

References
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Part 1

- [N1] Robert F. Service, DNA ventures into the world of designer materials, *Science*, 277, 22 August 1997, pp.1036-1037.
- [N2] Sandeep Kumar Vashist, Rupinder Tewari, Inderpreet Kaur, Ram P. Bajpai, Lalit M. Bharadwaj, Smart-drug delivery system employing molecular motors, *Proceedings of ICISIP -2005*, pp.441-446.
- [N3] Tony Jun Huang, Yi Liu, Branden Brough, et al., A nano-chemo-mechanical actuator based on artificial molecular machines, *Proc. of 18th IEEE Intl. Conf. on MEMS 2005*, 30 Jan.-3 Feb. 2005, pp. 871-874.
- [N4] Han Ying-Rong, Zhan-Yong Zhao Tong-Jun, et al., The use of an 'effective potential' to describe the directed motion of a two-state molecular motor, *Proceedings of the 28th IEEE EMBS Annual International Conference*, New York City, USA, Aug 30-Sept 3, 2006., pp.640-643.
- [N5] Marina Alexandra Lyshevski, Brownian dynamics: molecular systems modeling and control, *Prof. of 2004 4th IEEE Conference on Nanotechnology*, pp. 225-227.
- [N6] Alf Månsson, Mark Sundberg, Richard Bunk, et al, Actin-based molecular motors for cargo transportation in nanotechnology – potentials and challenges, *IEEE Transactions on Advanced Packaging*, vol.28, no.4, November 2005, pp. 547-555.
- [N7] <http://www.nanonets.org/>
- [P1] Takashi Yokoyama, Shiyoshi Yokoyama, Toshiya Kamikado, Yoshishige Okuno & Shinro Mashiko, Selective assembly on a surface of supramolecular aggregates with controlled size and shape, *Nature*, vol.413, 11 October 2001, 619-621.

Part 2

- 1A*
- [1A.1] <http://en.wikipedia.org/wiki/Cyberinfrastructure>
- [1A.2] <http://www.scat.or.jp/urcf/>
- 1B*
- [1B.1] Jian-Qin Liu and Katsunori Shimohara, *Biomolecular Computation for Bionanotechnology*, Botson&London: Artech House, Jan. 2007.
- [1B.2] Albert Bruce, et al, *Molecular Biology of the Cell*, Garland Science, 4th Edition, 2002.
- [1B.3] http://en.wikipedia.org/wiki/Main_Page
- 2A*
- [2A.1] Johannes L. Bos, Glowing switches, *Nature*, Vol.411, 28 June 2001, pp.1006-1007.
- [2A.2] Naoki Mochizuki, Shigeko Yamashita, Kazuo Kurokawa, et al, Spatio-temporal images of growth-factor-induced activation of Ras and Rap1, *Nature*, vol.411, 28 June 2001, pp.1065-1068.
- [2A.3] Igor L. Medintz, H. Tetsuo Uyeda, Ellen R. Goldman and Hedi Mattoussi, Quantum dot bioconjugates for imaging, labeling and sensing, *Nature Materials*, Vol. 4, June 2005, pp.435-446.
- [2A.4] Emilla Galperin, Vladislav V. Verkhusha & Alexander Sorkin, Three-chromophore FRET microscopy to analyze multiprotein interactions in living cells, *Nature Methods*, Vol.1 No.3, December 2004, pp. 209-217.
- [2A.5] Michael Eisenstein, New fluorescent protein includes handy on-off switch, *Nature Methods*, Vol.2 No.1 January 2005, pp.8-9.
- [2A.6] Melissa D. Shults, Kevin A Janes, Douglas A Lauffenburger & Barbara Imperiali, A multiplexed homogeneous fluorescence-based assay for protein kinase activity in cell lysates, *Nature Methods*, Advanced Online Publication, published online 23 March 2005; DOI:10.1038/NMETH747
- [2A.7] W. Andy Tao, Bernd Wollscheid, Robert O'Brien, et al., Quantitative phosphoproteome analysis using a dendrimer conjugation chemistry and tandem mass spectrometry, *Nature Methods*, Vol.2 No.8, August 2005, pp. 591-598.
- [2A.8] Atsushi Miyawaki, Asako Sakaue-Sawano and Hiroshi Hama, The spatial and temporal dynamics of intracellular signaling, *Sebutsu Butsuri (Biological Physics)*, 44 (6), 2004, pp.276-280, (in Japanese).

[2A.9] M. R. Philips, Imaging signal transduction in living cells with fluorescent proteins, *Sci. STKE*, tr28 (2005).
2B

[2B.1] Rodolphe Sepulchre, et al, Stabilization of planar collective motion: all-to-all communication, *IEEE Trans. on Automatic Control*, 52(5), May 2007; pp.811-824.

[2B.2] N. Elia, When Bode meets Shannon: control-oriented feedback communication schemes, *IEEE Trans. on Automatic Control*, Vol.49, No.9, Spet.2004, pp.1477-1488.

[2B.3] K. Sohrabi, W. Merrill, J. Elson, et al., Methods for scalable self-assembly of ad hoc wireless sensor networks, *IEEE Trans. On Mobile Computing*, Vol.3 No.4, Oct.-Dec. 2004, pp. 317-331.

[2B.4] João P. Hespanha, et al., A survey of recent results in networked control systems, *Proceedings of the IEEE*, 95 (1), Jan. 2007, pp.138-162.

[2B.5] John Baillieul and Panos J. Antsaklis, Control and communication challenges in networked real-time systems, *Proceedings of the IEEE*, 95 (1), Jan. 2007, pp.9-28.

[2B.6] Mianyu Wang, et al., Distributed cooperative control for adaptive performance management, *IEEE Internet Computing*, Jan./Feb. 2007, pp.31-39.

[2B.7] Zaiping Chen, Liang Liu, Jiangfeng Zhang, Observer based networked control systems with network-induced time delay, 2004 IEEE International Conference on Systems, Man and Cybernetics, 10-13 Oct. 2004, vol.4, pp.3333 – 3337.

[2B.8] Y.Tipsuwan, Mo-Yuen Chow, Gain scheduler middleware: a methodology to enable existing controllers for networked control and teleoperation - part I: networked control, *IEEE Transactions on Industrial Electronics*, Volume 51, Issue 6, Dec. 2004, pp.1218 – 1227.

[2B.9] Jin Wu, Fei-Qi Deng, Jing-Guang Gao; Modeling and stability of long random delay networked control systems, *Proceedings of 2005 International Conference on Machine Learning and Cybernetics*, 2005, 18-21 Aug. 2005, Volume 2, pp. 947 – 952.

[2B.10] Dejun Mu, Lei Fu, Guanzhong Dai; Research on Generalized Predictive Control Algorithm of Networked Control System, *Chinese Control Conference*, 2006, 7-11 Aug. 2006, pp.119 – 122.

[2B.11] Linbo Xie, Weiyi Zhao, Zhicheng Ji; LQG Control of Networked Control System with Long Time Delays using delta-operator, *Sixth International Conference on Intelligent Systems Design and Applications*, 2006. ISDA '06, Oct. 2006, Volume 2, pp.183 – 187.

[2B.12] Zhongqiang Wu, Yunshuang Wu, Xiaochen Hao; Stability Analysis of Networked Control Systems with Bounded Input, *The Sixth World Congress on Intelligent Control and Automation*, 2006. WCICA 2006, Volume 1, pp. 4504 – 4508.

[2B.13] Kyung Chang Lee, Suk Lee, Man Hyung Lee; QoS-based remote control of networked control systems via Profibus token passing protocol, *IEEE Transactions on Industrial Informatics*, Volume 1, Issue 3, Aug. 2005, pp.183 – 191.

[2B.14] Ling-Fang Chang, Hui-Guang Li; A class of nonlinear networked control system based on exact T-S model, *Proceedings of 2005 International Conference on Machine Learning and Cybernetics*, 2005, 18-21 Aug. 2005, Volume 2, pp.808 – 812.

[2B.15] Wu Jianguo, Zhu Qixin, Lu Guoping, Hu Shousong; The output feedback control of deterministic networked control systems, *Fifth World Congress on Intelligent Control and Automation*, 2004. WCICA 2004, 15-19 June 2004 Volume 2, pp.1334 – 1337.

[2B.16] Huaguang Zhang, Dedong Yang, T. Chai; Guaranteed Cost Networked Control for T-S Fuzzy Systems With Time Delays, *IEEE Transactions on Systems, Man and Cybernetics, Part C: Applications and Reviews*, Volume 37, Issue 2, March 2007, pp.160 – 172.

[2B.17] Chen Peng, Dong Yue; Suboptimal Guaranteed Cost Controller Design for Networked Control Systems, *The Sixth World Congress on Intelligent Control and Automation*, 2006. WCICA 2006. Volume 1, 2006, pp.224 – 228.

[2B.18] Qixin Zhu, Guoping Lu, Jianyun Cao, Shousong Hu; Stability analysis of networked control systems with Markov delay, *International Conference on Control and Automation*, 2005. ICCA '05. 26-29 June 2005, Volume 2, pp.720 – 724.

[2B.19] Suk Lee, Kyung Chang Lee, Hyun Hee Kim, Man Hyung Lee; Remote control for guaranteeing QoC of networked control systems via Profibus token passing protocol, *The 29th Annual Conference of the IEEE Industrial Electronics Society*, 2003. IECON '03. 2-6 Nov. 2003, Volume 2, pp.1425 – 1430.

[2B.20] Montestruque, L.A., Antsaklis, P.J.; Stochastic stability for model-based networked control systems, *Proceedings of the 2003 American Control Conference*, 2003. 4-6 June 2003, Volume 5, pp.4119 – 4124.

[2B.21] A special section on systems biology, *IEEE Control Systems Magazine*, vol.24, no.4, Aug.2004.

3A

[3A.1] Kazuhiro Oiwa, Protein motors: their mechanical properties and application to nanometer-scale devices, *Materials Science Forum Vols. 426-432*, 2003, pp.2339-2344.

[3A.2] Alex Mogilner, Timothy C. Elston, Hongyun Wang, and George Oster, Molecular motors: theory, in: Christopher P. Fall, Eric Marland, John Wagner, John Tyson, Editors, *Computational Cell Biology*, New York: Springer-Verlag New York, Inc., 2002, pp. 320-353.

[3A.3] Hiroaki Kojima, The single molecular nanometry for the the bio-supermolecule research, Journal of the National Institute of Information and Communications Technology, vol.51, nos. 3/4, 2004, pp.7-17.

[3A.4] H. Wang, Mathematical theory of molecular motors and a new approach for uncovering motor mechanism, IEE Proc.-Nanobiotechnol., vol.150, no.3, December 2003, pp.127-133.

[3A.5] M.J.A. Tyreman and J.E.Molloy, Molecular motors; nature's nanomachines, Proc.-Nanobiotechnol., vol.150, no.3, December 2003, pp.95-102.

3B

[3B.1] http://en.wikipedia.org/wiki/Ion_channel

[3B.2] http://en.wikipedia.org/wiki/Voltage-gated_ion_channel

nel

[3B.3] <http://ja.wikipedia.org/wiki/%E3%82%A4%E3%82%AA%E3%83%B3%E3%83%81%E3%83%A3%E3%83%8D%E3%83%AB>

3C

[3C.1] Henry R. Bourbe and Orion Weiner, A chemical compass, Nature, vol.419, 5 September 2002, p.21.

3D

[3D.1] IEEE Trans. on Biomedical Circuits and Systems, Vol.1, No.1, 2007.

3E

[3 E.1] Philip Ball, Chemistry meets computing, Nature, vol.406, 13 July 2000, pp.118-120.

4:

[4.1] Benjamin F Cravatt, Kinase chemical genomics – a new rule for the exceptions, Nature Methods 2, 3411-412 (2005), doi:10.1038/nmeth0605-411.

[4.2] Jessica E. Hutti, Emily T Jarrell, James D. Chang, et al., A rapid method for determining protein kinase phosphorylation specificity, Nature Methods, Vol.1, No.1 October 2004, pp.27-29. Published online 29 September 2004; DOI:10.1038/NMETH708

[4.3] Judith S. Sebolt-Leopold and Roman Herrera, Targeting the mitogen-activated protein kinase cascade to target cancer, Nature Reviews Cancer, Vol.4 December 2004, pp.937-947.

[4.4] Anthony W. Norman, Mathew T. Mizwicki and Derek P. G. Norman, Steroid-hormone rapid actions, membrane receptors and a conformational ensemble model, Nature Reviews Drug Discovery, Vol. 3, January 2004, pp.27-41.

[4.5] Jason A. Papin, Tony Hunter, Bernhard O. Palsson and Shankar Subramaniam, Reconstruction of cellular signaling networks and analysis of their properties, Nature reviews, Molecular Cell Biology, Vol. 6, February 2005, pp.99-111.

[4.6] Albert-Laszlo Barabasi & Zoltan N. Oltvai, Network biology: understanding the cell's functional organization, Nature Reviews Genetics, Vol. 5, February 2004, pp. 101-113.

[4.7] Tobor Vellai, Krisztina Takacs-Vellai, Yue Zhang, et al, Influence of TOR kinase on lifespan in C. Elegans, Nature, vol. 426, 11 December 2003, p.620.

[4.8] Olivier Pourquie, A new canon, Nature, vol. 433, 20 January 2005, pp.208-209.

[4.9] Hiroaki Kitano, Cancer as a robust system: implications for anticancer therapy, Nature Reviews Cancer, Vol. 4, March 2004, pp.227-235.

4A

[4A.1] Hiroaki Kitano and Azuma Takehito, System-biology and control, System, Control and Information, 48(3), 2004, pp.104-111, (in Japanese).

[4A.2] Jian-Qin Liu, On quantitative aspect of an information processing model inspired by signaling pathways in cells: an empirical study, IPSJ SIG Technical Report, Vol.2007,No.43, May 17, 2007, pp.21-24.

4B

[4B.1] Tau-Mu Yi, et al, Robust perfect adaptation in bacterial chemotaxis through integral feedback control, PNAS, 97(9), April 25, 2000, pp. 4649-4653.

[4B.2] David Angeli, James E. Ferrell, Jr., and Eduardo D. Sontag, Detection of multistability, bifurcations, and hysteresis in a large class of biological positive-feedback systems, PNAS, 101(7), February 17, 2004, pp.1822-1827.

5A

[5A.1] S.-Y.R.Li,R.W. Yeung, and N. Cai, Linear network coding, IEEE Transactions on Information Theory, February. 2003, Vol.49, No.2, pp. 371-381.

[5A.2] J. D. J. Han, et al, Evidence for dynamically organized modularity in the yeast protein-protein network, Nature, vol.430, 2004, pp.88-93.

[5A.3] Jian-Qin Liu, On Information-Theoretical Formalization of Intracellular Communications Based on Linear Network Coding, the SICE Annual Conference (Sept.17-20,2007, Kagawa, Japan).

6:

[6.1] Klaus Prank, Fabrizio Gabbiani, Georg Brabant, Coding efficiency and information rates in transmembrane signaling, *BioSystems*, 55 (2000), pp.15-22.

[6.2] Karl Kandler & Edda Thiels, Flipping the switch from electrical to chemical communication, *Nature Neuroscience*, vol. 8, no.12, December 2005, pp. 1633-1634.

6A

[6A.1] C. E. Shannon, A mathematical theory of communication, *The Bell System Technical Journal*, vol.27, July, October, 1948, pp.379-423,623-656.

[6A.2] E. A. Elion, M. Qi, W. Chen, Signaling specificity in yeast, *Science*, Vol. 307, pp. 687-688, 2005.

[6A.3] Jian-Qin Liu, On computational signal transduction in cells: a mathematical model theoretically capable of approaching the Shannon limit, *Proc. of ISNM2007&MB-ITR2007* (April 20-22, 2007, Okazaki, Japan), p.76.

6B

[6B.1] Tom Head, Formal language theory and DNA: an analysis of the generative capacity of specific recombinant behaviors, *Bulletin of Mathematical Biology*, vol. 49, 1987, 737-759.

[6B.2] Leonard M. Adleman, Computing with DNA, *Scientific American* August 1998, pp.34-41.

[6B.3] Ehud Shapiro and Yaakov Benenson, Bring DNA computers to life, *Scientific American*, 294(5), May 2006, pp.44-51.

[6B.4] Michael Conrad, On design principles for a molecular computer, *Communications of the ACM*, Vol.28, No.5, May 1985, pp.464-480.

[6B.5] Yin Zhixiang, Improved DNA algorithm of Chinese postman problem, *Proceedings of the 5th World Congress on Intelligent Control and Automation*, June 15-19, 2004, Hangzhou, P.R.China, pp.2313-2317.

[6B.6] Jian-Qin Liu and Katsunori Shimohara, Molecular computation and evolutionary wetware: a cutting-edge technology for artificial life and nanobiotechnologies, *IEEE Transactions on Systems, Man, and Cybernetics – Part C: Applications and Reviews*, Vol.37, No.3, May 2007, pp.325-336.

[6B.7] Jian-Qin Liu and Katsunori Shimohara,, A Biomolecular computing method based on Rho family GTPases, *IEEE Transactions on Nanobioscience*, Vol.2, No.2, June 2003, pp.58-62.

[6B.8] Adar R., Benenson Y., Linshiz G., Rozner A, Tishby N. and Shapiro E., Stochastic computing with biomolecular automata. *Proc. Natl. Acad. Sci. USA*, vol.101, 2004, pp.9960-65.

[6B.9] K., Benenson, T., Paz-Elitzur, R., Adar, E., Keinan, Z., Livneh and E. Shapiro, Programmable and autonomous computing machine made of biomolecules, *Nature*, vol. 414, 2001, pp.430-434.

[6B.10] Yaakov Benenson, Binyamin Gil ,Uri Ben-Dor, Rivka Adar & Ehud Shapiro, An autonomous molecular computer for logical control of gene expression, *Nature*, vol.429, 2004, pp.423-429.

7:

[7.1] Kurata H., Hana El-Samad, Rei Iwasaki, Hisao Ohtake, John C Doyle, Irina Grigorova, Carol A Gross, and Mustafa Khammash, Module-based analysis of robustness tradoffs in the heat shock response system, *PLoS Comput. Biol.* 2(7), 2006: e59.

[7.2] Jian-Qin Liu & Katsunori Shimohara, Advanced Control and Signal Processing Paradigms in the New Millennium for Nano-Bio-Communication and Information Processing Systems, Tutorial at SICE Annual Conference 2007 (Takamatsu City, Kagawa, Japan, 17 September, 2007).