Curriculum Vitae

Eric Bakker

Professor, Department of Inorganic and Analytical Chemistry, University of Geneva, Switzerland

October 2021

Present Position at the University of Geneva

Full Professor and Director, Department of Inorganic and Analytical Chemistry

Academic Degrees and Schooling

1993	Doctor der Naturwissenschaften (Ph.D. natural sciences), ETH Zurich. Thesis Supervisor: Prof. Dr. Wilhelm Simon.
1989	Dipl. Chem. ETH, ETH Zurich.

Training and Education After Secondary School

1985-89	University studies of Chemistry, ETH Zurich
1989-90	Industry practice, Mettler-Toledo, Urdorf, Switzerland
1990-93	Doctoral studies, ETH Zurich, Switzerland
1993-95	Postdoctoral studies, University of Michigan, Ann Arbor, Michigan, U.S.A.

Professional Activities (post-graduate)

1990–93 Project Manager (part time during doctoral thesis), Mettler-Toledo, Urdorf, Switzerland.

1993–95 Postdoctoral studies, University of Michigan, Ann Arbor, Michigan, U.S.A.

1995–98 Assistant Professor, Auburn University, U.S.A.

1998–03 Associate Professor, Auburn University, U.S.A.

2000 Visiting Professor, Swiss Federal Institute of Technology, Zurich, Switzerland

2001 Visiting Professor, Ecole Normale Supérieure, Paris, France

2003–05 Professor, Auburn University, U.S.A.

2005–08 Professor, Purdue University, West Lafayette, U.S.A.

2007–10 Professor and Director, Curtin University of Technology, Perth, Australia

2007–10 Director, Western Australian Nanochemistry Research Institute, Perth

2011– Adjunct Professor, University of the Sunshine Coast, Queensland, Australia

2012–16 Director, Department of Inorganic and Analytical Chemistry, University of Geneva

2015 Visiting Professor, Keio University, Yokohama, Japan

2016 Visiting Professor, University of New South Wales, Sydney, Australia

2010– Professor, University of Geneva, Switzerland

2020– Director, Department of Inorganic and Analytical Chemistry, University of Geneva

Society Memberships

American Chemical Society
Royal Society of Chemistry (Fellow)
Swiss Chemical Society
International Society of Electrochemistry
Society for Electroanalytical Chemistry
Geneva Chemical Society
Geneva Society for Physical and Analytical Science
Matrafüred Society for Electrochemical Sensors

Research

Key research areas

Electroanalytical chemistry and chemical ion sensors

Potentiometric and voltammetric methods for membrane electrodes

Total charge counting coulometric sensing concepts

Design and synthesis of sensing components, polymers and polymer modifications

Fluorescent microparticle and nanoparticle sensing probes

Light switchable and light triggered chemical systems

Emulsion based titration reagents

Bioanalytical and environmental applications of chemical sensors

Brief Desciption of Research Interests

Eric Bakker's research is in analytical chemistry, specifically in Electroanalysis and Optochemical Sensors. The group aims to develop new environmental and bioanalytical sensing strategies with examples that are of practical importance. We have made progress in establishing a calibration free sensing strategy based on combining principles of thin layer coulometry and ion-selective membranes. Part of this work has gone in direction of desalination strategies using permselective membranes and forming the scientific basis for interdisciplinary environmental projects. Paper based exhaustive sensors for halides have also been developed based on this principle.

Environmental sensing work includes the development of all-solid-state sensing probes and their deployment in marine and freshater systems. A recent example includes the direct detection of carbon dioxide without requiring gas permeable membranes, realizing very high response times. We are also working on voltammetric sensing strategies for the environmental sciences where we aim to detect mercury, arsenic and the various redox forms in situ in natural samples with no or very little sample pretreatment.

In separate research, we found that permselective membranes can be read out by chronopotentiometry (a current is applied during measurement) in addition to traditional potentiometry at zero current. We have demonstrated that this tandem measurement principle can result in direct speciation analysis. Key applications include the detection of free and complexed calcium, the direct detection of pH, total alkalinity and total acidity, and the measurement of anticoagulant in whole blood samples.

Membranes of submicrometer thickness deposited onto solid contact electrodes are being studied in view of novel applications. This includes the voltammetric control of the ion transfer process, which is no longer mass transport limited. This creates a hybrid sensing principle where voltammetric sensors behave in analogy to potentiometric ones, but with a range of advances, including multianalyte activity detection. This also forms the basis for solid contact material research and the realization of electrochemically switchable potentiometric probes.

New readout principles for membrane electrodes are being explored. This includes the conversion of potentiometric signals into color using closed bipolar electrodes, with the aim of addressing and reading out large arrays of sensors. Capacitive readout of membrane electrodes is also explored, which makes it possible to assess very small concentration changes.

Emulsion based extraction principles are developed that aim to replace and extend the current chemical toolbox based on water soluble chelators such as EDTA. pH independent calcium titration has been introduced, along with titration reagents for anions such as nutrients.

Current Group Members

Undergraduate Students
Ayian Speck

Doctoral Students
Robin Nussbaum, Tanguy Gressard, Pitchnaree Kraikaew, Canwei Mao, Yoshiki Soda, Tara Forrest, Polyxeni Damala, Gabriel Mattos

Postdocs
Elena Zdrachek, Kye Robinson, Nicolas Layglon

Senior Scientist
Marylou Tercier-Waeber

Lab Technician
Thomas Cherubini

Secretary
Magali Cissokho

Past Thesis Direction

2000 Yanming Mi, Ph.D.
Fundamental Studies of Carrier Based Potentiometric Ion Sensors

2000 Smita M. Jadhav, Ph.D.
Voltammetric and Pulse Amperometric Transduction Mode for Solvent Polymeric Membrane Ion Sensors

2001 Sally M. Mathison, Ph.D.
The Improvement of the Detection Limit of Ion-Selective Electrodes, the Development of a Heparin Sensor, and the Increasing of Sensor Biocompatibility Through Studies of Ion Transpoort and Diffusion Across Plasticized Polymer Membranes.

2002 Yu Qin, Ph.D.
Fundamental Studies of Binding and Extraction Processes in Potentiometric Sensors and Development of Novel Recognition Principles by Materials Synthesis

2003 Shane M. Peper, Ph.D.
Microsphere-Based Ion-Selective Bulk Optodes for the Determination of Clinical Electrolytes and the Evaluation of Closo-Dodecacarborane Anions as Ion-Exchangers in Potentiometric and Optical Cation-Selective Chemical Sensors

2005 Aleksandar Radu, Ph.D. (now faculty member at Keele University, UK)
Experimental and Theoretical Insights in the Improvement of the Detection Limit of Ion-Selective Electrodes

2006 Robert F. Long III, Ph.D.
Spectral and Electrochemcial Study of the Response Mechanism of Ionophore-Based Polymeric Membranes

2006 Vishnupriya Bhakthavatsalam, Ph.D.
Ion Selective Polymeric membranes as Chemically Selective Coulometric Electrodes

2006 Nastassia Rubinava, M.S.
Solid-Contact Potentiometric Ultra-Sensitive Silver-Selective Polymeric Microelectrodes for Protein Detection

2007 Chao Xu, Ph.D.
Sensing Platforms Based on Polymeric Microsphere Ion Selective Bulk Optodes

2008 Yida Xu, Ph.D.
Current Controlled Polymeric Ion Sensors for Bioanalysis

2008 Kebede L. Gemene, Ph.D. (Associate Professor at Northern Kentucky University)
Pulsed Chronopotentiometric Flash Titration at Polymeric Membrane Ion-Selective Electrodes–A Novel Method for Clinical and Environmental Analyses

2015 Bastien Néel, Ph.D.
Water Analysis: From Electroanalytical Chemistry to Education

2015 Xiaojiang Xie, Ph.D. (Associate Professor at SUSTech, Shenzhen, China)
From Ion Selective Optodes to Photoelectric Conversion

2016 Romain Touilloux, Ph.D.
Towards a Renewable, Reliable and Robust Electrochemical Sensing Principle for Arsenic(III) Detection in Environmental Freshwater Systems

2017 Jingying Zhai, Ph.D.
Ionophore-Based Complexometric Titration

2017 Zdenka Jarolimova, Ph.D.
Electrochemical and fluorescent probes for ion sensing

2018 Nadezda Pankratova, Ph.D.
Development of Sensing Principles for Electrochemical Detection of Nutrients and Species Relevant to the Carbon Cycle

2018 Dajing Yuan, Ph.D.
Solid Contact Ion Selective Electrodes: From Potentiometric Application to Voltammetric Investigation

2019 Lu Wang, Ph.D.
Ion-selective optodes with lipophilic solvatochromic dyes as transducers

2020 Sutida Jansod, Ph.D.
Electrochemical and Optical Sensors for Ion Sensing

2020 Marylou Tercier-Waeber, Ph.D.
INNOVATIVE SENSING DEVICES FOR IN SITU SPATIAL AND TEMPORAL MONITORING OF TRACE METALS IN AQUATIC SYSTEMS: EMPHASIS ON POTENTIALLY BIOAVAILABLE METAL SPECIES

Key Research Grants

2020-2021 Eurostars Grant
Work Package Leader E. Bakker, Euro 350’000 to EB

2018-2022 Swiss National Science Foundation Project Grant
PI E. Bakker (100%), CHF 780,000

2015-2018 Swiss National Science Foundation Project Grant
PI E. Bakker (100%), CHF 620,000

2017 Swiss National Science Foundation R’Equip Equipment Grant
PI E. Bakker (100%), CHF 72,500

2014-2018	FP7 Project Grant (European Union) Coordinator ML Tercier (Bakker's senior scientist, 25%), Euro 5,600,000
2014-2017	Swiss National Science Foundation Sinergia Interdisciplinary Grant PI E. Bakker (40%), CHF 1,020,000
2011-2014	Swiss National Science Foundation Project Grant PI E. Bakker (100%), CHF 600,000
2012-2013	Austrian Science Fund (fellowship to G. Mistlberger, postdoc), Euro 41,000
2012-2013	Innogap Technology Transfer Grant, PI E. Bakker (100%), CHF 29,575
2012	Industrial Equipment Gift, Metrohm, ca. CHF 70,000
2010-2011	Swiss National Science Foundation R'Equipe Equipment Grant PI E. Bakker (100%), CHF 160,000
2010	Equipment Grant, unige, PI E. Bakker (100%), CHF 115,000
2010	Commission Administrative Equipment Grant PI E. Bakker (100%), CH 84,348
2009-2012	CSIRO Flagship Cluster Grant (CI E. Bakker,12.5%), AUD 3,000,000
2009-2010	ARC Discovery grant PI E. Bakker (70%), AUD 800,000
2006-2010	NIH R01, PI E. Bakker (30%), USD 1,250,000
2003-2007	NIH R01 PI E. Bakker (100%), USD 620,000
2000-2005	NIH R01 PI E. Bakker (50%), USD 670,000
1998-2001	NIH R01 PI E. Bakker (100%), USD 294,000
1998-2007	Industrial research grant, Beckman Coulter PI E. Bakker (100%), USD 670,000

Honours and Awards

2020-	Executive Editor, ACS Sensors
2019	Simon-Widmer Award, Swiss Chemical Society
2015-19	Associate Editor, ACS Sensors
2014	Robert Boyle Prize, Royal Society of Chemistry
2014-	Fellow of the Royal Society of Chemistry
2009-10	Australian Professorial Fellowship, Australian Research Council

2006–11 Subject Editor, Sensors and Actuators, B

2004 Roche Prize for Sensor Technology

2003-05 Alumni Professorship, Auburn University

2001 Young Investigator Award, Society for Electroanalytical Chemistry (U.S.A.)

2000 Sigma Xi outstanding researcher award (U.S.A.)

Patent Applications

1992 Reference Electrode with an Ion-Retention Barrier for Electrochemical Measuring Equipment
A. Nipkow, E. Bakker, PCT Int. Appl. WO 9221960 A1 19921210, Dec 10, 1992.

2002 Plasticizer-Free Ion Detective Sensors
S. Peper, Y. Qin, M. Telting-Diaz, E. Bakker, U.S. Patent 81841.0230 (2002).

2004 Ion-Detecting Microspheres and Methods of Use Thereof
E. Bakker, M. Telting-Diaz, M. Bell, US 2004058384 A1 20040325, Mar 25, 2004.

2005 Ion-Detecting Sensors Comprising Plasticizer-Free Copolymers
S. Peper, Y. Qin, E. Bakker, US 20030213691 A1, Nov 20, 2003; PCT Int. Appl. WO 2004106893 A2, Dec 9, 2004; US 20050011760 A1, Jan 20, 2005.

2005 Reversible Electrochemical Sensors for Polyions
A. Shvarev, E. Bakker, PCT Int. Appl. (2005) WO 2005008232 A1, Jan 27, 2005; US Patent 8,097,135, 2012.

2006 Doped silica microsphere optical ion sensors
E. Bakker, C. Xu, M. L. Bell, K. Wygladacz, Y. Qin, R. Retter, PCT Int. Appl. (2006) WO 2006083960 A1, Aug 10, 2006.

2007 Long lived anion-selective sensors based on a covalently attached metalloporphyrin as anion receptor
E. Bakker, Y. Qin, U.S. Pat. Appl. Publ. (2006) US 2006278526 A1, Dec 14, 2006; WO 2007146615, Dec 21, 2007; US Patent 7,678,252, 2010.

2007 Covalently attached Nile blue derivatives for optical sensors
E. Bakker, Y. Qin, PCT Int. Appl. (2007) WO 2007059449, May 24, 2007; US Patent 8,242,203, 2012.

2008 Hollow Microsphere Particles
E. Bakker, K. Wygladacz, N. Ye, C. Xu, PCT Int. Pat. Appl. (2008) WO 2008124202 A2, Oct 16, 2008; WO 2008095007 A1, Aug 7, 2008.

2009 Polymerized Nile blue derivatives for plasticizer-free fluorescent ion optode microsphere sensors
E. Bakker, W. Ngeontae, PCT (2009) WO 2009023287 A1, Feb 19, 2009.

2010 Sensing Device and Method
E. Bakker, PCT/AU2010/000156, 201; US Patent App. 13/201,158, 2010.

2015 Reversible detection of ions with permselective membranes
Bakker, Eric; Crespo, Gaston; Afshar, Majid G., PCT Int.
Appl. (2014), WO 2014016791 A2 20140130.

2015 Potentiometric Sensor
Bakker, Eric; Bohets, Hugo Achiel J.; Bonroy, Kristien Simonne Raymonda; Marczak, Marcin Milosz; Oezdemir, Mahir Sinan; Roymans, Dirk Andre Emmy; Vanhoutte, Koen Jeroom, U.S. Pat. Appl.
Publ. (2015), US 20150226695 A1 20150813.

2020 Sensor device for measuring a parameter of an analyte
Sailapu, Sunil; Bakker, Eric; Sabate, Neus
European patent application, EP20194360.2, 03 September 2020

Technical and Scientific Roles

2015– Executive/Associate Editor, ACS Sensors (handling >300 papers per year)

2006–11 Subject Editor, Sensors and Actuators, B (handling >300 papers per year)

Administration (since 2010)

2010– Member, safety committee sciences II

2011– Committee member, centralized workshop services sciences II

2011– Supervisor, Department workshop CHIAM

2011– Steering committee member, outreach activity Chimiscope

2011– Executive committee member, GAPAG (Geneva Association for Physical and Analytical Sciences)

2011 Co-organizer, Matrafured Meeting on Electrochemical Sensors, Hungary

2012–16 Director of the Department of Inorganic and Analytical Chemistry (CHIAM)

2012– Council Member of the Section of Chemistry and Biochemistry

2012– Member, Executive Committee of the Section of Chemistry and Biochemistry

2013–15 Representative for Switzerland for the International Society for Electrochemistry

2013 Strategic planning committee member, Section of Chemistry and Biochemistry

2013 Strategic planning committee member, Section of Environmental Sciences

2013 Strategic planning committee member, Section of Pharmaceutical Sciences

2013 Member, Faculty Search Committee, Physical Chemistry

2013-14 Steering committee member, faculty outreach programs

2013-14 Faculty Representative, outreach activity chimiscope

2013 Member, Faculty Promotion Committee, Department CHIAM

2013 Chair, Technical Staff Search Committee, Department CHIAM

2014– President, Society for Matrafured Conferences

2014 Chair, Faculty Search Committee, Department CHIAM

2014 Co-organizer, Matrafured Meeting on Electrochemical Sensors, Hungary

2014 Co-organizer, Fall Meeting of the International Society of Electrochemistry, Lausanne

2014 Co-organizer, ISEAC38 Environmental Science Conference, Lausanne

2014 Co-organizer, Europtrode Meeting in Athens, Greece

2014 Co-organizer, Journée d'Electrochimie, Paris, France

2015– Executive member, Swiss Chemical Society Course Organizing Committee

2016– Executive committee member, Geneva Chemical Society

2016 Co-organizer, Europtrode Meeting in Graz, Austria

2016 Co-organizer, Journée d'Electrochimie, Rome, Italy

2016 Member, University Delegation for Strategic Agreements with Israel

2017 Co-organizer, Matrafured Meeting on Electrochemical Sensors, Hungary

2017 Strategic planning committee member, Section of Environmental Sciences

2017 Strategic planning committee member, Section of Pharmaceutical Sciences

2018 Scientific Advisory Committee, PACCON2018, Hat Yai, Thailand

2018 Co-organizer, Europtrode Meeting in Naples, Italy

2018 Member, Faculty Search Committee, Department CHIAM

2019 Member, Faculty Search Committee, Department CHIFI

2021 Faculty Search Committee, University of Barcelona

2021 Scientific Advisory Committee, ISEAC 2021, Changchun, China

2021 Award Committee, Swiss Chemical Society

Service and Outreach (from 2010)

2023 Co-organizer of Euroanalysis XXI, Geneva.

2022 Co-organizer of the Matrafured International Meeting on Chemical Sensors, Visegrad, Hungary.

2021- President, GAPAG, Geneva

2020- President of the Division of Analytical Science, Swiss Chemical Society

2020- Director, Department of Inorganic and Analytical Chemistry, U of Geneva

2019 Co-organizer of the Matrafured International Meeting on Chemical Sensors, Visegrad, Hungary.

2019 Co-organizer of a contributed session “ionophore-based chemical sensors” at Pittcon, Philadelphia, USA.

2018 Co-organizer of a contributed session “ionophore-based chemical sensors” at Pittcon, Orlando, USA.

2017 Co-organizer of a contributed session “ionophore-based chemical sensors” at Pittcon, Chicago, USA.

2017 Co-organizer of the Matrafured International Meeting on Chemical Sensors, Visegrad, Hungary.

2016–17 Principal Investigator on the Swiss National Science Outreach Project “Science Me” competition, 20’000 CHF.

2016 Co-organizer of a contributed session “ionophore-based chemical sensors” at Pittcon, Atlanta, USA.

2015– Associate Editor for the journal ACS Sensors

2015 Outreach Talk at the Museum of Science History, Geneva

2015 Co-organizer of a contributed session “ionophore-based chemical sensors” at Pittcon, New Orleans, USA.

2015 Co-organizer of the Matrafured International Meeting on Chemical Sensors, Visegrad, Hungary.

2014 Co-organizer of a contributed session “ionophore-based chemical sensors” at Pittcon, Chicago, USA.

2012– Responsible for the Development of the Module “Chimie et Environnement” for the Chimiscope at the University of Geneva

2013 Co-organizer of a contributed session “ionophore-based chemical sensors” at Pittcon, Philadelphia, USA.

2012 Seminar for the Geneva Chemical Society

2012– Member, Steering Committee of the Europtrode International Conference Series

2012 Co-organizer of a contributed session “ionophore-based chemical sensors” at Pittcon, Orlando, U.S.A.

2012 Co-organizer of the Matrafured International Meeting on Chemical Sensors, Visegrad, Hungary.

2011– Member, Organizing Committee for the French Speaking Conference Series “Electrochemistry Days”

2011 Co-organizer of a contributed session “ionophore-based chemical sensors” at Pittcon, Atlanta, U.S.A.

2006-11 Subject Editor, Sensors and Actuators, B

2010 Co-organizer of a contributed session “ionophore-based chemical sensors” at Pittcon, Chicago, U.S.A.

Citation Data

H-index (Google Scholar):	77
Total Citations	26’301

Comparative Data from the ISI Thompson Database: 20’806 citations, h-index 68
http://www.researcherid.com/rid/B-7940-2009

Full List of Scientific Publications

373 Self-Powered Potentiometric Sensor with Memory
Sailapu, S. K.; Sabaté, N.; Bakker, E. ACS Sensors, ASAP.

372 Electronic Control of Constant Potential Capacitive Readout of Ion-Selective Electrodes for High Precision Sensing
Kraikaew, P.; Sailapu, S. K.; Bakker, E. Sens. Actuators, B, 2021, 344, 130282.

371 Ionic Strength-Independent Potentiometric Cation Concentration Sensing on Paper Using a Tetrabutylammonium-based Reference Electrode
Soda, Y.; Bakker, E. Sens. Actuators, B, 2021, 346, 130527.

370 Perspectives and Future Directions of the Division of Analytical Sciences of the Swiss Chemical Society
Bakker, E.; Bleiner, D.; Groh, K. Chimia, 2021, 75, 455-456.

369 Potentiometric Sensing
Zdrachek, E.; Bakker, E. *Anal. Chem.*, **2021**, *93*, 72-102.

368 Colorimetric Sensing with Ion Optodes
Soda, Y.; Bakker, E. *Anal. Chim. Acta*, **2021**, *1154*, 338225.

367 Self-Powered Electrochromic Readout of Potentiometric pH Electrodes
Jansod, S.; Bakker, E. *Anal. Chem.*, **2021**, *93*, ASAP.

366 Unbiased selectivity coefficients of potentiometric sensors using thin membrane layers
Zdrachek, E.; Bakker, E. Electroanalysis, **2021**, in press.

365 Sensor device for measuring a parameter of an analyte
European patent application, EP20194360.2, 03 September 2020

364 Ultra-Sensitive Measurement of Ocean pH
Kraikaew, P.; Bakker, E. *Chimia*, **2020**, *74*, 1021.

363 Rapid Constant Potential Capacitive Measurements with Solid-Contact Ion-Selective Electrodes Coupled to Electronic Capacitor
Kraikaew, P.; Sailapu, S. K.; Bakker, E. *Anal. Chem.*, **2020**, *92*, 14174-14180.

362 Triumph and Misery of Measurement Science
Bakker, E. *ACS Sensors*, **2020**, *5*, 2264-2265.

361 In situ Voltammetric Sensor of Potentially Bioavailable Inorganic Mercury in Marine Aquatic Systems Based on a Gel-Integrated Nanostructured Gold-based Microelectrode Arrays Tercier-Waeber, M. L.; Abdou, M.; Kowal, J. L.; Bakker, E.; Fighera, M.; van der Waal, P. *ACS Sensors*, **2021**, ASAP.

360 Newly designed gel integrated nanostructured gold-based interconnected microelectrode arrays for direct arsenite monitoring in aquatic systems
Tercier-Waeber, M. L.; Fighera, M.; Abdou, M.; Groc, P.; Bakker, E.; van der Waal, P. *Sens. Actuators, B*, **2021**, *328*, 128996.

359 Separating Boundary Potential Changes of Thin Solid Contact Ion-Selective Membrane Electrodes by a Molecular Redox Probe
Mao, C.; Yuan, D.; Wang, L.; Bakker, E. *J. Electroanal. Chem.*, **2021**, *880*, 114800.

358 Emulsion Doping of Ionophores and Ion-Exchangers into Ion-Selective Electrode Membranes
Soda, Y.; Gao, W.; Bosset, J.; Bakker, E. *Anal. Chem.*, **2020**, *92*, 14319-14324.

357 Self-Powered Potentiometric Sensor Transduction to a Capacitive Electronic Component for Later Readout
Sailapu, S. K.; Kraikaew, P.; Sabate, N.; Bakker, E. *ACS Sensors*, **2020**, *5*, 2909-2914.

356 A Scientific Journey with Ionophore-Based Sensors
Bakker, E. *Chimia*, **2020**, *7/8*, 569-576.

355 Giants in Sensing: A Virtual Issue to Celebrate Five Years of ACS Sensors
Bakker, E.; O'Sullivan, C. K.; Cremer, P. S. *ACS Sensors*, **2020**, *5*, 1249-1250.

354 Remembering NJ
Gooding, J. J.; Mazur, A.; Bakker, E.; Kelley, S.; Sailor, M.; Merkx, M.; Mao, L.; Clark, H.; Maboudian, R.; Long, Y. *ACS Sensors*, **2020**, *5*, 887-888.

353 Matrafured 2019 International Conference of Electrochemical Sensors Bakker, E.; Buhlmann, P.; Gyurcsanyi, R.E.; Pretsch, E.; Wang, J. *Electroanalysis*, **2020**, *32*, 667-668.

352 Colorimetric Absorbance Mapping and Quantitation on Paper-Based Analytical Devices
Soda, Y.; Robinson, K. J.; Cherubini, T.; Bakker, E. *Lab on a Chip*, **2020**, *20*, 1441-1448 .

351 Happy 5th Anniversary for ACS Sensors
Gooding, J. ; Bakker, E.; Kelley, S.; Tao, N. J.; Sailor, M.; Merkx, M.; Mao, L.; Clark, H. *ACS Sensors*, **2020**, *5*, 1-2.

350 Direct Potentiometric Sensing of Anion Concentration (Not Activity)
Gao, W.; Xie, X.; Bakker, E. *ACS Sensors*, **2020**, *5*, 313-318.

349 Optical Sensing with a Potentiometric Sensing Array by Prussian Blue Film Integrated Closed Bipolar Electrodes
Jansod, S.; Cherubini, T.; Soda, Y.; Bakker, E. *Anal. Chem.*, **2020**, *92*, 9138-9145.

348 Spatial variability of arsenic speciation in the Gironde Estuary: emphasis on bioavailable (dynamic) inorganic arsenite and arsenate fractions

Penezic, A.; Tercier-Waeber, M.-L.; Abdou, M.; Bossy, C.; Dutruch, L.; Bakker, E.; Schaefer, J. *Marine Chemistry*, **2020**, *223*, 103804.

347 Potentiometric Sensor Array with Multi-Nernstian Slope
Zdrachek, E.; Bakker, E. *Anal. Chem.*, **2020**, *92*, 2926-2930.

346 Thin Layer Membrane Systems as Rapid Development Tool for Potentiometric Solid Contact Ion-Selective Electrodes
Forrest, T.; Zdrachek, E.; Bakker, E. *Electroanalysis*, **2020**, *32*, 799-804.

345 Ultra-Sensitive Seawater pH Measurement by Capacitive Readout of Potentiometric Sensors
Kraikaew, P.; Jeanneret, S.; Soda, Y.; Cherubinini, T.; Bakker, E. *ACS Sensors*, **2020**, *5*, 650-654.

344 Quantification of Colorimetric Data for Paper-Based Analytical Devices
Soda, Y.; Bakker, E. *ACS Sensors*, **2020**, *4*, 3093-3101.

343 Tunable detection range of ion-selective nano-optodes by controlling solvatochromic dye transducer lipophilicity
Wang, L.; Bakker, E. *Chem. Commun.*, **2019**, *55*, 12539-12542.

342 A Solid-State Reference Electrode Based on a Self-Referencing Pulstrode
Gao, W.; Zdrachek, E.; Xie, X.; Bakker, E. *Angew. Chem. Int. Ed.*, **2020**, *59*, 2294-2298.

341 An Ode to You, Reviewer for ACS Sensors
Bakker, E. *ACS Sensors*, **2019**, *4*, 1964.

340 Equipment-Free Detection of K+ on Paper
Soda, Y.; Citterio, D.; Bakker, E. *Chimia*, **2019**, *73*, 944.

339 Renewable magnetic ion-selective colorimetric microsensors based on surface modified polystyrene beads Apichai, S.; Wang, L.; Grudpan, K.; Bakker, E. *Anal. Chim. Acta*, **2020**, *1094*, 136-141.

338 Closed Bipolar Electrode Colorimetric Transduction of Potentiometric PVC-Based Membrane Electrodes
Jansod, S.; Bakker, E. *ACS Sensors*, **2019**, *4*, 1008-1016.

337 ECL Readout for Chronopotentiometric Sensors
Gao, W.; Jeanneret, S.; Yuan, D.; Cherubini, T.; Wang, L.; Xie, X.; Bakker, E. *Anal. Chem.*, **2019**, *91*, 4889,Äì4895.

336 From Molecular and Emulsified Ion Sensors to Membrane Electrodes: Molecular and Mechanistic Sensor Design
Zdrachek, E.; Bakker, E. *Acc. Chem. Res.*, **2019**, *52*, 1400-1408.

335 Simplified Fabrication for Ion-Selective Optical Emulsion Sensor with Hydrophobic Solvatochromic Dye Transducer: A Cautionary Tale

Wang, L.; Sadler, S.; Cao, T.; Xie, X.; Bakker, E. *Anal. Chem.*, **2019**, *91*, 8973-8978.

334 Equipment-Free Detection of K+ on Microfluidic Paper-based Analytical Devices Based on Exhaustive Replacement with Ionic Dye in Ion-selective Capillary Sensors Soda, Y.; Citterio, D.; Bakker, E. *ACS Sensors*, **2019**, *4*, 670-677.

333 Potentiometric Sensing
Zdrachek, E.; Bakker, E. *Anal. Chem.*, **2019**, *91*, 2–26.

332 In-Line Seawater Phosphate Detection with Ion-Exchange Membrane Reagent Delivery
Sateanchok, S.; Pankratova, N.; Cuartero, M.; Cherubini, T.; Grudpan, K.; Bakker, E. *ACS Sensors*, **2018**, *3*, 2455–2462.

331 DNA-programmed electrically reconfigurable network of gold-coated magnetic nanoparticles enables ultrasensitive microRNA detection in blood
Tavallaie, R.; McCarroll, J.; Schuhmann, W.; Bakker, E.; Hibbert, D. B.; Kavallaris, M.; Gooding, J. J. *Nature Nanotechnology*, **2018**, *13*, 1066–1071.

330 So, you have a great new sensor. How will you validate it?
Bakker, E. *ACS Sensors*, **2018**, *3*, 1431.

329 Paper-Supported Thin-layer Ion Transfer Voltammetry for Ion Detection
Ding, J.; Cherubini, T.; Yuan, D.; Bakker, E. *Sens. Actuators, B*, **2019**, *280*, 69-76.

328 Fast Potentiometric CO2 Sensor for High-resolution In situ Measurements in Fresh Water Systems
Athavale, R.; Pankratova, N.; Dinkel, C.; Bakker, E.; Wehrli, B.; Brand, A. *Environ. Sci. Technol.*, **2018**, *52*, 11259-11266.

327 Editorial: Mátrafüred 2017 International Conference on Electrochemical Sensors
Bakker, E.; Buhlmann, P.; Gyurcsanyi, R.; Pretsch, E.; Wang, J. *Electroanalysis*, **2018**, *30*, 594-595.

326 Capacitive Model for Coulometric Readout of Ion-Selective Electrodes
Jarolimova, Z.; Han, T.; Vanamo, U.; Bobacka, J.; Bakker, E. *Anal. Chem.*, **2018**, *90*, 8700–8707.

325 Ion-Exchange Microemulsions for Eliminating Dilute Interferences in Potentiometric Determinations
Apichai, S.; Wang, L.; Pankratova, N.; Grudpan, K.; Bakker, E. *Electroanalysis*, **2018**, *30*, 2462-2466.

324 Light addressable ion sensor for localized real-time monitoring of extracellular potassium
Yang, Y.; Cuartero, M.; Gonçales, V.; Gooding, J.; Bakker, E. *Angew. Chem. Int. Ed.*, **2018**, *57*, 16801–16805.

323 Electrochemically Switchable Polymeric Membrane Ion-Selective Electrodes
Zdrachek, E.; Bakker, E. *Anal. Chem.*, **2018**, *90*, 7591–7599.

322 Ion-Selective Electrodes
Bakker, E., in Reference Module in Chemistry, Molecular Sciences and Chemical Engineering, Elsevier, **2018**.

321 Colorimetric Readout for Potentiometric Sensors with Closed Bipolar Electrodes
Jansod, S.; Cuartero, M.; Cherubini, T.; Bakker, E. *Anal. Chem.*, **2018**, *90*, 6376-6379.

320 Ion Transfer Voltammetry in Polyurethane Thin Films Based on Functionalised Cationic [6]Helicenes for Carbonate Detection
Jarolimova, Z.; Bosson, J.; Labrador, G. M.; Lacour, J.; Bakker, E. *Electroanalysis*, **2018**, *30*, 1378-1385.

319 Selective Distance-Based K+ Quantification on Paper-Based Microfluidics
Gerold, C. T.; Bakker, E.; Henry, C. S. *Anal. Chem.*, **2018**, *90*, 4894-4900.

318 An exciting year ahead for ACS Sensors
Gooding, J.; Mazur, A.; Sailor, M.; Merkx, M.; Kelley, S; Tao, N.; Long, T.; Bakker, E. *ACS Sensors*, **2018**, *3*, 1-2.

317 Colorimetric Ionophore-Based Coextraction Titrimetry of Potassium Ions
Thajee, K.; Wang, L.; Grudpan, K.; Bakker, E. *Anal. Chim. Acta*, **2018**, *1029*, 37-43.

316 In Situ Detection of Macronutrients and Chloride in Seawater by Submersible Electrochemical Sensors
Cuartero, M.; Crespo, G.; Cherubini, T.; Pankratova, N.; Confalonieri, F.; Massa, F.; Tercier-Waeber, M.L.; Abdou, M.; Schäfer, J.; Bakker, E. *Anal. Chem.*, **2018**, *90*, 4702–4710.

315 Describing Ion Exchange at Membrane Electrodes for Ions of Different Charge
Zdrachek, E.; Bakker, E. *Electroanalysis*, **2018**, *30*, 633–640.

314 Ion Transfer Voltammetry at Thin Films Based on Functionalized Cationic [6]Helicenes
Jarolimova, Z.; Bosson, J.; Labrador, G. M.; Lacour, J.; Bakker, E. *Electroanalysis*, **2018**, *30*, 650-657.

313 Electron hopping between Fe 3d states in ethynylferrocene-doped poly(methyl methacrylate)-poly(decyl methacrylate) copolymer membranes
Cuartero, M.; Acres, R. G.; Jarolimova, Z.; Bakker, E.; Crespo, G. A.; De Marco, R. *Electroanalysis*, **2018**, *30*, 596-601.

312 Surface modified polystyrene microsensors containing lipophilic solvatochromic dye transducers
Wang, L.; Xie, X.; Cao, T.; Szilagyi, I.; Bakker, E. *Chem. Eur. J.*, **2018**, *24*, 7921-7925.

311 Agarose Hydrogel Containing Immobilized pH Buffer Microemulsion without Increasing Permselectivity
Coll Crespi, M.; Crespo, G. A.; Xie, X.; Touilloux, R.; Tercier-Waeber, M. L.; Bakker, E. *Talanta*, **2018**, *177*, 191-196.

310 Fluorinated Tripodal Receptors for Potentiometric Chloride Detection in Biological Fluids
Pankratova, N.; Cuartero, M.; Jowett, L. A.; Howe, E. N.; Gale, P. A.; Bakker, E.; Crespo, G. A. *Biosens. Bioelectron.*, **2018**, *99*, 70-76.

309 Should There be Minimum Information on Reporting Standards for Sensors?
Gooding, J. J.; Sailer, M. J.; Kelley, S.; Merkx, M.; Bakker, E.; Long, Y. T.; Tao, N. J. *ACS Sensors*, **2017**, *2*, 1377–1379.

308 Time-Dependent Determination of Unbiased Selectivity Coefficients of Ion-Selective Electrodes for Multivalent Ions
Zdrachek, E.; Bakker, E. *Anal. Chem.*, **2017**, *89*, 13441–13448.

307 In Situ Detection of Species Relevant to the Carbon Cycle in Seawater with Submersible Potentiometric Probes
Cuartero, M.; Pankratova, N.; Crespo, G. A.; Cherubini, T.; Massa, F.; Confalonieri, F.; Bakker, E. *Environ. Sci. Technol. Lett.*, **2017**, *4*, 410–415.

306 Electrochemical ion transfer mediated by a lipophilic Os(II)/Os(III) dinonyl bipyridyl probe incorporated in thin film membranes
Jansod, S.; Wang, L.; Cuartero, M.; Bakker, E. *Chem. Commun.*, **2017**, *53*, 10757-10760.

305 August 2017: Two years of submissions
Gooding, J. J.; Tao, N.; Kelley, S.; Merkx, M.; Sailor, M.; Bakker, E.; Long, Y.; Mazur, A. *ACS Sensors*, **2017**, *2*, 1068–1069.

304 Celebrating Electrochemical Sensors at the 2017 Matrafured Meeting
Bakker, E. *ACS Sensors*, **2017**, *2*, 854–854.

303 Overcoming Pitfalls in Boundary Elements Calculations with Computer Simulations of Ion Selective Membrane Electrodes
Yuan, D.; Bakker, E. *Anal. Chem.*, **2017**, *89*, 7828–7831.

302 Environmental Water Analysis with Membrane Electrodes
Cuartero, M.; Bakker, E. *Current Opinion in Electrochemistry*, **2017**, *3*, 97-105.

301 Robust Solid-contact Ion Selective Electrodes for High-Resolution In-Situ Measurements in Fresh Water Systems
Athavale, R.; Dinkel, C.; Wehrli, B.; Bakker, E.; Crespo, G. A.; Brand, A. *Environ. Sci. Technol. Lett.*, **2017**, *4*, 286–291.

300 Ionophore-Based Titrimetric Detection of Alkali Metal Ions in Serum
Zhai, J.; Xie, X.; Cherubini, T.; Bakker, E. *ACS Sensors*, **2017**, *2*, 606–612.

299 Voltammetric Thin-Layer Ionophore-Based Films: Part 1. Experimental Evidence and Numerical Simulations
Yuan, D. J.; Cuartero, M.; Crespo, G. A.; Bakker, E., *Anal. Chem.* **2017,** *89*, 586-594.

298 Voltammetric Thin-Layer Ionophore-Based Films: Part 2. Semi-Empirical Treatment
Yuan, D.; Cuartero, M.; Crespo, G. A.; Bakker, E., *Anal. Chem.* **2017,** *89,* 595-602.

297 In-Line Acidification for Potentiometric Sensing of Nitrite in Natural Waters
Pankratova, N.; Cuartero, M.; Cherubini, T.; Crespo, G. A.; Bakker, E., *Anal. Chem.* **2017,** *89*, 571-575.

296 Reflecting on How ACS Sensors Can Help Advance the Field of Sensing
Gooding, J. J.; Long, Y. T.; Tao, N.; Kelley, S.; Merks, M.; Sailor, M.; Bakker, E.; Mazur, A., *ACS Sensors* **2017,** *2*, 455-456.

295 Welcome to the First Anniversary Issue of ACS Sensors
Gooding, J. J.; Bakker, E.; Long, Y. T.; Tao, N. J.; Kelley, S.; Merkx, M.; Sailor, M.; Mazur, A., *ACS Sensors* **2017,** *2*, 1-2.

294 Electrochemical Mechanism of Ferrocene-Based Redox Molecules in Thin Film Membrane Electrodes
Cuartero, M.; Acres, R. G.; Bradley, J.; Jarolimova, Z.; Wang, L.; Bakker, E.; Crespo, G. A.; De Marco, R., *Electrochim. Acta* **2017,** *238*, 357-367.

293 Direct sensing of total alkalinity profile in a stratified lake
Afshar, M. G.; Tercier-Waeber, M. L.; Wehrli, B.; Bakker, E., *Geochem. Perspect. Let.* **2017,** *3*, 85-93.

292 Complexometric titrations: new reagents and concepts to overcome old limitations
Zhai, J. Y.; Bakker, E., *Analyst* **2016,** *141*, 4252-4261.

291 Reversible pH-independent optical potassium sensor with lipophilic solvatochromic dye transducer on surface modified microporous nylon
Wang, L.; Xie, X. J.; Zhai, J. Y.; Bakker, E., *Chem. Commun.* **2016,** *52*, 14254-14257.

290 Should ACS Sensors Publish Papers on Fluorescent Sensors for Metal Ions at All?
Gooding, J. J.; Bakker, E.; Kelley, S., *ACS Sensors* **2016,** *1*, 324-325.

289 Polyurethane Ionophore-Based Thin Layer Membranes for Voltammetric Ion Activity Sensing
Cuartero, M.; Crespo, G. A.; Bakker, E., *Anal. Chem.* **2016,** *88*, 5649-5654.

288 Evidence of double layer/capacitive charging in carbon nanomaterial-based solid contact polymeric ion-selective electrodes
Cuartero, M.; Bishop, J.; Walker, R.; Acres, R. G.; Bakker, E.; De Marco, R.; Crespo, G. A., *Chem. Commun.* **2016,** *52*, 9703-9706.

287 Electrochemical Ion Transfer with Thin Films of Poly(3-octylthiophene)
Cuartero, M.; Acres, R. G.; De Marco, R.; Bakker, E.; Crespo, G. A., *Anal. Chem.* **2016,** *88*, 6939-6946.

286 Wearable Sensors - An Exciting Area of Research for Sensor Scientists
Bakker, E.; Gooding, J. J., *ACS Sensors* **2016,** *1*, 834-834.

285 Can Calibration-Free Sensors Be Realized?
Bakker, E., *ACS Sensors* **2016,** *1*, 838-841.

284 What Should an ACS Sensors Paper Look Like?
Gooding, J. J.; Kelley, S.; Bakker, E.; Long, Y.; Tao, N. J. *ACS Sensors*, **2016**, *1*, 102-103.

283 Welcome to ACS Sensors
Gooding, J. J.; Kelley, S. O.; Bakker, E.; Long, Y.; Tao, N.; Mazur, A. *ACS Sensors*, **2016**, *1*, 1-2.

282 Alkalinization of Thin Layer Samples with a Selective Proton Sink Membrane Electrode for Detecting Carbonate by Carbonate-Selective Electrodes
Jansod, S.; Ghahraman Afshar, M.; Crespo, G.; Bakker, E. *Anal. Chem.* **2016,** *88*, 3444-3448.

281 Determination of pKa Values of Hydrophobic pH Sensitive Colorimetric Probes in Nanospheres
Xie, X.; Zhai, J.; Jarolimova, Z.; Bakker, E. *Anal. Chem.*, **2016**, *88*, 3015-3018.

280 Selective Imaging of Late Endosomes with a pH-Sensitive Diazaoxatriangulene Fluorescent Probe
Wallabregue, A.; Moreau, D.; Sherin, P.; Moneva, P.; Jarolimova, Z.; Bakker, E.; Vauthey, E.; Gruenberg, J.; Lacour, J. *J. Am. Chem. Soc.*, **2016**, *138*, 1752–1755.

279 Ion-Selective Optical Nanosensors based on Solvatochromic Dyes with Different Lipophilicity: From Bulk Partitioning to Interfacial Accumulation
Xie, X.; Szilagyi, I.; Zhai, J.; Wang, L.; Bakker, E. *ACS Sensors*, **2016**, *1*, 516-520.

278 Electroanalysis with Membrane Electrodes and Liquid-Liquid Interfaces
Bakker, E. *Anal. Chem.*, **2016**, *88*, 395–413.

277 Flow Chronopotentiometry with Ion-Selective Membranes for Cation, Anion and Polyion Detection
Ghahraman Afshar, M.; Crespo, G. A.; Bakker, E. *Anal. Chem.*, **2016**, *88*, 3945-3952.

276 Ionophore Based Voltammetric Ion Activity Sensing with Thin Layer Membranes
Cuartero, M.; Crespo, G. A.; Bakker, E. *Anal. Chem.*, **2016**, *88*, 1654–1660.

275 Phenytoin Drug Speciation Analysis with Ion-Selective Membranes
Jansod, S.; Ghahraman Afshar, M.; Crespo, G. A.; Bakker, E. *Biosens. Bioelectron.*, **2016**, *79*, 114-120.

274 Ion-selective Fluorescent and pH Independent Nanosensors Based on Functionalized Polyether Macrocycles
Jarolimova, Z.; Mahesh, V.; Lacour, J.; Bakker, E. *Chem. Sci.*, **2016**, *7*, 525-533.

273 Local Acidification of the Membrane Surface for Potentiometric Measurements of Anions in Environmental Samples
Pankratova, N.; Ghahraman Afshar, M.; Yuan, D.; Crespo, G. A.; Bakker, E. *ACS Sens.*, **2016**, *1*, 48-54.

272 Solvatochromic dyes as pH independent indicators for ionophore emulsion based complexometric titrations
Zhai, J.; Xie, X.; Bakker, E. *Anal. Chem.*, **2015**, *87*, 11587-11591.

271 Determination of Effective Stability Constants of Ion-Carrier Complexes in Ion Selective Nanospheres with Charged Solvatochromic Dyes
Xie, X.; Bakker, E., *Anal. Chem.* **2015**, *87*, 11587-11591.

270 Coulometric Calcium Pump for Thin Layer Sample Titrations
Ghahraman Afshar, M.; Crespo, G. A.; Bakker, E., *Anal. Chem.* **2015**, *87*, 10125-10130.

269 Tandem Electrochemical Desalination-Potentiometric Nitrate Sensing for Seawater Analysis
Cuartero, M.; Crespo, G. A.; Bakker, E., *Anal. Chem.* **2015**, *87*, 8084-8089.

268 All-Solid-State Potentiometric Sensors with a Multiwalled Carbon Nanotube Inner Transducing Layer for Anion Detection in Environmental Samples
Yuan, D.; Anthis, A. H. C.; Ghahraman Afshar, M.; Pankratova, N.; Cuartero, M.; Crespo, G. A.; Bakker, E., *Anal. Chem.* **2015**, *87*, 8640-8645.

267 Antifouling membrane integrated renewable gold microelectrode for in situ detection of As(III)
Touilloux, R.; Tercier-Waeber, M.-L.; Bakker, E., *Anal. Methods* **2015**, *7*, 7503-7510.

266 Charged Solvatochromic Dyes as Signal Transducers in pH Independent Fluorescent and Colorimetric Ion Selective Nanosensors
Xie, X.; Gutierrez, A.; Trofimov, V.; Szilágyi, I.; Soldati, T.; Bakker, E., *Anal. Chem.* **2015**, *87*, 9954-9959.

265 A Miniature Wastewater Cleaning Plant to Demonstrate Primary Treatment in the Classroom
Néel, B.; Cardoso, C.; Perret, D.; Bakker, E. , *J. Chem. Ed.* **2015**, *92*, 1889-1891.

264 Anion-Exchange Nanospheres as Titration Reagents for Anionic Analytes
Zhai, J.; Xie, X.; Bakker, E., *Anal. Chem.* **2015**, *87*, 8347-8352.

263 Thin Layer Ionophore-Based Membrane for Multianalyte Ion Activity Detection
Crespo, G. A.; Cuartero, M.; Bakker, E., *Anal. Chem.* **2015**, *87*, 7729-7737.

262 In-situ ammonium profiling using solid contact ion selective electrodes in eutrophic lakes
Athavale, R.; Kokorite, I.; Crespo, G. A.; Dinkel, C.; Bakker, E.; Wehrli, B.; Brand, A. *Anal. Chem.*, **2015**, *87*, 11990–11997.

261 Potassium Sensitive Optical Nanosensors Containing Voltage Sensitive Dyes
Xie, X.; Gutierrez, A.; Trofimov, V.; Szilágyi, I.; Soldati, T.; Bakker, E. *Chimia*, **2015**, *69*, 196-198.

260 Direct arsenic(III) sensing by a renewable gold nanoparticle plated Ir-based microelectrode
Touilloux, R.; Tercier-Waeber, M.; Bakker, E. *Analyst*, **2015**, *140*, 3526-2534.

259 Thin Layer Samples Controlled by Dynamic Electrochemistry
Cuartero, M.; Crespo, G. A.; Bakker, E. *Chimia*, **2015**, *69*, 203-206.

258 Thin Layer Chemical Modulations by a Combined Selective Proton Pump and pH Probe for Direct Alkalinity Detection
Ghahraman Afshar, M.; Crespo, G.A.; Bakker, E. *Angew. Chem. Int. Ed.*, **2015**, *54*, 8110-8113.

257 Potentiometric Sensing Array for Monitoring Aquatic Systems
Pankratova, N.; Jeanneret, S.; Tercier-Waeber, M. L.; Crespo, G.; Cherubini, T.; Crespi, M.; Pomati, F.; Bakker, E. *Environmental Science: Processes & Impacts*, **2015**, *17*, 906 - 914.

256 Characterization of Salophen Co(III) Acetate Ionophore for Nitrite Recognition
Ghahraman Afshar, M.; Crespo, G. A.; Barrabés, N.; Pawlak, M.; Bakker, E. *Electrochim. Acta*, **2015**, *179*, 16-23.

255 Ion-Selective Optode Nanospheres as Heterogeneous Indicator Reagents in Complexometric Titrations
Zhai, J.; Xie, X.; Bakker, E. *Anal. Chem*., **2015**, *87*, 2827–2831.

254 Paper-Based Thin Layer Coulometric Sensors for Halide Detection
Cuartero, M.; Crespo, G.A.; Bakker, E. *Anal. Chem.*, **2015**, *87*, 1981–1990.

253 Ion Selective Optodes: From the Bulk to the Nanoscale
Xie, X.; Zhai, J.; Bakker, E. *Anal. Bioanal. Chem.*, **2015**, *407*, 3899-3910.

252 Advancing Schwarzenbach's complexometry: nanoscale titration reagents based on heterogeneous reactions
Zhai, J.; Xie, X.; Bakker, E. *Chimia*, **2014**, *68*, 899.

251 Transportation and Accumulation of Redox Active Species at the Buried Interfaces of Plasticized Membrane Electrodes
Sohail, M.; de Marco, R.; Jarolimova, Z.; Pawlak, M.; Bakker, E.; He, N.; Latonen, R.-M.; Lindfors, T.; Bobacka, J., *Langmuir* **2015**, *31*, 10599-10609.

250 Thin Layer Coulometry of Nitrite with Ion-Selective Membranes
Ghahraman Afshar, M.; Crespo, G. A.; Dorokhin, D.; Neel, B.; Bakker, E. *Electroanalysis*, **2015**, *27*, 609-619.

249 Titration-free buffer capacity sensor using a dynamic optode based on hydrogel-incorporated photochromic spiropyran
Mistlberger, G.; Pawlak, M.; Bakker, E.; Klimant, I. *Chem. Commun.*, **2015**, *51*, 4172-4175.

248 Exhaustive Thin Layer Cyclic Voltammetry for Absolute Multianalyte Halide Detection
Cuartero Botia, M.; Crespo, G.; Ghahraman Afshar, M.; Bakker, E. *Anal. Chem.*, **2014**, *86*, 11387–11395.

247 Detecting and Manipulating Ions: From Potentiometry to the Nanoscale
Xie, X.; Bakker, E. *q&more*, **2014**, *2*, 6-11.

246 Potentiometric Response from Ion-Selective Nanospheres with Voltage-Sensitive Dyes
Xie, X.; Zhai, J.; Bakker, E. *J. Am. Chem. Soc.*, **2014**, *136*, 16465-16468.

245 Environmental Aquatic Sensing at the University of Geneva
Bakker, E.; Tercier-Waeber, M. L. *Chimia*, **2014**, *68*, 772–777.

244 Custom-Made Combination Galvanostat/Potentiostat and High Impedance Potentiometer for Decentralized Measurements of Ionophore-Based Electrodes
Jeanneret, S.; Crespo, G.; Ghahraman Afshar, M.; Bakker, E. *Sens. Actuators, B*, **2015**, *207*, 631–639.

243 Receptor-doped ion-exchange nanospheres as novel reagents for complexometric titrations
Zhai, J.; Xie, X.; Bakker, E. *Chem. Commun.*, **2014**, *50*, 12659 - 12661.

242 Bringing Ion-Selective Sensors to the Nanoscale: Blurring the Lines Between Sensing and Bulk Solution Chemistry
Xie, X.; Bakker, E. *Anal. Scientist*, **2014**, *20*, 17-18.

241 Evaluation of Egorov's Improved Separate Solution Method for Determination of Low Selectivity Coefficients by Numerical Simulation
Bakker, E. *Anal. Chem.*, **2014**, *86*, 8021-8024.

240 Visible Light Induced Photoacid Generation within Plasticized PVC Membranes for Copper (II) Ion Extraction
Xie, X.; Mistlberger, G.; Bakker, E. *Sens. Actuators, B*, **2014**, *204*, 807-810.

239 Creating Chemical Gradients by Light: From Bio-inspired Concepts to Photoelectric Conversion
Xie, X.; Bakker, E. *PhysChemChemPhys*, **2014**, *16*, 19781 - 19789.

238 Ionophore based Ion-Selective Optical NanoSensors Operating in Exhaustive Sensing Mode
Xie, X.; Zhai, J.; Crespo, G. A.; Bakker, E. *Anal. Chem.*, **2014**, *86*, 8770-8775.

237 Direct Alkalinity Detection with Ion-Selective Chronopotentiometry
Ghahraman Afshar, M.; Crespo, G. A.; Xie, X.; Bakker, E. *Anal. Chem.*, **2014**, *86*, 6461-6470.

236 Photoelectric Conversion based on Proton-Coupled Electron Transfer Reactions
Xie, X.; Bakker, E. *J. Am. Chem. Soc.*, **2014**, *136*, 7857-7860.

235 Potassium-Selective Optical Microsensors Based On Surface Modified Polystyrene Microspheres
Xie, X.; Crespo, G. A.; Zhai, J.; Szilagyi, I.; Bakker, E. *Chem. Commun.*, **2014**, *50*, 4592-4595.

234 Chronopotentiometric Carbonate Detection with All-Solid-State Ionophore-Based Electrodes
Jarolimova, Z.; Crespo, G. A.; Xie, X.; Ghahraman Afshar, M.; Pawlak, M.; Bakker, E. *Anal. Chem*., **2014**, *86*, 6307–6314.

233 Concanavalin A electrochemical sensor based on the surface blocking principle at ion-selective polymeric membranes
Pawlak, M.; Mistlberger, G.; Bakker, E. *Microchim. Acta*, **2015**, *182*, 129-137.

232 Counterelectrode based on ion-exchange Donnan exclusion membrane for electrochemical bioanalysis
Ghahraman Afshar, M.; Crespo, G.; Bakker, E. *Biosens. Bioelectron.*, **2014**, *61*, 64-69.

231 Chronopotentiometry of Pure Electrolytes with Anion-Exchange Donnan Exclusion Membranes
Crespo, G. A.; Gharhaman Afshar, M.; Bakker, E. *J. Electroanal. Chem.*, **2014**, *731*, 100-106.

230 pH Independent Nano-Optodes Based on Exhaustive Ion-Selective Nanospheres
Xie, X.; Zhai, J.; Bakker, E. *Anal. Chem.*, **2014**, *86*, 2853–2856.

229 Nitrite-Selective Electrode Based On Cobalt(II) Tert-Butyl-Salophen Ionophore
Neel, B.; Gharhaman Afshar, M.; Crespo, G. A.; Pawlak, M.; Bakker, E. *Electroanalysis*, **2014**, *26*, 473–480.

228 Thin Layer Coulometry Based on Ion-Exchanger Membranes for Heparin Detection in Undiluted Human Blood
Crespo, G. A.; Ghahraman Afshar, M.; Dorokhin, D.; Bakker, E. *Anal. Chem.*, **2014**, *86*, 1357-1360.

227 Camping Burner-Based Flame Emission Spectrometer for Classroom Demonstrations
Neel, B.; Crespo, G. A.; Perret, D.; Bakker, E. *J. Chem. Ed.*, **2014**, *91*, 1655–1660.

226 Light Controlled Reversible Release and Uptake of Potassium Ions from Ion-Exchanging Nanospheres
Xie, X.; Bakker, E. *ACS App. Mater. Inter.*, **2014**, *6*, 2666–2670.

225 Chemical modifications of ion-selective electrode membrane surfaces for clinical diagnostics
Pawlak, M.; Bakker, E. *Electroanalysis*, **2014**, *26*, 1121-1131.

224 Ionophore-Based Optical Sensors
Mistlberger, G.; Crespo, G.A.; Bakker, E. *Ann. Rev. Anal. Chem.*, **2014**, *7*, 483-512.

223 Potentiometric Sensors
Bakker, E., in Environmental Analysis with Electrochemical Sensors and Biosensors, Moretto, L. M.; Kalcher, K. (Eds.), Springer, **2014**. ISBN 978-1-4939-0675-8

222 Photocurrent Generation Based on Light-Driven Proton Pump in Supported Liquid Membranes Doped with Photoswitchable Spiropyran
Xie, X.; Crespo, G. A.; Mistlberger, G.; Bakker, E. *Nature Chem.*, **2014**, *6*, 202-207.

221 Low-Cost Thin Layer Coulometric Microfluidic Device Based on Ion-Selective Membrane for Calcium Determination
Dorokhin, D.; Crespo, G.A.; Ghahraman Afshar, M.; Bakker, E. *Analyst*, **2014**, *139*, 48 - 51.

220 Enhancing Ion-Selective Polymeric Membrane Electrodes by Instrumental Control
Bakker, E. *Trends Anal. Chem.*, **2014**, *53C*, 98-105.

219 Evidence for a Surface Confined Ion-to-Electron Transduction Reaction in Solid-Contact Ion-Selective Electrodes Based on Poly(3-octylthiophene)
Veder, J.-P.; De Marco, R.; Patel, K.; Si, P.; Grygolowicz-Pawlak, E.; James, M.; Alam, M. T.; Sohail, M.; Pretsch, E.; Bakker, E. *Anal. Chem.*, **2013**, *85*, 10495–10502.

218 Ultrasmall Fluorescent Ion-Exchanging Nanospheres Containing Selective Ionophores
Xie, X.; Mistlberger, G.; Bakker, E. *Anal. Chem.*, **2013**, *85*, 9932–9938.

217 Dynamic Electrochemistry with Ionophore Based Ion-Selective Membranes
Crespo, G.A.; Bakker, E. *RSC Advances*, **2013**, *3*, 25461-25474.

216 All Solid State Chronopotentiometric Ion-Selective Electrodes Based on Ferrocene Functionalized PVC
Jarolimova, Z.; Crespo, G. A.; Gharaman Afshar, M.; Pawlak, M.; Bakker, E. *J. Electroanal. Chem.*, **2013**, *709*, 118-125.

215 Oxazinoindolines as Fluorescent H+ Turn-On Chromoionophores For Optical and Electrochemical Ion Sensors
Xie, X.; Crespo, G. A.; Bakker, E. *Anal. Chem.*, **2013**, *85*, 7434–7440.

214 Molecularly Imprinted Polymer Microspheres Containing Photoswitchable Spiropyran-Based Binding Sites
Renkecz, T.; Mistlberger, G.; Pawlak, M.; Horvath, V.; Bakker, E. *ACS App. Mater. Inter.*, **2013**, *5*, 8537–8545.

213 Detecting of Heparin in Whole Blood for Point of Care Anticoagulation Control During Surgery
Bakker, E.; Crespo, G. A.; Afshar, M. G.; Saxer, T.; Bendjelid, K. *Chimia*, **2013**, *67*, 350.

212 A Label-Free Potentiometric Sensor Principle for the Detection of Antibody-Antigen Interactions
Ozdemir, M. S.; Marczak, M.; Bohets, H.; Bonroy, K.; Rohmans, D.; Stuyver, L.; Vanhoutte, K.; Pawlak, M.; Bakker, E. *Anal. Chem.*, **2013**, *85*, 4770–4776.

211 Potentiometric Sensors with Ion-Exchange Donnan Exclusion Membranes
Grygolowicz-Pawlak, E.; Crespo, G.; Mistlberger, G.; Ghahraman Afshar, M.; Bakker, E. *Anal. Chem.*, **2013**, *85*, 6208-6212.

210 Transport and accumulation of ferrocene tagged poly(vinyl chloride) at the buried interfaces of solid-contact plasticized poly(vinyl chloride) based ion-selective membrane electrodes
Sohail, M.; De Marco, R.; Alam, M. T.; Pawlak, M.; Bakker, E. *Analyst*, **2013**, *138*, 4266-4269.

209 PVC-based Ion-Selective Electrodes with Enhanced Biocompatibility by Surface Modification with "Click" Chemistry
Pawlak, M.; Grygolowicz-Pawlak, E.; Crespo, G. A.; Mistlberger, G.; Bakker, E. *Electroanalysis*, **2013**, *25*, 1840–1846.

208 Photoresponsive Ion Extraction/Release Systems: Dynamic Ion Optodes for Calcium and Sodium Based on Photochromic Spiropyran
Mistlberger, G.; Xie, X.; Pawlak, M.; Crespo, G.; Bakker, E. *Anal. Chem.*, **2013**, *85*, 2983-2990.

207 A Non-Severinghaus Potentiometric CO2 Sensor with Improved Characteristics
Xie, X.; Bakker, E. *Anal. Chem.*, **2013**, *85*, 1332-1336.

206 Direct Detection of Acidity, Alkalinity and pH with Membrane Electrodes
Crespo, G.; Afshar, M.G.; Bakker, E. Anal. Chem., 2012, 84, 10165-10169.

205 Direct Ion Speciation Analysis with Ion-Selective Membranes Operated in a Sequential Potentiometric/Time Resolved Chronopotentiometric Sensing Mode
Afshar, M.G.; Crespo, G.A.; Bakker, E. Anal. Chem., 2012, 84, 8813-8821.

204 Reversible Photodynamic Chloride-Selective Sensor Based on Photochromic Spiropyran
Xie, X.; Mistlberger, G.; Bakker, E. J. Am. Chem. Soc., 2012, 134, 16929–16932.

203 Detection Limits of Thin Layer Coulometry with Ionophore-Based Ion-Selective Membranes
Shvarev, A.; Néel, B.; Bakker, E. Anal. Chem., 2012, 84, 8038–8044.

202 Reversible Detection of the Anticoagulant Heparin with Permselective Membrane Electrodes
Crespo, G.A.; Afshar, M.G.; Bakker, E. Angew. Chem. Int. Ed., 2012, 51, 12575-12578.

201 Thin Layer Potentiometric and Coulometric Determination of Nitrate in Fresh Waters
Sohail, M.; De Marco, R.; Lamb, K.; Bakker, E. Anal. Chim. Acta, 2012, 744, 39-44.

200 Coulometric Sodium Chloride Removal System with Nafion Membrane for Seawater Sample Treatment
Grygolowicz-Pawlak, E.; Sohail, M.; Pawlak, M.; Néel, B.; Shvarev, A.; De Marco, R.; Bakker, E. Anal. Chem., 2012, 84, 6158-6165.

199 Ionophore-Based Ion Optodes without a Reference Ion: Electrogenerated Chemiluminescence for Potentiometric Sensors
Crespo, G.A.; Bakker, E. Analyst, 2012, 137, 4988-4994.

198 In Situ Surface Functionalization of Plasticized Poly(Vinyl Chloride) Membranes by 'Click Chemistry'
Pawlak, M.; Mistlberger, G.; Bakker, E. J. Mater. Chem., 2012, 22, 12796-2801.

197 Photodynamic ion sensor systems with spiropyran: photoactivated acidity changes in plasticized poly(vinyl chloride)
Mistlberger, G.; Crespo, G.A.; Xie, X.; Bakker, E. Chem. Commun., 2012, 48, 5662-5664.

196 Pulsed Chronopotentiometric Membrane Electrodes Based on Plasticized Poly(Vinyl Chloride) with Covalently Bound Ferrocene Functionalities as Solid Contact Transducer
Pawlak, M.; Grygolowicz-Pawlak, E.; Bakker, E. Pure Appl. Chem., 2012, 84, 2045-2054.

195 Electrogenerated Chemiluminescence for Potentiometric Sensors
Crespo, G.; Mistlberger, G.; Bakker, E. J. Am. Chem. Soc., 2012, 134, 205-207.

194 Towards Ion-Selective Membranes with Electrogenerated Chemiluminescence Detection: Visualizing Selective Ru(bpy)32+ Transport across a Plasticized Poly(vinyl chloride) Membrane
Crespo, G.; Mistlberger, G.; Bakker, E. Electroanalysis, 2012, 24, 61-68.

193 Direct Optical Carbon Dioxide Sensing Based on a Polymeric Sensing Film Doped with a Selective Molecular Tweezer Type Ionophore
Xie, X.; Tercier-Waeber, M.; Pawlak, M.; Bakker, E. Anal. Chem., 2012, 84, 3163-3169.

192 Editorial: Matrafured Meeting on Electrochemical Sensors
Bakker, E.; Buhlmann, P.; Gyurcsanyi, R.; Pretsch, E.; Wang, J. Electroanalysis, 2012, 24, 11-12.

191 Interference Compensation for Thin Layer Coulometric Ion-Selective Membrane Electrodes by the Double Pulse Technique
Grygolowicz-Pawlak, E.; Numnuam, A.; Thavarungkul, P.; Kanatharana, P.; Bakker, E. Anal. Chem., 2012, 84, 1327-1335.

190 Advances in Potentiometry
Bakker, E.; Pretsch, E. Electroanalytical Chemistry: A Series of Advances (A. Bard, Editor), 2012, CRC Press.

189 Membrane Response Model for Ion-Selective Electrodes Operated by Controlled Potential Thin-Layer Coulometry
Bakker, E. Anal. Chem., 2011, 83, 486-493.

188 Electrogenerated Chemiluminescence Triggered by Electroseparation of Ru(bpy)32+ Across a Supported Liquid Membrane
Crespo, G.; Mistlberger, G.; Bakker, E. Chem. Commun., 2011, 47, 11644-11646.

187 Advancing Membrane Electrodes and Optical Ion Sensors
Bakker, E.; Crespo, G.; Grygolowicz-Pawlak, E.; Mistlberger, G.; Pawlak, M.; Xie, X. Chimia, 2011, 65, 141-149.

186 Water Uptake in Poly(3,4-Ethylenedioxythiophene):Poly(Styrene Sulfonate) Solid-Contact Polymeric Ion-Selective Electrodes
Veder, J.-P.; De Marco, R.; Clarke, G.; Jiang, S.P.; Prince, K.; Dalgiesh, R.; Pretsch, E.; Bakker, E. Analyst, 2011, 136, 3252-3258.

185 Thin Layer Coulometry Ion Sensing Protocol with Potassium Selective Membrane Electrodes
Grygolowicz-Pawlak, E.; Bakker, E. Electrochim. Acta, 2011, 56, 10359-10363.

184 Chemical kinetics of gold nanorod growth in aqueous cetyltrimethylammonium bromide solutions
Bullen, C.; Zijlstra, P.; Bakker, E.; Gu, M.; Raston, C. Cryst. Growth Des., 2011, 11, 3375-3380.

183 Potentiometric Determination of Coextraction Constants of Potassium Salts in Ion-Selective Electrodes Utilizing a Nitrobenzene Liquid Membrane Phase Silvester-Dean, D.; Grygolowicz-Pawlak, E.; Bakker, E. Anal. Chim. Acta, 2010, 683, 92-95.

182 Background Current Elimination in Thin Layer Ion-Selective Membrane Coulometry
Grygolowicz-Pawlak, E.; Bakker, E. Electrochem. Commun., 2010, 12, 1195-1198.

181 A Synchrotron Radiation/Fourier Transform-Infrared Microspectroscopy (SR/FT-IRM) Study of Undesriable Water Inclusions in Solid Contact Polymeric Ion-Selective Electrodes

Veder, J.-P.; Patel, K.; Clarke, G.; Grygolowicz-Pawlak, E.; Silvester-Dean, D.; De Marco, R.; Pretsch, E.; Bakker, E. Anal. Chem., 2010, 82, 6203-6207.

180 Ferrocene Bound Poly(Vinyl Chloride) as Ion to Electron Transducer in Electrochemical Sensors
Pawlak, M.; Grygolowicz-Pawlak, E.; Bakker, E. Anal. Chem., 2010, 82, 6887-6894.

179 An Acyclic Trialkylamine Virtually Planar at Nitrogen. Some Chemical Consequences of Nitrogen Planarity
Jie, Y.-P.; Livant, P.; Li, H.; Yang, M.M.; Zhu, W.; Cammarata, V.; Almond, P.; Sullens, T.; Qin, Y; Bakker, E. J. Org. Chem., 2010, 75, 4472-4479.

178 Amplified Potentiometric Transduction of DNA Hybridization Using Ion-Loaded Liposomes
Chumbimuni-Torres, K.Y.; Wu, J.; Clawson, C.; Galik, M.; Walter, A.; Flechsig, G.-U.; Bakker, E.; Zhang, L.; Wang, J. Analyst, 2010, 135, 1618-1623.

177 Thin Layer Coulometry with Ionophore Based Ion-Selective Membranes
Grygolowicz-Pawlak, E.; Bakker, E. Anal. Chem., 2010, 82, 4537-4542.

176 Assessing ion-exchange properties and purity of lipophilic electrolytes by potentiometry and spectrophotometry
Silvester, D.S.; Grygolowicz-Pawlak, E.; Bakker, E. Electrochem. Commun., 2010, 12, 110-113.

175 Generalized Selectivity Description for Polymeric Ion-Selective Electrodes Based on the Phase Boundary Potential Model
Bakker, E. J. Electroanal. Chem., 2010, 639, 1-7.

174 High Temperature Potentiometry: Modulated Response of Ion-Selective Electrodes During Heated Pulses
Chumbimuni-Torres, K.Y.; Thammakhet, C.; Galik, M.; Wu, J.; Galvo-Marzal, P.; Bakker, E.; Flechsig, G.-U.; Wang, J. Anal. Chem., 2009, 81, 10290-10294.

173 Real-Time Probing of the Growth Dynamics of Nanoparticles Using Potentiometric Ion-Selective Electrodes
Chumbimuni-Torres, K.Y.; Bakker, E.; Wang, J. Electrochem. Commun., 2009, 11, 1964-1967.

172 International Conference on Electrochemical Sensors Matrafured 2008
Buhlmann, P.; Bakker, E.; Gyurcsanyi, R.; Pretsch, E.; Wang, J. Electroanalysis, 2009, 21, 1883-1886.

171 Thin Layer Electrochemical Extraction of Non-Electroactive Cations
Si, P.; Bakker, E. Chem. Commun., 2009, 35, 5260-5262.

170 Limitations of Current Polarization for Lowering the Detection Limit of Polymeric Membrane Potentiometric Sensors

Höfler, L.; Bedlechowicz, I.; Vigassy, T.; Gyurcsanyi, R.E.; Bakker, E.; Pretsch, E. Anal. Chem., 2009, 81, 3592-3599.

169 Flash Chronopotentiometric Sensing of the Polyions Protamine and Heparin at Ion-Selective Membranes
Gemene, K.L.; Bakker, E. Anal. Biochem., 2009, 386, 276-281.

168 Synthesis and Characterization of High Integrity Solid Contact Polymeric Ion Sensors
De Marco, R.; Jee, E.; Prince, K.; Pretsch, E.; Bakker, E. Solid State Electrochem., 2009, 13, 137-148.

167 Direct Measurement of Total Calcium in Physiological Fluids by Flash Chronopotentiometry at Polymer Membrane Ion-Selective Electrodes Gemene, K.L.; Bakker, E. Anal. Chim. Acta, 2009, 648, 240-245.

166 Ion Channel Mimetic Chronopotentiometric Polymeric Membrane Ion Sensor for Surface Confined Protein Detection
Xu, Y.; Bakker, E. Langmuir, 2009, 25, 568-573.

165 Backside Calibration Chronopotentiometry: Using Current to Perform Ion Measurements by Zeroing the Transmembrane Ion Flux
Xu, Y.; Ngeontae, W.; Pretsch, E.; Bakker, E. Anal. Chem., 2008, 80, 7516-7523.

164 Elimination of undesirable water layers in solid contact polymeric ion-selective electrodes
Veder, J.-P.; De Marco, R.; Clarke, G.; Chester, R.; Nelson, A.; Prince, K.; Pretsch, E.; Bakker, E. Anal. Chem., 2008, 80, 6731-6740.

163 Electrochemical Sample Matrix Elimination for Trace Level Potentiometric Detection with Polymeric Membrane Ion-Seletive Electrodes
Chumbimuni-Torres, K.Y.; Calvo-Marcal, P.; Wang, J.; Bakker, E. Anal. Chem., 2008, 80, 6114-6118.

162 Nanoscale Potentiometry
Bakker, E.; Pretsch, E. Trends Anal. Chem., 2008, 27, 612-618.

161 Phosphate Selective Fluorescent Sensing Microspheres Based on Uranyl Salophene Ionophores
Wygladacz, K.; Qin, Y.; Wroblewski, W.; Bakker, E. Anal. Chim. Acta, 2008, 614, 77-84.

160 Erno Pretsch 65 years
Bakker, E. Electroanalysis, 2008, 20, 223-224.

159 Modern Directions for Potentiometric Sensors
Bakker, E.; Chumbimuni-Torres, K.Y. J. Braz. Chem. Soc., 2008, 19, 621-629.

158 New Trends in Ion-Selective Electrodes
Makarychev-Mikhailov, S.; Shvarev, A.; Bakker, E. In: Electrochemical Sensors,

Biosensors and their Biomedical Applications (Zhang, Y; Ju, H; Wang, J., Eds), Elsevier, 2008.

157 Reversible Detection of Proteases and Their Inhibitors by a Pulsed Chronopotentiometric Polyion Sensitive Electrode
Xu, Y.; Shvarev, A.; Makarychev-Mikhailov, S.; Bakker, E. Anal. Biochem., 2008, 374, 366-370.

156 Potentiometric Detection of DNA Hybridization
Numnuam, A.; Chumbimuni-Torres, K.Y.; Xiang, Y.; Bash, R.; Thavarungkul, P.; Kanatharana, P.; Pretsch, E.; Wang, J.; Bakker, E. J. Am. Chem. Soc., 2008, 130, 410-411.

155 Direct Sensing of Total Acidity with Polymer Membrane Ion-Selective Electrodes
Gemene, K.L.; Bakker, E. Anal. Chem., 2008, 80, 3743-3750.

154 Evidence of a Water Layer in Solid-Contact Polymeric Ion Sensors
De Marco, R.; Veder, J.-P.; Clarke, G.; Nelson, A.; Prince, K.; Pretsch, E.; Bakker, E. PhysChemChemPhys, 2008, 10, 73-76.

153 Aptamer-Based Potentiometric Measurements of Proteins Using Ion-Selective Microelectrodes
Numnuam, A.; Chumbimuni-Torres, K.Y.; Xiang, Y.; Bash, R.; Thavarungkul, P.; Kanatharana, P.; Pretsch, E.; Wang, J.; Bakker, E. Anal. Chem., 2008, 80, 707-712.

152 Operational Limits of Controlled Current Coulometry with Ion-Selective Polymeric Membranes
Bhakthavatsalam, V.; Bakker, E. Electroanalysis, 2008, 20, 225-232.

151 Beyond Potentiometry: Robust Electrochemical Ion Sensor Concepts in View of Remote Chemical Sensing
Bakker, E.; Bhaktavatsalam, V.; Gemene, K. L. Talanta, 2008, 75, 629-635.

150 Sensitivity and Working Range of Backside Calibration Potentiometry Ngeontae, W.; Xu, Y.; Xu, C.; Aeungmaitepirom, W.; Tuntulani, T.; Pretsch, E.; Bakker, E. Anal. Chem., 2007, 79, 8705-8711.

149 Kinetic Modulation of Pulsed Chrono-potentiometric Polymeric Membrane Ion Sensors by Polyelectrolyte Multilayers
Xu, Y.; Xu, C.; Shvarev, A.; Becker, T.; De Marco, R.; Bakker, E. Anal. Chem., 2007, 79, 7154-7160.

148 Multiplexed Flow Cytometric Sensing of Blood Electrolytes in Physiological Samples Using Fluorescent Bulk Optode Microspheres
Xu, C.; Wygladacz, K.; Retter, R.; Bell, M.; Bakker, E. Anal. Chem., 2007, 79, 9505-9512.

147 Absorbance Characterization of Microsphere-Based Ion-Selective Optodes
Ye, N.; Wygladacz, K.; Bakker, E. Anal. Chim. Acta, 2007, 596, 195-200.

146 Polymerized Nile Blue Derivatives for Plasticizer-Free Fluorescent Bulk Optode Ion Sensors
Ngeontae, W.; Xu, C.; Ye, N.; Wygladacz, K.; Aeungmaitepirom, W.; Tuntulani, T.; Bakker, E. Anal. Chim. Acta, 2007, 599, 124-133.

145 Potentiometric Immunoassay with Quantum Dot Labels
Thürer, R.; Vigassy, T.; Hirayama, M.; Wang, J.; Bakker, E. Anal. Chem., 2007, 79, 5107-5110.

144 Multicolor Quantum-dot Encoding for Polymeric Particle-Based Optical Ion Sensors
Xu, C.; Bakker, E. Anal. Chem., 2007, 79, 3716-3723.

143 Modern Potentiometry
Bakker, E.; Pretsch, E. Angew. Chem. Int. Ed., 2007, 46, 5660-5668.

142 Uniform Polymeric Hollow Microcapsules with Controlled Doping Levels Fabricated Under Non-Reactive Conditions
Wygladacz, K.; Ye, N.; Xu, C.; Retter, R.W.; Bell, M.; Hilgenbrink, A.; Bakker, E. Adv. Mat., 2007, 19, 1059-1063.

141 Fluorescent microsphere fiber optic microsensor array for direct iodide detection at low picomolar concentrations
Wygladacz, K.; Bakker, E. Analyst, 2007, 132, 268-272.

140 Backside Calibration Potentiometry: Ion Activity Measurements with Selective Supported Liquid Membranes by Calibrating from the Back Side of the Membrane
Malon, A.; Bakker, E.; Pretsch, E. Anal. Chem., 2007, 79, 632-638.

139 Selectivity Enhancement of Anion-Selective Electrodes by Pulsed Chronopotentiometry
Gemene, K.L.; Shvarev, A.; Bakker, E. Anal. Chim. Acta, 2007, 583, 190-196.

138 Guidelines for Improving the Lower Detection Limit of Ion-Selective Electrodes: A Systematic Approach
Radu, A.; Peper, S.; Bakker, E.; Diamond, D. Electroanalysis, 2007, 19, 144-154.

137 Solid Contact Potentiometric Polymer Membrane Microelectrodes for the Detection of Silver Ions at the Femtomole Level
Rubinova, N.; Chumbimuni-Torres, K.; Bakker, E. Sens. Actuators, B, 2007, 121, 135-141.

136 Potentiometric Biosensing of Proteins with Ultrasensitive Ion-Selective Microelectrodes
Chumbimuni-Torres, K.Y.; Rubinova, N.; Pretsch, E.; Wang, J.; Bakker, E. J. Am. Chem. Soc., 2006, 128, 13676-13677.

135 Recentes Avancos e Novas Perspectivas dos Electrodos Ion-Selectivos
Chumbimuni-Torres, K.Y.; Marzal, P.C.; Kubota, L.T.; Bakker, E. Quim. Nova, 2006, 29, 1094-1100.

134 Potentiometry at Trace Levels in Confined Samples: Ion-Selective Electrodes with sub-Femtomole Detection Limits
Malon, A.; Vigassy, T.; Bakker, E.; Pretsch, E. J. Am. Chem. Soc., 2006, 128, 8154-8155.

133 Electrochemical Sensors (Fundamental Review)
Bakker, E.; Qin, Y. Anal. Chem., 2006, 78, 3965-3983.

132 Novel potentiometric and optical Ag+-selective sensors with subnanomolar detection limits
Szigeti, Z.; Malon, A.; Vigassy, T.; Csokai, V.; Grün, A.; Wygladacz, K.; Yu, N.; Bitter, R.; Bakker, E.; Pretsch, E. Anal. Chim. Acta, 2006, 572, 1-10.

131 Selective Coulometric Release of Ions from Ion Selective Polymeric Membranes for Calibration-Free Titrations
Bhakthavatsalam, V.; Shvarev, A.; Bakker, E. Analyst, 2006, 131, 895-900.

130 Approaches to Improving the Lower Detection Limit of Polymeric Membrane Ion-Selective Electrodes
Szigeti, Z.; Vigassy, T.; Bakker, E.; Pretsch, E. Electroanalysis, 2006, 18, 1254-1265.

129 Meeting Report: Electrochemical Sensors
Bakker, E.; Bühlmann, P.; Pretsch, E. Trends Anal. Chem., 2006, 25, 93-95.

128 Calcium Pulstrodes for Highly Sensitive Measurements in the Physiological Concentration Range
Makarychev-Mikhailov, S.; Shvarev, A.; Bakker, E. Anal. Chem., 2006, 78, 2744-2751.

127 Solid Contact Potentiometric Sensors for Trace Level Measurements
Chumbimuni-Torres, K.; Ruvinova, N.; Radu, A.; Kubota, L.T.; Bakker, E. Anal. Chem., 2006, 78, 1318-1322.

126 Fiber Optic Microsensor Array Based on Fluorescent Bulk Optode Microspheres for the Trace Analysis of Silver Ions
Wygladacz, K.; Radu, A.; Xu, C.; Qin, Y.; Bakker, E. Anal. Chem., 2005, 77, 4706-4712.

125 Solid Contact Potentiometric Sensors for Trace Level Measurements
Chumbimuni-Torres, K.; Rubinova, N.; Radu, A.; Kubota, L.T.; Bakker, E. Anal. Chem., 2006, 78, 1318-1322.

124 Reversible Electrochemical Monitoring of Surface Confined Reactions at Liquid-Liquid Interfaces by Modulation of Ion Transfer Fluxes
Xu, Y.; De Marco, R.; Shvarev, A.; Bakker, E. Chem. Commun., 2005, , 3074-3076.

123 Response Characteristics of a Reversible Electrochemical Sensor for the Polyion Protamine Shvarev, A.; Bakker, E. Anal. Chem., 2005, 77, 5221-5228.

122 Microsphere Optical Ion Sensors Based On Doped Silica Templates Xu, C.; Wygladacz, K.; Qin, Y.; Retter, R.; Bell, M.; Bakker, E. Anal. Chim. Acta, 2005, 537, 135-143.

121 Editorial: Trace-Metal Analysis
Bakker, E.; Günter, D.; Pretsch, E. Trends Anal. Chem., 2005, 24, 170.

120 Potentiometric Sensors for Trace Level Analysis
Bakker, E.; Pretsch, E. Trends Anal. Chem., 2005, 24, 199-207.

119 Shifting the measuring range of chloride selective electrodes and optodes based on the anticrown ionophore [9]mercuracarborand-3 by the addition of 1-decanethiol
Radu, A.; Bakker, E. Chem. Anal., 2005, 50, 71-83.

118 Imaging Fiber Microarray Fluorescent Ion Sensors Based on Bulk Optode Microspheres
Wygladacz, K.; Bakker, E. Anal. Chim. Acta, 2005, 532, 61-69.

117 Ion-selective Electrodes: (d) Liquid Membrane
E. Bakker (2005) Encylopedia of Analytical Sciences, Elsevier, Second Edition (Paul J. Worsfold, Alan Townshend and Colin F. Poole, eds.), Elsevier, Vol. 4, pp. 509-514.

116 Dynamic Diffusion Model for Tracing the Real-Time Potential Response of Polymeric Membrane Ion-selective Electrodes
Radu, A.; Meir, A.J.; Bakker, E. Anal. Chem., 2004, 76, 6402-6409.

115 Solid-contact polymeric membrane electrodes with detection limits in the subnanomolar range
Sutter, J.; Radu, A.; Peper, S.; Bakker, E.; Pretsch, E. Anal. Chim. Acta, 2004, 523, 53-59.

114 Pulstrodes: Triple Pulse Control of Potentiometric Sensors
Makarychev-Mikhailov, S.; Shvarev, A.; Bakker, E. J. Am. Chem. Soc., 2004, 126, 10548-10549.

113 Electrochemical Sensors
Bakker, E. Anal. Chem., 2004, 76, 3285-3298.

112 Elimination of Dimer Formation in In(III) Pophyrin-Based Anion-Selective Membranes by Covalent Attachment of the Ionophore
Qin, Y.; Bakker, E. Anal. Chem., 2004, 76, 4379-4386.

111 Optical Determination of Ionophore Diffusion Coefficients in Plasticized Poly(Vinyl Chloride) Sensing Films
Long, R.; Bakker, E. Anal. Chim. Acta, 2004, 511, 91-95.

110 Distinguishing Free and Total Calcium with a Single Pulsed Galvanostatic Ion-Selective Electrode
Shvarev, A.; Bakker, E. Talanta, 2004, 63, 195-200.

109 Optical Chloride Sensor based on [9]Mercuracarborand-3 with Massively Expanded Measuring Range
Xu, C.; Qin, Y.; Bakker, E. Talanta, 2004, 63, 180-184.

108 The Phase-Boundary Potential Model
Bakker, E.; Bühlmann, P.; Pretsch, E. Talanta, 2004, 63, 3-20.

107 International Conference on Electrochemistry, Matrafured-02 (Guest Editorial)
Bühlmann, P.; Bakker, E.; Pretsch, E.; Toth, K. Electroanalysis, 2003, 15, 2.

106 Reversible Electrochemical Detection of Non-Electroactive Polyions
Shvarev, A.; Bakker, E. J. Am. Chem. Soc., 2003, 125, 11192-11193.

105 Rotating Electrode Potentiometry for Inner Solution Optimization of Low-Detection-Limit Ion-Selective Electrodes
Radu, A.; Telting-Diaz, M.; Bakker, E. Anal. Chem., 2003, 75, 6922-6931.

104 Applying Sensor Principles to the Multiplexed Particle-Based Flow Cytometric Analysis of Clinically Relevant Electrolytes
Bakker, E.; Bell, M. J. Clin. Ligand Assay, 2003, 26, 98-106.

103 A Co-Polymerized Dodecacarborane Anion as Covalently Attached Cation-Exchanger in Ion-Selective Sensors
Qin, Y.; Bakker, E. Anal. Chem., 2003, 75, 6002-6010.

102 Pulsed Galvanostatic Control of Ionophore-Based Polymeric Ion Sensors
Shvarev, A.; Bakker, E. Anal. Chem., 2003, 75, 4541-4550.

101 Ion-Sensing Microspheres for Multiplexed Chemical Analysis of Clinical and Biological Samples
Peper, S.; Bakker, E. Sensors Update, 2003, 13, 83-104.

100 Improving the Detection Limit of Anion-Selective Electrodes: An Iodide Electrode with a Nanomolar Detection Limit
Malon, A.; Radu, A.; Qin, W.; Qin, Y.; Ceresa, A.; Maj-Zurawska, M.; Bakker, E.; Pretsch, E. Anal. Chem., 2003, 75, 3865-3871.

99 Spectral Imaging and Electrochemical Study on the Response Mechanism of Ionophore-Based Polymeric Membrane Amperometric pH Sensors
Long, R.; Bakker, E. Electroanalysis, 2003, 15, 1261-1269.

98 Ion-Pairing Ability, Chemical Retention, and Selectivity Behavior of Various Halogenated Dodecacarborane Cation Exchangers in Neutral Carrier Based Ion-Selective Electrodes
Peper, S.; Qin, Y.; Almond, P.; McKee, M.; Telting-Diaz, M.; Albrecht-Schmitt, T.; Bakker, E. Anal. Chem., 2003, 75, 2131-2139.

97 Mechanistic Insights into the Development of Highly Selective Optical Chloride Sensors Based on the [9]Mercuracarborand-3 Ionophore
Ceresa, A.; Qin, Y.; Peper, S.; Bakker, E. Anal. Chem., 2003, 75, 133-140.

96 Plasticizer-Free Microspheres for Ionophore-Based Sensing and Extraction Based on a Methyl Methacrylate–Decyl Methacrylate Copolymer Matrix
Peper, S.; Ceresa, A.; Qin, Y.; Bakker, E. Anal. Chim. Acta, 2003, 500, 127-136.

95 Plasticizer-Free Polymer Containing a Covalently Immobilized Ca2+-Selective Ionophore for Potentiometric and Optical Sensors
Qin, Y.; Peper, S.; Radu, A.; Ceresa, A.; Bakker, E. Anal. Chem., 2003, 75, 3038-3045.

94 Palm-Based Data Acquisition Solutions for the Undergraduate Chemistry Laboratory
Hudgins, S.; Qin, Y.; Bakker, E.; Shannon, C. J. Chem. Ed., 2003, 75, 3038-3045.

93 How Do Pulsed Amperometric Ion Sensors Work? A P.D.E. Solution
Bakker, E.; Meir, A.J. Siam Review, 2003, 45, 327-344.

92 Quantitative Binding Constants of H+-Selective Chromoionophores and Anion Ionophores in Solvent Polymeric Sensing Membranes
Qin, Y.; Bakker, E. Talanta, 2002, 58, 909-918.

91 Potentiometric Sensors Improve Dramatically
Pretsch, E.; Bühlmann, P.; Bakker, E. Trends Anal. Chem., 2002, 21, XVI-XVIII.

90 Electrochemical Sensors
Bakker, E.; Telting-Diaz, M. Anal. Chem., 2002, 74, 2781-2800.

89 Variable Dimensionality and New Uranium Oxide Topologies in the Alkaline-Earth Metal Uranyl Selenites AE[(UO2)(SeO3)2] (AE = Ca, Ba) and Sr[(UO2)(SeO3)2]·2H2O
Almond, P.M.; Peper, S.M.; Bakker, E.; Albrecht-Schmitt, T.E. Solid State Chem., 2002, 168, 358-366.

88 Mass-Produced Ionophore-Based Fluorescent Microspheres for Rapid Trace Level Determination of Lead Ions
Telting-Diaz, M.; Bakker, E. Anal. Chem., 2002, 74, 5251-5256.

87 Flow Cytometric Ion Detection with Plasticized Poly(Vinyl Chloride) Microspheres Containing Ionophores
Retter, R.; Peper, S.; Bell, M.; Tsagkatakis, I; Bakker, E. Anal. Chem., 2002, 74, 5420-5425.

86 Rational Design of Potentiometric Trace Level Ion Sensors. A Ag+-Selective Electrode with a 100 ppt Detection Limit
Ceresa, A.; Radu, A.; Peper, S.; Bakker, E.; Pretsch, E. Anal. Chem., 2002, 74, 4027-4036.

85 Trace Level Potentiometry: The New Wave of Ion-Selective Electrodes
Bakker, E.; Pretsch, E. Anal. Chem., 2002, 74, 420A-426A.

84 Ion-Selective Electrodes for Measurements in Biological Fluids
Bakker, E.; Meyerhoff, M.E. in Encyclopedia of Electrochemistry, A.J. Bard and M. Strattmann, eds., Volume 9 - Bioelectrochemistry, G.S. Wilson, ed., Wiley-VCH, Weinheim, 2002, pp. 277-307.

83 Plasticizer-Free Polymer Membrane Ion-Selective Electrodes Containing a Methacrylic Copolymer Matrix
Qin, Y.; Peper, S.; Bakker, E. Electroanalysis, 2002, 14, 1375-1382.

82 Perbrominated Closo-Dodecacarborane Anion, 1-HCB11Br11-, as Ion-Exchanger in Cation-Selective Chemical Sensors
Peper, S.; Telting-Diaz, M.; Almond, P.; Albrecht-Schmitt, T.; Bakker, E. Anal. Chem., 2002, 74, 1327-1332.

81 Evaluation of the Separate Equilibrium Processes that Dictate the Upper Detection Limit of Ionophore-Based Potentiometric Sensors
Qin, Y.; Bakker, E. Anal. Chem., 2002, 74, 3134-3141.

80 Response and Diffusion Behavior of Mobile and Covalently Immobilized H+-Ionophores in Polymer Membrane Ion-Selective Electrodes
Püntener, M.; Fibbioli, M.; Bakker, E.; Pretsch, E. Electroanalysis, 2002, 14, 1329-1338.

79 Potentiometry at Trace Levels
Bakker, E.; Pretsch, E. Trends Anal. Chem., 2001, 20, 11-19.

78 Erratum to “A Potentiometric Cd2+-Selective Electrodes with a Detection Limit in the Low ppt Range” [Analytica Chimica Acta 440 (2001) 71-79]
Ion, A.C.; Bakker, E.; Pretsch, E. Anal. Chim. Acta, 2002, 452, 329-329.

77 Effect of Lipophilic Ion-Exchanger Leaching on the Detection Limit of Carrier-Based Ion-Selective Electrodes
Telting-Diaz, M.; Bakker, E. Anal. Chem., 2001, 73, 5582-5589.

76 Quantification of the Concentration of Ionic Impurities in Polymeric Sensing Membranes with the Segmented Sandwich Technique
Qin, Y.; Bakker, E. Anal. Chem., 2001, 73, 5582-5589.

75 Monodisperse Plasticized Poly(Vinyl Chloride) Fluorescent Microspheres for Ionophore-Based Sensing and Extraction
Tsagkatakis, I.; Peper, S.; Retter, R.; Bell, M.; Bakker, E. Anal. Chem., 2001, 73, 6083-6087.

74 Phosphate Binding Characteristics and Selectivity Studies of Bifunctional Organotin Carriers
Tsagkatakis, I.; Chaniotakis, N.; Jurkschat, K.; Willem, R.; Qin, Y.; Bakker, E. Helv. Chim. Acta, 2001, 84, 1952-1961.

73 Direct potentiometry in the micromole and picomole concentration ranges
Bakker, E.; Pretsch, E.; Lindner, E. Mayar Kémiai Folyoirat, 2001, 107, 71-79.

72 Potentiometry at Trace Levels
Bakker, E.; Pretsch, E.; Qin, W. Huaxue Chuanganqi (Chemical Sensors), 2001, 21, 2-13.

71 Improved Detection Limits and Sensitivities of Potentiometric Titrations
Peper, S.; Ceresa, A.; Bakker, E.; Pretsch, E. Anal. Chem., 2001, 73, 3768-3775.

70 A Potentiometric Cd2+-Selective Electrode with a Detection Limit in the Low ppt Range
Ion, A.C.; Bakker, E.; Pretsch, E. Anal. Chim. Acta, 2001, 440, 71-79.

69 Potentiometric Polymer Membrane Electrodes for Lead Measurement of Environmental Samples at Trace Levels: New Requirements for Selectivities and Measuring Protocols, and Comparison with ICP-MS
Ceresa, A.; Bakker, E.; Hattendorf, B.; Günther, D.; Pretsch, E. Anal. Chem., 2001, 73, 343-351.

68 Spatial and Spectral Imaging of Single Micron-Sized Solvent Cast Fluorescent Plasticized Poly(vinyl chloride) Optode Particles
Tsagkatakis, I.; Peper, S.; Bakker, E. Anal. Chem., 2001, 73, 315-320.

67 Cross-Linked Plasticizer-Free Optochemical Microsensors Based on Alkyl Acrylate Polymers
Peper, S.; Tsagkatakis, I.; Bakker, E. Anal. Chim. Acta, 2001, 442, 25-33.

66 Selectivity Behavior and Multianalyte Detection Capability of Voltammetric Ionophore-Based Polymeric Membrane Sensors
Jadhav, S.; Bakker, E. Anal. Chem., 2001, 73, 80-90.

65 Determination of Complex Formation Constants of 18 Neutral Alkali and Alkaline Earth Metal Ionophores in Poly(Vinyl Chloride) Sensing Membranes Plasticized with Bis(2-ethylhexyl)sebacate and o-Nitrophenyloctylether
Qin, Y.; Mi, Y.; Bakker, E. Anal. Chim. Acta, 2000, 421, 207-220.

64 Ion Binding Properties of the H+-Chromoionophore ETH 5294 in Solvent Polymeric Membranes as Determined with Segmented Sandwich Membranes
Mi, Y.; Bakker, E. Electrochem. Solid-State Lett., 2000, 3, 159-161.

63 Ionophore-Based Membrane Electrodes: New Analytical Concepts and Nonclassical Response Mechanisms
Bakker, E.; Meyerhoff, M.E. Anal. Chim. Acta, 2000, 416, 121-137.

62 Direct Potentiometric Determination of Total Concentrations
Ceresa, A.; Pretsch, E.; Bakker, E. Anal. Chem., 2000, 72, 2050-2054.

61 Selectivity of Potentiometric Ion Sensors
Bakker, E.; Pretsch, E.; Bühlmann, P. Anal. Chem., 2000, 72, 1127-1133.

60 Normal Pulse Voltammetry as Improved Quantitative Detection Mode for Amperometric Solvent Polymeric Ion Sensors
Jadhav, S.; Meir, A.J.; Bakker, E. Electroanalysis, 2000, 12, 1251-1257.

59 Determination of Effective Complex Formation Constants of Lipophilic Neutral Ionophores in Solvent Polymeric Membranes with Two-Layer Sandwich Membranes
Mi, Y.; Bakker, E. Anal. Chem., 1999, 71, 5279-5287.

58 Revealing Binding Characteristics in Ion-Sensing Polymeric Membrane by Studying Equilibrium and Transient Potential Responses
Bakker, E.; Mi, Y. Electrochem Soc. Proc., 1999, 99-23, 69-78.

57 Basic Response Principles of Voltammetric Ion-Selective Solvent Polymeric Membrane Sensors
Bakker, E.; Jadhav, S. Electrochem Soc. Proc., 1999, 99-13, 390-397.

56 Renewable pH Cross-Sensitive Heparin Sensors with Incorporated Electrically Charged H+-selective Ionophores
Mathison, S.; Bakker, E. Anal. Chem., 1999, 71, 4614-4621.

55 Voltammetric and Amperometric Transduction for Solvent Polymeric Membrane Ion Sensors
Jadhav, S.; Bakker, E. Anal. Chem., 1999, 71, 3657-3664.

54 Polymer Membrane Ion-Selective Electrodes—What are the Limits?
Bakker, E.; Bühlmann, P.; Pretsch, E. Electroanalysis, 1999, 11, 915-933.

53 Chemical Ion Sensors–Current Limits and New Trends
Bakker, E.; Diamond, D.; Lewenstam, A.; Pretsch, E. Anal. Chim. Acta, 1999, 393, 11-18.

52 Hydrophobic Membranes as Liquid-Junction Free Reference Electrodes
Bakker, E. Electroanalysis, 1999, 11, 788-792.

51 General Description of the Simultaneous Response of Potentiometric Ionophore-Based Sensors to Ions of Different Charge
Nägele, M.; Bakker, E.; Pretsch, E. Anal. Chem., 1999, 71, 1041-1048.

50 Lowering the Detection Limit of Solvent Polymeric Ion-Selective Electrodes. 2. Influence of Composition of Sample and Inner Reference Electrolyte
Sokalski, T.; Ceresa, A.; Fibbioli, M.; Zwickl, T.; Bakker, E.; Pretsch, E. Anal. Chem., 1999, 71, 1210-1214.

49 Lowering the Detection Limit of Solvent Polymeric Ion-Selective Electrodes. 1. Modeling the Influence of Steady-State Ion Fluxes
Sokalski, T.; Zwickl, T.; Bakker, E.; Pretsch, E. Anal. Chem., 1999, 71, 1204-1209.

48 Detection Limit of Polymeric Membrane Potentiometric Ion Sensors: How Can We Go Down to Trace Levels?

Mi, Y.; Mathison, S.; Goines, R.; Logue, A.; Bakker, E. Anal. Chim. Acta, 1999, 397, 103-111.

47 Polyion Sensors as Liquid Junction-Free Reference Electrodes
Mi, Y.; Mathison, S.; Bakker, E. Electrochem. Solid-State Lett., 1999, 2, 198-200.

46 Improving Measurement Stability and Reproducibility of Potentiometric Sensors for Polyions such as Heparin
Mathison, S.; Bakker, E. J. Pharm. Biom. Anal., 1999, 19, 163-173.

45 Acetic Acid Release From Polymeric Membrane pH Electrodes for Generating Local pH Gradients at Ion-Selective Membranes
Jadhav, S.; Bakker, E. Electrochem. Solid-State Lett., 1998, 1, 194-196.

44 Polymeric Membrane pH Electrodes Based on Electrically Charged Ionophores
Mi, Y.; Green, C.; Bakker, E. Anal. Chem., 1998, 70, 5252-5258.

43 Selectivity of Liquid Membrane Cadmium Microelectrodes Based on the Ionophore N,N,N',N'-Tetrabutyl-3,6-dioxaoctanedithioamide
Pineros, M.A.; Shaff, J.E.; Kochian, L.V.; Bakker, E. Electroanalysis, 1998, 10, 937-941.

42 Carrier-Based Ion-Selective Electrodes and Bulk Optodes. 2. Ionophores Applied in Potentiometric and Optical Sensors
Bühlmann, P.; Pretsch, E.; Bakker, E. Chem. Rev., 1998, 98, 1593-1687.

41 Spectroscopic in-situ Imaging of Acid Coextraction Processes in Solvent Polymeric Ion-Selective Electrode and Optode Membranes
Lindner, E.; Zwickl, T.; Bakker, E.; Lan, B.T.T.; Toth, K.; Pretsch, E. Anal. Chem., 1998, 70, 1176-1181.

40 Influence of Inert Lipophilic Salts on the Selectivity of Polymer Membrane Electrodes
Nägele, M.; Mi, Y.; Bakker, E.; Pretsch, E. Anal. Chem., 1998, 70, 1686-1691.

39 Ion-Selective Electrodes Based on Two Competitive Ionophores for Determining Stability Constants of Ion–Carrier Complexes in Solvent Polymeric Membranes
Bakker, E.; Pretsch, E. Anal. Chem., 1998, 70, 295-302.

38 Effect of Transmembrane Electrolyte Diffusion on the Detection Limit of Carrier-Based Potentiometric Ion Sensors
Mathison, S.; Bakker, E. Anal. Chem., 1998, 70, 303-309.

37 Detection Limit of Polymer Membrane Ion-Selective Electrodes: Possible Chemical Origins and Prospects for Improvement
Mathison, S.; Goines, R.; Bakker, E. Electrochem Soc. Proc., 1997, 97-19, 646-654.

36 Carrier-Based Ion-Selective Electrodes and Bulk Optodes. 1. General Characteristics
Bakker, E.; Bühlmann, P.; Pretsch, E. Chem. Rev., 1997, 97, 3083-3132.

35 Selectivity of Carrier-Based Ion-Selective Electrodes: Is the Problem Solved?
Bakker, E. Trends Anal. Chem., 1997, 16, 252-260.

34 Potentiometric Determination of Effective Complex Formation Constants of Lipophilic Ion Carriers within Ion-Selective Electrode Membranes
Bakker, E.; Pretsch, E. J. Electrochem. Soc., 1997, 144, L125-L127.

33 Lipophilic Ionic Sites for Solvent Polymeric Membrane pH Electrodes Based on 4', 5'-Dibromofluorescein Octadecylester as Electrically Charged Carrier
Mi, Y.; Bakker, E. J. Electrochem. Soc., 1997, 144, L27-L28.

32 Selectivity Comparison of Neutral Carrier-Based Ion-Selective Optical and Potentiometric Sensing Schemes
Bakker, E. Anal. Chim. Acta, 1997, 350, 329-340.

31 Determination of Unbiased Selectivity Coefficients of Neutral Carrier-Based Cation-Selective Electrodes
Bakker, E. Anal. Chem., 1997, 69, 1061-1069.

30 Selectivity of Liquid Membrane Ion-Selective Electrodes
Bakker, E. Electroanalysis, 1997, 9, 7-12.

29 Origin of Anion Response of Solvent Polymeric Membrane Based Silver Ion-Selective Electrodes
Bakker, E. Sens. Actuators, B, 1996, 35, 20-25.

28 Determination of Improved Selectivity Coefficients of Polymer Membrane Ion-Selective Electrodes by Conditioning with a Discriminated Ion
Bakker, E. J. Electrochem. Soc., 1996, 143, L83-L85.

27 Miniature Sodium-Selective Optode with Fluorescent pH Chromoionophores and Tunable Dynamic Range
Shortreed, M.R.; Bakker, E.; Kopelman, R. Anal. Chem., 1996, 68, 2656-2662.

26 Influence of Nonionic Surfactants on the Potentiometric Response of Hydrogen Ion-Selective Polymeric Membrane Electrodes
Espadas-Torre, C.; Bakker, E.; Barker, S.; Meyerhoff, M.E. Anal. Chem., 1996, 68, 1623-1631.

25 Polyion-sensitive membrane electrodes for biomedical analysis
Meyerhoff, M.E.; Fu, B.; Bakker, E.; Yun, J.H.; Yang, V.C. Anal. Chem., 1996, 68, 168A-175A.

24 Potentiometric Polyion Sensors: A New Measurement Technology for Monitoring Blood Heparin Levels During Open Heart Surgery

Meyerhoff, M.E.; Yang, V.C.; Wahr, J.A.; Lee, L.; Yung, J.H.; Fu, B.; Bakker, E. Clin. Chem., 1995, 41, 1355-1355.

23 Polyion Sensitive Membrane Electrodes: Improbable Devices Capable of Monitoring Heparin Levels in Whole Blood
Meyerhoff, M.E.; Fu, B.; Ma, S.C.; Bakker, E.; Yung, J.H.; Yang, V.C. Blood Gas Electrolyte Newsletter, 1995, 10, 4-8.

22 Extraction Thermodynamics of Polyanions into Plasticized Polymer Membranes Doped with Lipophilic Ion-Exchangers: A Potentiometric Study
Fu, B.; Bakker, E.; Yang, V.C. Macromolecules, 1995, 28, 5834-5840.

21 Lipophilicity of Tetraphenylborate Derivatives as Anionic Sites in Neutral Carrier-Based Solvent Polymeric Membranes and Lifetime of Corresponding Ion-Selective Electrochemical and Optical Sensors
Bakker, E.; Pretsch, E. Anal. Chim. Acta, 1995, 309, 7-17.

20 Polymer Membrane-Based Polyion Sensors: Development, Response Mechanism, and Bioanalytical Applications
Fu, B.; Bakker, E.; Wang, E.; Yun, J.H.; Yang, V.C.; Meyerhoff, M.E. Electroanalysis, 1995, 7, 823-829.

19 Applicability of the Phase Boundary Potential Model to the Mechanistic Understanding of Solvent Polymeric Membrane-Based Ion-Selective Electrodes
Bakker, E.; Nägele, M.; Schaller, U.; Pretsch, E. Electroanalysis, 1995, 7, 817-822.

18 Carrier Mechanism of Acidic Ionophores in Solvent Polymeric Membrane Ion-Selective Electrodes
Schaller, U.; Bakker, E.; Pretsch, E. Anal. Chem., 1995, 67, 3123-3132.

17 Selectivity of Polymer-Membrane Based Ion-Selective Electrodes: Self-Consistent Model Describing the Potentiometric Response in Mixed Ion Solutions of Different Charge
Bakker, E.; Meruva, R.K.; Pretsch, E.; Meyerhoff, M.E. Anal. Chem., 1994, 66, 3021-3030.

16 Optimum Composition of Neutral Carrier Based pH Electrodes
Bakker, E.; Xu, A.; Pretsch, E. Anal. Chim. Acta, 1994, 295, 253-262.

15 Response Mechanism of Polymer Membrane-Based Potentiometric Polyion Sensors
Fu, B.; Bakker, E.; Meyerhoff, M.E.; Yun, J.H.; Yang, V.C. Anal. Chem., 1994, 66, 2250-2259.

14 Nitrite-Selective Microelectrodes
Schaller, U.; Bakker, E.; Spichiger, U.E.; Pretsch, E. Talanta, 1994, 41, 1001-1005.

13 Anion-Selective Membrane Electrodes Based on Metalloporphyrins: The Influence of Anionic and Cationic Sites on Potentiometric Selectivity

Bakker, E.; Malinowska, E.; Schiller, R.D.; Meyerhoff, M.E. Talanta, 1994, 41, 881-890.

12 Ionic Sites for Charged Carrier-Based Ion-Selective Electrodes
Schaller, U.; Bakker, E.; Pretsch, E. ACH-Models in Chemistry, 1994, 131, 739-759.

11 Determination of Complex Stability Constants of Cation-Selective Ionophores in Solvent Polymeric Membranes
Bakker, E.; Willer, M.; Lerchi, M.; Seiler, K.; Pretsch, E. Anal. Chem., 1994, 66, 516-521.

10 Ionic Additives for Ion-Selective Electrodes Based on Electrically Charged Carriers
Schaller, U.; Bakker, E.; Spichiger, U.E.; Pretsch, E. Anal. Chem., 1994, 66, 391-398.

9 Detection Limit of Ion-Selective Bulk Optodes and Corresponding Electrodes
Bakker, E.; Willer, M.; Pretsch, E. Anal. Chim. Acta, 1993, 282, 265-271.

8 Lipophilic and Immobilized Anionic Additives in Solvent Polymeric Membranes of Cation-Selective Chemical Sensors
Rosatzin, T.; Bakker, E.; Suzuki, K.; Simon, W. Anal. Chim. Acta, 1993, 280, 197-208.

7 Synthesis and Characterization of Neutral Hydrogen Ion-Selective Chromoionophores for Use in Bulk Optodes
Bakker, E.; Lerchi, M.; Rosatzin, T.; Rusterholz, B.; Simon, W. Anal. Chim. Acta, 1993, 278, 211-225.

6 Optodes in Clinical Chemistry: Potential and Limitations
Spichiger, U.E.; Freiner, D.; Bakker, E.; Rosatzin, T.; Simon, W. Sens. Actuators, B, 1993, 11, 263-271.

5 Optical Sensors Based on Neutral Carriers
Spichiger, U.E.; Simon, W.; Bakker, E.; Lerchi, M.; Bühlmann, P.; Haug, J.-P.; Kuratli, M.; Osawa, S.; West, S. Sens. Actuators, B, 1993, 11, 1-8.

4 Chemically Selective Optode Membranes and Optical Detection Modes
Spichiger, U.E.; Freiner, D.; Lerchi, M.; Bakker, E.; Dohner, R.; Simon, W. SPIE, 1992, 1796, 371-382.

3 Selectivity of Ion-Sensitive Bulk Optodes
Bakker, E.; Simon, W. Anal. Chem., 1992, 64, 1805-1812.

2 Lead-Selective Bulk Optodes Based on Neutral Ionophores with Subnanomolar Detection Limits
Lerchi, M.; Bakker, E.; Rusterholz, R.; Simon, W. Anal. Chem., 1992, 64, 1534-1540.

1 Characterization of Sodium-Selective Optode Membranes Based on Neutral Ionophores and Assay of Sodium in Plasma
Seiler, K.; Wang, K.; Bakker, E.; Morf, W.E.; Rusterholz, B.; Spichiger, U.E.; Simon, W. Clin. Chem., 1991, 37, 1350-1355.