TOPICAL REVIEW
031001 Surfing on a new wave of single-molecule fluorescence methods
Johannes Hohlbein, Kristofer Gryte, Mike Heilemann and Achilles N Kapanidis

COMMUNICATION
034001 Resonant activation in polymer translocation: new insights into the escape dynamics of molecules driven by an oscillating field
N Pizzolato, A Fiasconaro, D Persano Adorno and B Spagnolo

PAPERS
036001 Coarse-graining RNA nanostructures for molecular dynamics simulations
Maxim Paliy, Roderick Melnik and Bruce A Shapiro
036002 ENVIRONMENT: a computational platform to stochastically simulate reacting and self-reproducing lipid compartments
Fabio Mavelli and Kepa Ruiz-Mirazo
036003 A coordinated molecular ‘fishing’ mechanism in heterodimeric kinesin
Ruizheng Hou and Zhisong Wang
036004 Local synaptic signaling enhances the stochastic transport of motor-driven cargo in neurons
J Newby and Paul C Bressloff
036005 The interplay of multiple feedback loops with post-translational kinetics results in bistability of mycobacterial stress response
Abhinav Tiwari, Gabor Balazsi, Maria Laura Gennaro and Oleg A Igoshin
036006 High-frequency and low-frequency effects on vibrational resonance in a synthetic gene network
Juncheng Shi, Chuxing Huang, Tao Dong and Xinhui Zhang
036007 Convergent evolution to an aptamer observed in small populations on DNA microarrays
W Rowe, M Platt, D C Wedge, P J R Day, D B Kell and J D Knowles
036008 Exploring a minimal two-component p53 model
Tingzhe Sun, Ruoshi Yuan, Wei Xu, Feng Zhu and Pingping Shen
036009 Using Jensen’s inequality to explain the role of regular calcium oscillations in protein activation
C Rodenstein, B Knoke, M Mathé, M Perc and S Schuster
036010 Synchronization of the small-world neuronal network with unreliable synapses
Chunguang Li and Qunxian Zheng
Physical Biology

Physical Biology is an international peer-reviewed journal fostering the integration of biology with the traditionally more quantitative fields of physics, chemistry, computer science and other mathematics-based disciplines. Its primary aim is to further the quantitative characterization and understanding of biological systems at different levels of complexity, ranging from the role of structure and dynamics of a single molecule to the organization and evolution of molecular and cellular networks.

Physical Biology accepts contributions from a wide range of disciplines and covers topics such as:

- Structure of proteins, RNA, their modifications and interactions
- Assembly and function of macromolecular complexes
- Molecular motors, cytoskeletal dynamics, cellular transport, cell division
- Genomics, motif finding, phylogenetic and comparative analysis
- Gene regulation, signal transduction, metabolic control
- Genetic and enzymatic networks, systems biology
- Intracellular signalling and responses, e.g. quorum-sensing, chemotaxis
- Biological patterns, e.g. biofilms, morphogenesis and development, tumour growth
- Neuronal dynamics and networks, immunological networks
- Population dynamics and evolutionary processes
- Single molecule studies and nanobiotechnology
- Novel experimental and theoretical methods in physical biology

Physical Biology offers a stimulating combination of the following:

- Research papers: comprehensive, fully documented reports of original research
- Communications: preliminary reports of original, significant research results
- Perspectives: personal view on a particular research topic or discipline
- Tutorials: background knowledge for an audience unfamiliar with the subject
- Reviews: critical evaluations of the existing state of knowledge on a particular topic or research area.

A brief guide for authors

A submission to Physical Biology must be the original work of the author(s) and must not be published elsewhere or be under consideration for another publication in its submitted or a substantially similar form in any language.

Research Papers (up to 8500 words) and Communications (3500 words or less) will be considered.

Details on how to structure an article, including specific information on figures, tables and references, are given in the Guidelines for authors available from our Author services website at authors.iop.org/physbio.

What to submit

The text of the article can be prepared using Microsoft Word or any common variant of TeX. Figures should be submitted as separate files, preferably in Encapsulated PostScript (EPS) format. Package the text and figure files into a single compressed archive file (e.g. WinZip, PKZip, tar+gzip, etc).

How to submit

You can send your article to us using one of the following methods: Web submission (at authors.iop.org/submit, or from your IOP author homepage—see our Author services website at authors.iop.org for more information), FTP (ftp.iop.org/submit/physbio) or e-mail to physbio@iop.org. Full details on electronic, hard-copy and disk submission are provided in the Guidelines for authors at authors.iop.org/physbio.

Colour illustrations and supplementary data

Colour reproduction of illustrations and supplementary data in our Electronic Journals (iopscience.iop.org) is free of charge. Supplementary data attachments can enhance the electronic version of your article. For further information see the Guidelines for authors at authors.iop.org/physbio.

International offices

American office
IOP Publishing, Inc.
The Public Ledger Building, Suite 529
150 South Independence Mall West
Philadelphia PA 19106, USA
Tel: +1 215 627 8800
Fax: +1 215 627 0870
E-mail: info@ioppubusa.com

European office
IOP Publishing
Dove House
Temple Back
Bristol BS1 6BE, UK
Tel: +44 (0)117 929 7411
Fax: +44 (0)117 929 4318
E-mail: physbio@iop.org