtis, A.S.G. (1)
- Rosen, L. (1)

AFFILIATION

- Dept. of Mech. Eng., Monash Univ., Melbourne, Vic. (1)
- Fraunhofer Inst. for Comput. Graphics, Darmstadt, Germany (1)
- Comput. Sci. Dept., Darmstadt Univ. of Technol., Germany (1)
- Centre for Cell Eng., Glasgow Univ., UK (1)
- Electr. & Comput. Eng. Sch., Campinas, Brazil (1)
- Dept. of Mech. Eng., Monash Univ., Clayton, VIC (1)

PUBLICATION TITLE

- Nanotechnology, IEEE Transactions on (1)
- Nanotechnology, 2002. IEEE-NANO 2002. Proceedings of

SEARCH RESULTS

You searched for: **Medical Nanorobot Circuit**

You Refined by:
Publication Year: 2002 - 2007

6 Results returned

Sort by: Relevance

Select All on Page | Deselect All

Set Search Alert | Download Citation | Save to Project | Email Selected Results | Print | Export Results

Assembly automation with evolutionary nanorobots and sensor-based control applied to nanomedicine

Cavalcanti, A.
Nanotechnology, 2002. IEEE-NANO 2002. Proceedings of the 2002 2nd IEEE Conference on
Digital Object Identifier: 10.1109/NANO.2002.1032215
Publication Year: 2002 , Page(s): 161 - 164
IEEE CONFERENCE PUBLICATIONS

Quick Abstract | PDF (415 KB)

The author presents a new approach within advanced graphics simulations for the problem of nanoassembly automation and its application for medicine. The problem under study concentrates its main focus on nanorobot autonomous control for assembly manipulation and the use of evolutionary competitive agents as a suitable way to warranty the robustness of any proposed model. Thereby the presented paper summarizes as well distinct aspects of some techniques required to achieve a successful nanoplanning system design and its simulation visualization in real time. View full abstract»

Hardware architecture for nanorobot application in cerebral aneurysm

Cavalcanti, A.; Shirinzadeh, B.; Fukuda, T.; Ikeda, S.
Nanotechnology, 2007. IEEE-NANO 2007. 7th IEEE Conference on
Digital Object Identifier: 10.1109/NANO.2007.4601179
Publication Year: 2007 , Page(s): 237 - 242
IEEE CONFERENCE PUBLICATIONS

Quick Abstract | PDF (342 KB)

This paper presents an innovative hardware architecture for medical use of nanorobots proposed as an advanced and precise tool for brain aneurysm instrumentation and diagnosis. The feasibility of the outlined architecture is supported by nanobioelectronics, clinical data, and wireless technologies, as embedded integrated system devices for molecular machine data transmission and control upload. The upcoming therapeutic possibility of using nanorobots for aneurysm treatments is the natural result from some recent developments and trends in nanoelectronics, wireless communication, remote power transmission, quantum dots, nanotubes, SOI, lithography, biomedical instrumentation, genome mapping, and photonics. To illustrate the proposed

the 2002 2nd IEEE Conference on (1)
- NanoBioscience, IEEE Transactions on (1)
- Electronics, Circuits and Systems, 2004. ICECS 2004. Proceedings of the 2004 11th IEEE International Conference on (1)
- Micro-NanoMechatronics and Human Science, 2006 International Symposium on (1)
- Nanotechnology, 2007. IEEE-NANO 2007. 7th IEEE Conference on (1)

TOPIC

- Components, Circuits, Devices & Systems (6)
- Bioengineering (3)
- Fields, Waves & Electromagnetics (2)
- Computing & Processing (Hardware/Software) (2)
- Engineered Materials, Dielectrics & Plasmas (2)
- Robotics & Control Systems (2)
- Engineering Profession (2)
- Communication, Networking & Broadcasting (1)
- Transportation (1)
- Signal Processing & Analysis (1)

CONFERENCE LOCATION

- Nagoya (1)
- Hong Kong (1)

approach, we applied advanced 3D simulation techniques as a practical choice on methodology for medical nanorobotics architecture and integrated system prototyping. View full abstract»

Nanorobotics System Simulation in 3D Workspaces with Low Reynolds Number

Cavalcanti, A.; Hogg, T.; Shirinzadeh, B.
Micro-NanoMechatronics and Human Science, 2006 International Symposium on
Digital Object Identifier: 10.1109/MHS.2006.320269
Publication Year: 2006 , Page(s): 1 - 6
IEEE CONFERENCE PUBLICATIONS

Quick Abstract | PDF (7465 KB)

We present a computational approach to enable the development of nanorobots operating in a fluid environment relevant for medical applications. Unlike the case of larger robots, the dominant forces in this environment arise from viscosity of low Reynolds number fluid flow and Brownian motion and such parameters are described throughout the paper. Hence, this paper describes a practical simulator that allows fast design methodology comparing various control algorithms for nanorobots and their suitability for different tasks. The simulator includes obstacles and identifiable targets, thereby providing a suitable environment for a typical nanorobot task: maintaining desired chemical concentrations near specific target areas View full abstract»

Nanorobotic challenges in biomedical applications, design and control

Cavalcanti, A.; Rosen, L.; Kretly, L.C.; Rosenfeld, M.; Einav, S.
Electronics, Circuits and Systems, 2004. ICECS 2004. Proceedings of the 2004 11th IEEE International Conference on
Digital Object Identifier: 10.1109/ICECS.2004.1399714
Publication Year: 2004 , Page(s): 447 - 450
IEEE CONFERENCE PUBLICATIONS

Quick Abstract | PDF (651 KB)

Ongoing developments in molecular fabrication, computation, sensors and motors will enable the manufacturing of nanorobots - nanoscale biomolecular machine systems. The present work constitutes a novel simulation approach, intended to be a platform for the design and research of nanorobot control. The simulation approach involves a combined and multi-scale view of the scenario. Fluid dynamics numerical simulation is used to construct the nanorobotic environment, and an additional simulation models nanorobot sensing, control and behavior. We discuss some of the most promising possibilities for nanorobotics applications in biomedical problems, paying a special attention to a stenosed coronary artery case. View full abstract»

Assembly automation with evolutionary nanorobots and sensor-based control applied to nanomedicine

Cavalcanti, A.
Nanotechnology, IEEE Transactions on
Volume: 2 , Issue: 2
Digital Object Identifier: 10.1109/TNANO.2003.812590
Publication Year: 2003 , Page(s): 82 - 87
Cited by: 21
IEEE JOURNALS & MAGAZINES

Quick Abstract | PDF (1035 KB)

The author presents a new approach within advanced graphics simulations for the problem of nano-assembly automation and its application for medicine. The problem under study concentrates its main focus on nanorobot control design for assembly manipulation and the use of evolutionary competitive agents as a suitable way to warranty the robustness on the proposed model.

Thereby the presented paper summarizes as well distinct aspects of some techniques required to achieve a successful nano-planning system design and its simulation visualization in real time. View full abstract»

Comment on "Nanorobotics control design: a collective behavior approach for medicine"

Curtis, A.S.G.

NanoBioscience, IEEE Transactions on

Volume: 4 , Issue: 2

Digital Object Identifier: 10.1109/TNB.2005.850470

Publication Year: 2005 , Page(s): 202 - 203

IEEE JOURNALS & MAGAZINES

Quick Abstract | PDF (41 KB)

Following the paper by Calcavani and Freitas (see ibid., vol.4, no.2, p.133-40, 2005), the limitations on nanorobot design and activity imposed by Brownian motion events, communication problems, and the nature of the intercellular space are discussed. It is shown that severe problems exist for a nanorobot designed to enter tissues for therapeutic purposes when it is smaller than about 1 μm in any one of its dimensions.

View full abstract»

Sort by: Relevance

Select All on Page | Deselect All