



# SENSORS AND ACTUATORS B: CHEMICAL

An international journal devoted to research and development of chemical transducers

## AUTHOR INFORMATION PACK

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### DESCRIPTION

*Sensors & Actuators, B: Chemical* is an interdisciplinary journal dedicated to covering research and development in the field of **chemical sensors**, **actuators** and **microsystems**.

The scope of the journal encompasses, but is not restricted to, the following areas:

- Sensing principles and mechanisms
- New materials development (transducers and sensitive/recognition components)
- Fabrication technology
- Actuators
- Optical devices
- Electrochemical devices
- Mass-sensitive devices
- Gas sensors
- Biosensors
- Analytical microsystems
- Environmental, process control and biomedical applications
- Signal processing
- Sensor and sensor-array chemometrics

*μTAS - Micro Total Analysis Systems: Microsystems for the generation, handling and analysis of (bio)chemical information*

The special section of *Sensors & Actuators, B: Chemical* on **micro TAS** is dedicated to contributions concerning miniaturised systems for (bio)chemical synthesis and analysis, also comprising work on Bio-MEMS, Lab-on-a-chip, biochips and microfluidics.

Topics covered by the micro TAS section include:

- Physics and chemistry of microfluidics
- Microfabrication technology for micro TAS
- Analytical chemical aspects
- Detectors, sensors, arrays for micro TAS
- Micro TAS applications
- DNA analysis
- Microinstrumentation
- Microsystems for combinatorial chemistry.

## AUDIENCE

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Academic and Industrial Researchers in Analytical Chemistry and Instrument Development

## IMPACT FACTOR

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## ABSTRACTING AND INDEXING

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Electrochemical and optical (bio) sensors and their biomedical applications, miniaturized analytical devices based on microfluidics principle, Lab-on-a-Chip devices and their applications, fabrication technology of microfluidic devices and systems, new biosensing principles.

**R.E. Gyurcsányi**, Budapest University of Technology and Economics, Budapest, Hungary

Electrochemical sensors (ion-selective electrodes, amperometric (bio) sensors, nanopore, ultramicroelectrodes and ion-channel mimetic sensing), Optical sensors (optodes and surface plasmon resonance biosensors), Affinity biosensors, Mass-sensitive transducers, Nano (bio) chemical sensors and sensor miniaturization, Selective synthetic receptors (nucleic acid analogs, aptamers, molecularly imprinted polymers, ionophores, etc.), Biomedical and environmental application of sensors.

**R. Moos**, Universität Bayreuth, Bayreuth, Germany

Exhaust gas sensors, Solid state gas sensor materials, Solid state gas sensor principles, Solid state gas sensor technology and Solid state gas sensor modeling; Solid state electrochemical sensors; Framework-based sensing materials (zeolites, MOF); Transducer technology, LTCC, HTCC, hot plates; Chemical sensors for harsh environments.

**R. Narayanaswamy**

1) Optical Chemical sensors and Biosensors: development, applications and analytical instrumentation. New materials, devices, nano materials for optical chemical sensing, for environmental, biochemical and industrial applications; 2) Colorimetric and Fluorescence based sensing systems. Nanoparticles, molecularly imprinted polymers and other novel materials in sensors; 3) Surface Plasmon Resonance sensors and sensing systems: devices and instrumentation; 4) Mass sensitive devices, applications and instrumentation, e.g. SAW, BAW, QCM, QMB, etc.

**D. Papkovsky**, University College Cork, Cork, Ireland

1) Optochemical sensors; Optical Oxygen sensors; Biological applications of optical oxygen sensing and imaging; 2) Probes for chemical and biological analytes; Intracellular probes; Sensors for analysis of cellular function; 3) Nano sensors and biosensors, Fluorescence spectroscopy; Time-resolved Fluorescence, Phosphorescence Porphyrins.

**G. Rivas**, Universidad Nacional de Cordoba (Argentina), Córdoba, Argentina

Biosensors and biomedical applications: biomarkers sensors; enzymatic biosensors; DNA biosensors; hybridization and DNA damage biosensors; immunosensors; aptasensors. Sensing principles. Nanobiotechnology and Nanobiomedicine: nanomaterials for the development of (bio) sensors, carbon nanotubes, graphene, metallic and magnetic nanoparticles. Neurotransmitters sensors. Modified electrodes. Flow Injection Analysis.

**Y. Shimizu**, Nagasaki University, Nagasaki, Japan

Semiconductor gas sensors, Gas sensors by employing organic materials and/or inorganic materials, Gas sensing principle mechanism, New gas sensor materials, Humidity sensors.

**M. Tokeshi**, Hokkaido University, Sapporo, Japan

Lab-on-a-Chip, MicroTAS, Biochip and Biosensor, Microfabrication and Nanofabrication, Biomedical Applications, Bioanalytical Chemistry, Highly sensitive Detection Methods.

**U. Weimar**, Eberhard-Karls-Universität Tübingen, Tübingen, Germany

Chemical sensor systems, data processing of chemical sensor systems, related pattern recognition and multi-component analysis, electronic noses, application of chemical sensor systems.

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**J.-H. Lee**, Korea University, Seoul, South Korea

1) Oxide semiconductor gas sensors - The enhancement of gas sensing characteristics by the morphological design/control of oxide nanostructures (gas sensors using oxide nanowires, nanofibers, nanopowders, nanosheets, and hierarchical nanostructures); The control of gas selectivity and response by loading or doping noble metal catalysts or oxide additives; Preparation of oxide nanostructures for gas sensor applications via the physico-chemical routes (sol-gel method, hydrothermal method, solvothermal method, thermal evaporation, sputtering, atomic layer deposition and so on); Gas sensing mechanism 2) Gas sensors using solid electrolytes, Automotive exhaust gas sensors (oxygen sensors, air-to-fuel ratio sensors, automotive hydrocarbon sensors, automotive NO<sub>x</sub> sensors using solid electrolytes such as yttria stabilized zircona and gadolinia-doped ceria).

**D. Papkovsky**, University College Cork, Cork, Ireland

1) Optochemical sensors; Optical Oxygen sensors; Biological applications of optical oxygen sensing and imaging; 2) Probes for chemical and biological analytes; Intracellular probes; Sensors for analysis of cellular function; 3) Nano sensors and biosensors, Fluorescence spectroscopy; Time-resolved Fluorescence, Phosphorescence Porphyrins.

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## GUIDE FOR AUTHORS

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### **Aims and Scope**

*Sensors & Actuators, B: Chemical* is an interdisciplinary journal dedicated to covering research and development in the field of chemical sensors, actuators, micro- and nanosystems.

The scope of the journal encompasses, but is not restricted to, the following areas:

- Sensing principles and mechanisms
- New materials development (transducers and sensitive/recognition components)
- Fabrication technology including nanotechnology
- Actuators
- Optical devices
- Electrochemical devices
- Mass-sensitive devices
- Gas sensors
- Biosensors
- Bio-MEMS
- Analytical microsystems
- Environmental
- Process control
- Biomedical applications
- Signal processing
- Sensor and sensor-array chemometrics

$\mu$ TAS - Micro Total Analysis Systems *Microsystems for the generation, handling and analysis of (bio)chemical information*. The special section of *Sensors & Actuators, B: Chemical* on  $\mu$ TAS is dedicated to contributions concerning miniaturised systems for (bio)chemical synthesis and analysis, also comprising work on Bio-MEMS, Lab-on-a-chip, biochips and *microfluidics*.

Topics covered by the  $\mu$ TAS section include:

- Lab-on-a-chip
- Physics and chemistry of microfluidics
- Microfabrication technology for  $\mu$ TAS
- Analytical chemical aspects
- Detectors, sensors, arrays for  $\mu$ TAS
- $\mu$ TAS applications
- DNA analysis
- Microinstrumentation
- Microsystems for combinatorial chemistry

### **Types of paper**

*Sensors and Actuators B: Chemical*, welcomes full length research papers and review articles, and short communications. Full length papers should in general not exceed 5000 words or about 12 printed pages including tables and diagrams. Short communications should not exceed 2000 words or 4 printed pages. For all contributions the acceptance criteria are quality, originality, and scientific and technological relevance to the field. An adequate referencing to the state-of-the-art is essential.

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#### Results

Results should be clear and concise.

#### Discussion

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The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

#### Appendices

If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

#### Vitae

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*Electronic artwork*

*General points*



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*List:* Number the references (numbers in square brackets) in the list in the order in which they appear in the text.

### *Examples:*

Reference to a journal publication:

[1] J. van der Geer, J.A.J. Hanraads, R.A. Lupton, The art of writing a scientific article, *J. Sci. Commun.* 163 (2010) 51–59.

Reference to a book:

[2] W. Strunk Jr., E.B. White, *The Elements of Style*, fourth ed., Longman, New York, 2000.

Reference to a chapter in an edited book:

[3] G.R. Mettam, L.B. Adams, How to prepare an electronic version of your article, in: B.S. Jones, R.Z. Smith (Eds.), *Introduction to the Electronic Age*, E-Publishing Inc., New York, 2009, pp. 281–304.

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