CV of Prof. Dr. Eric Bakker

https://www.ericbakker.ch

Personal Information

Born in Boudevilliers NE, Switzerland, on 11/11/1965.

Languages: German, English, French, Dutch.

Nationalities: Switzerland and The Netherlands.

Present Position at the University of Geneva

Full Professor, Director of Department and Vice President of School

Faculty of Science, University of Geneva, 1211 Geneva 4

Academic Degrees and Schooling

1993 Ph.D. natural sciences, ETH Zurich.

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, 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), Mettler-Toledo, 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, ETH 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

2011-17 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

2020-22 Director, Department of Inorganic and Analytical Chemistry, University of Geneva

2022– Vice President, School of Chemistry and Biochemistry, University of Geneva

2023– Director, Department of Inorganic and Analytical Chemistry, University of Geneva

Society Memberships

American Chemical Society (Executive Editor, ACS Sensors)

Royal Society of Chemistry (Fellow FRSC)

Swiss Chemical Society (President of DAS-SCG until 2023)

International Society of Electrochemistry (Formerly Regional Representative)

Geneva Society for Physical and Analytical Science (President)

Matrafüred Society for Electrochemical Sensors (President)

Geneva Chemical Society

Current Group Members

Yupu Zhang, Ayian Speck, Andrea Nonis*,* Robin Nussbaum, Yaotian Wu, Gabriel Mattos, Nikolai Tiuftiakov, Polyxeni Damala (*Doctoral Students),* Elena Zdrachek, Tara Forrest (*Postdocs),* Justine Rothen *(Masters Student),* Marylou Tercier-Waeber (*Senior Scientist), Thomas Cherubini, Laura Maloriol (Lab Technicians), Magali Cissokho (Secretary).*

Past Doctoral 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.
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

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.
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.
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

2022 Pitchnaree Kraikaew, Ph.D.
Ultrasensitive Capacitive Readout for Ion-Selective Electrodes

2022 Canwei Mao, Ph.D.
Solid Contact Thin-Film Ion-Selective Membranes for Ion Transfer Voltammetry: Fundamental Studies and Applications

2022 Yoshiki Soda, Ph.D.
Novel Materials and Analytical Methods for Optical Sensing of Ionic Species

2023 Anika Hoffmann, Ph.D.
Development and applications of a novel chemical assay for the quantification of bacterial endotoxins

2023 Tara Forrest, Ph.D.
Development and Optimisation of Integrated Electrochemical Sensors for Aquatic Analysis

Key Research Grants

2023-25 Innovative Sensing Principles at Selective Interfaces
Swiss National Science Foundation Project, PI E. Bakker, CHF 634'000

2022-26 Advanced in situ sensing systems for high-resolution speciation in aquatic ecosystems
Swiss National Science Foundation Project, PI E. Bakker, CHF 850'667

2019-21 Eurostars Grant: Aqua Quality Ion Selective Electrode microsensor bundle for effective Nitrate Directive compliance (AQISE)
Work Package Leader E. Bakker, Euro 350'000 to EB

2018-23 Swiss National Science Foundation Project Grant
PI E. Bakker (100%), CHF 780,000

2015-18 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

2014-18 FP7 Project Grant (European Union)
Coordinator ML Tercier (Bakker's senior scientist, 25%), Euro 5,600,000

2014-17 Swiss National Science Foundation Sinergia Interdisciplinary Grant (with EAWAG)
PI E. Bakker (40%), CHF 1,020,000

2011-14 Swiss National Science Foundation Project Grant
PI E. Bakker (100%), CHF 600,000

2012-13 Austrian Science Fund (fellowship to G. Mistlberger, postdoc), Euro 41,000

2012-13 Innogap Technology Transfer Grant, PI E. Bakker (100%), CHF 29,575

2012 Industrial Equipment Gift, Metrohm, ca. CHF 70,000

2010-11 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

2009-12 CSIRO Flagship Cluster Grant in Environmental Sensing (CI E. Bakker,12.5%), AUD 3,000,000

2009-10 ARC Discovery grant PI E. Bakker (70%), AUD 800,000

2006-10 NIH R01, PI E. Bakker (30%), USD 1,250,000

2003-07 NIH R01 PI E. Bakker (100%), USD 620,000

2000-05 NIH R01 PI E. Bakker (50%), USD 670,000

1998-01 NIH R01 PI E. Bakker (100%), USD 294,000

1998-07 Industrial research grant, Beckman Coulter
PI E. Bakker (100%), USD 670,000

Honours, Awards, Editorial Roles

2024 Charles N. Reilley Award, Society for Electroanalytical Chemistry

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

Incubator and Business Activities

2023– Scientific advisor, Eaglenos Nanjing Co.

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

2022 Co-organizer, Matrafured Meeting on Electrochemical Sensors, Hungary

2023 Co-Chair, Euroanalysis 2023 Conference, Geneva, Switzerland

Service and Outreach (from 2010)

2023 Co-Chair 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):	82
Total Citations	>30’400

Full List of Scientific Publications

(420) Conference Report: Euroanalysis 2023 in Geneva, Bakker, E.; Hattendorf, B.; Kalman, F.; Suter, M. Chimia, in press.

(417) Remembering Otto Wolfbeis (1947–2023), Bakker, E. ACS Sensors, 2023, 8, 3605. DOI: 10.1021/acssensors.3c02085 (open access)

(416) Avoiding Potential Pitfalls in Designing Wired Glucose Biosensors, Damala, P.; Tiuftiakov, N. Y.; Bakker, E. ACS Sensors, in press.

(415) In situ Derivatization of Solid Contact 3,4-Ethylenedioxythiophene Transducers for Ion-Selective Electrodes through “Click” Chemistry Forrest, T.; Bakker, E. Sens. Actuators, B, in revision.

(414) Self-powered Potentiometric Sensor with Electronic Paper Display Based on Passive Amplification by Serial Capacitors Qileng, A.; Wu, Y.; Liu, Y.; Bakker, E. Anal. Chem., 2023, , ASAP. DOI: 10.1021/acs.analchem.3c04323

(413) Lipophilic tetramethylpiperidine N-oxyl (TEMPO) as a redox probe in thin films for anion and cation sensing by ion transfer voltammetry Mattos, G. J.; Tiuftiakov, N. Y.; Bakker, E. Electrochem. Commun., 2023, 157, 107603. DOI: 10.1016/j.elecom.2023.107603 (open access)

(412) Distance-Based Self-Powered Signal Transduction of Ion-Selective Electrodes to an Electronic Paper Display Array Riqileng, A.; Wu, Y.; Liu, Y.; Bakker, E. Anal. Chem., 2023, ASAP. DOI: 10.1021/acs.analchem.3c03994

(410) Correction: A submersible probe with in-line calibration and a symmetrical reference element for continuous direct nitrate concentration measurements, Forrest, T.; Cherubini, T.; Jeanneret, S.; Zdrachek, E.; Damala, P.; Bakker, E. Environ. Sci.: Processes Impacts, 2023, 25, 1131 - 1132. DOI: 10.1039/d3em90017g (open access)

(409) CHanalysis 2023 – Artificial Intelligence meets Analytical Excellence, Bleiner, D.; Bakker, E. Chimia, in press (open access).

(408) Self-powered optical ion sensor array based on potentiometric probes coupled to electronic paper, Wu, Y.; Qileng, A.; Bakker, E. Sens. Actuators, B, in revision.

(407) Ultrasensitive Sensing of pH and Fluoride with Enhanced Constant Potential Coulometry at Membrane Electrodes, Nussbaum, R.; Nonis, A.; Jeanneret, S.; Cherubini, T.; Bakker, E. Sens. Actuators, B, 2023, 392, 134101. DOI: 10.1016/j.snb.2023.134101 (open access).

(406) Integrated Enzyme-Linked Immunosensor with Biofunctionalized Ion-Selective Membranes by Pulstrode Delivery of Substrate, Mattos, G. J.; Bakker, E. Biosens. Bioelectron. X, 2023, 14, 100351. DOI: 10.1016/j.biosx.2023.100351 (open access).

(405) Mátrafüred 2022 International Conference on Chemical Sensors, Bakker, E.; Buhlmann, P.; Gooding, J. J.; Gyurcsanyi, R. E.; Pretsch, E. Electroanalysis, in press.

(404) Wearable Sensors, deMello, A.; Bakker, E. ACS Sensors, 2023, 8, 1368–1370. DOI: 10.1021/acssensors.3c00437

(403) On-chip antifouling hydrogel membrane-integrated microelectrode arrays for in situ high resolution quantification of Nickel fraction available for bio-uptake in natural waters, Creffield, S.; Tercier-Waeber, M.-L.; Bakker, E.; Layglon, N. Molecules, 2023, 28, 1346. DOI: 10.3390/molecules28031346 (open access).

(402) On-field high-resolution quantification of the cobalt fraction available for bio-uptake in natural waters using antifouling gel-integrated microelectrode arrays, Layglon, N.; Creffield, S.; Bakker, E.; Tercier-Waeber, M.-L. Marine Pollution Bulletin, 2023, 189, 114807. DOI: 10.1016/j.marpolbul.2023.114807 (open access).

(401) Solvatochromic Coextraction-based Optical Carbonate Nanosensors, Tiuftiakov, N.; Robinson, K. J.; Bakker, E. Electroanalysis, in press. DOI: 10.1002/elan.202200507

(400) Submersible Probe with In-line Calibration and Symmetrical Reference Element for Continuous Direct Nitrate Measurements, Forrest, T.; Cherubini, T.; Jeanneret, S.; Zdrachek, E.; Damala, P.; Bakker, E. Environ. Sci.: Processes Impacts, 2023, 25, 519 - 530. DOI: 10.1039/D2EM00341D (open access).

(399) Portable Instrument and Current Polarization Limitations of High Sensitivity Constant-Potential Capacitive Readout with Polymeric Ion-Selective Membranes, Kraikaew, P.; Soda, Y.; Nussbaum, R.; Jeanneret, S.; Bakker, E. Sens. Actuators, B, 2023, 379, 133220. DOI: 10.1016/j.snb.2022.133220 (open access).

(398) Aerosol-into-liquid capturing and detecting ultratrace atmospheric metals across gas/liquid interface separated by a Janus membrane electrode, Zhao, Y.; Cen, T.; Jiang, F.; He, W.; Zhang, X.; Feng, X.; Gao, M.; Ludwig, C.; Bakker, E.; Wang, J. PNAS, 2023, 120, e2219388120. DOI: 10.1073/pnas.2219388120.

(397) Symmetric Cell for Improving Solid Contact pH Electrodes, Zdrachek, E.; Forrest, T.; Bakker, E. Anal. Chim. Acta, 2023, 1239, 340652. DOI: 10.1016/j.aca.2022.340652 (open access).

(396) Commercially available nitrate ionophores in potentiometric sensors are not superior to common ion-exchangers, Damala, P.; Zdrachek, E.; Bakker, E. Electroanalysis, 2023, 35, 2200247. DOI: 10.1002/elan.202200247 (open access).

(395) Mass Transfer from Ion Sensing Component-Loaded Nanoemulsions into Ion-Selective Membranes: An Electrochemical Quartz Crystal Microbalance and Thin Film Coulometry Study, Mao, C.; Soda, Y.; Robinson, K. J.; Forrest, T.; Bakker, E. ACS

Measurement Science Au, 2023, 3, 45–52. DOI: 10.1021/acsmeasuresciau.2c00053 (open access).

(394) Optical Detection of Heparin in Whole Blood Samples using Nanosensors Embedded in an Agarose Hydrogel, Nussbaum, R.; Robinson, K. J.; Soda, Y.; Bakker, E. ACS Sensors, 2022, 7, 3956–3962. DOI: 10.1021/acssensors.2c02154.

(393) Self-Powered Signal Transduction of Ion-Selective Electrodes to an Electronic Paper Display, Wu, Y.; Bakker, E. ACS Sensors, 2022, 7, 3201–3207. DOI: 0.1021/acssensors.2c01826.

(392) CHanalysis 2022 – Back to the Future of Analytical Excellence, Bleiner, D.; Suter, M.; Bakker, E. Chimia, 2022, 76, 720-721. DOI: 10.2533/chimia.2022.720 (open access).

(391) Do Reversible Sensors Require Reversible Interactions?, Bakker, E. ACS Sensors, 2022, 8, 2102–2103. DOI: 10.1021/acssensors.2c01676 (open access).

(390) Response Mechanism of Hyperpolarization-based Polyion Nanosensors, Soda, Y.; Robinson, K. J.; Bakker, E. ACS Sensors, 2022, 7, 3108–3115. DOI: 10.1021/acssensors.2c01599.

(389) Unconditioned Symmetric Solid-Contact Electrodes for Potentiometric Sensing, Damala, P.; Zdrachek, E.; Forrest, T.; Bakker, E. Anal. Chem., 2022, 94, 11549–11556. DOI: 10.1021/acs.analchem.2c01728.

(388) Direct Energy Transfer from a pH Glass Electrode to a Liquid Crystal Display, Wu, Y.; Bakker, E. Anal. Chem., 2022, 93, 10408-10414. DOI: 10.1021/acs.analchem.2c01557.

(387) Chemo and Regioselective Multiple C(sp2)−H Insertions of Malonate Metal Carbenes for Late-Stage Functionalizations of Azahelicenes, Nikolova, Y.; Fabri, B; Lorente, P. M. ; Guarnieri-Ibáñez, A.; de Aguirre, A.; Soda, Y.; Zinna, F.; Besnard, C.; Guénée, L.; di Bari, L.; Bakker, E.; Poblador-Bahamonde, A. I.; Lacour, J. Angew. Chem. Int. Ed., 2022, 61, e202210798. DOI: 10.1002/anie.202210798 (open access).

(386) Hyperpolarized Solvatochromic Nanosensors towards Heparin Sensing in Blood, Nussbaum, R.; Robinson, K. J.; Soda, Y.; Bakker, E. Chimia, 2022, 76, 284-287. DOI: 10.2533/chimia.2022.284 (open access).

(385) Recent improvements to the selectivity of extraction-based optical ion sensors , Robinson, K. J.; Soda, Y.; Bakker, E. Chem. Commun., 2022, 58, 4279-4287. DOI: 10.1039/d1cc06636f (open access).

(384) Ion–Ionophore Interactions in Polymeric Membranes Studied by Thin Layer Voltammetry, Mao, C.; Robinson, K. J.; Yuan, D.; Bakker, E. Sens. Actuators, B, 2022, 358, 131428. DOI: 10.1016/j.snb.2022.131428 (open access).

(383) Solid-Contact Potentiometric Cell with Symmetry, Zdrachek, E.; Forrest, T.; Bakker, E. Anal. Chem., 2022, 94, 612-617. DOI: 10.1021/acs.analchem.1c04722.

(382) Speciation of Cu, Cd, Pb and Zn in a contaminated harbor and comparison to Environmental Quality Standards, Layglon, N.; Abdou, M.; Massa, F.; Castellano, M.; Bakker,

E.; Povero, P.; Tercier-Waeber, M.-L. J. Environ. Manage., 2022, 317, 115375. DOI: 10.1016/j.jenvman.2022.115375 (open access).

(381) Estuarine dissolved speciation and partitioning of trace metals: a novel approach to study biogeochemical processes, Abdou, M.; Tercier-Waeber, M. L.; Dutruch, L.; Bossy, C.; Pougnet, F.; Coynel, A.; Bakker, E.; Blanc, G.; Schäfer, J. Environmental Research, 2022, 208, 112596. DOI: 10.1016/j.envres.2021.112596.

(380) Dialysis Membranes as Liquid Junction Materials: New Simplified Calculation Model based on the Phase Boundary Potential, Forrest, T.; Höfler, L.; Bakker, E. J. Electroanal. Chem., 2022, 904, 115886. DOI: 10.1016/j.jelechem.2021.115886 (open access).

(379) Taking Earth's Pulse with Low-Cost Sensors, Bakker, E.; Ward, C. P.; Tarpeh, W.; Wang, Z. ACS Sensors, 2022, 7, 1613. DOI: 10.1021/acssensors.2c01015 (open access).

(378) Surfactants for Optode Emulsion Stabilization Without Sacrificing Selectivity or Binding Constants, Robinson, K. J.; Mao, C.; Bakker, E. Anal. Chem., 2021, 93, 15941–15948. DOI: 10.1021/acs.analchem.1c03232.

(377) Protamine/Heparin Optical Nanosensor based on Solvatochromism, Soda, Y.; Robinson, K.; Nussbaum, R.; Bakker, E. Chem. Sci, 2021, 12, 15596-15602. DOI: 10.1039/D1SC04930E (open access).

(376) Self-Powered Potentiometric Sensor with Memory, Sailapu, S. K.; Sabaté, N.; Bakker, E. ACS Sensors, 2021, 6, 3650–3656. DOI: 10.1021/acssensors.1c01273 (open access).

(375) 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. DOI: 10.1016/j.snb.2021.130282 (open access).

(374) 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. DOI: 10.1016/j.snb.2021.130527 (open access).

(373) 2021: A Year Starting Full of Hope, Gooding, J. J.; Camasso, N.; Bakker, E.; Kelley, S.; Sailor, M.; Merkx, M.; Mao, L.; Clark, H.; Maboudian, R.; Masson, J.-F. ACS Sensors, 2021, 6, 1-2. DOI: 10.1021/acssensors.0c02726 (open access).

(372) 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. DOI: 10.2533/chimia.2021.455 (open access).

(371) Ion-to-electron capacitance of single-walled carbon nanotube layers before and after ion-selective membrane deposition, Zdrachek, E.; Bakker, E. Microchim. Acta, 2021, 188, 149. DOI: 10.1007/s00604-021-04805-1 (open access).

(370) Potentiometric Sensing, Zdrachek, E.; Bakker, E. Anal. Chem., 2021, 93, 72-102. DOI: 10.1021/acs.analchem.0c04249 (open access).

(369) Unbiased selectivity coefficients of potentiometric sensors using thin membrane layers, Zdrachek, E.; Bakker, E. Electroanalysis, 2021, 33, 1225-1232. DOI: 10.1002/elan.202060605.

(368) Advanced multichannel submersible probe for autonomous high-resolution in situ monitoring of the cycling of the potentially bioavailable fraction of a range of trace metals, Tercier-Waeber, M. L.; Confalonieri, F.; Abdou, M.; Dutruch, L.; Bossy, C.; Fighera, M.; Bakker, E.; Graziottin, F.; van der Wal, P.; Schaefer, J. Chemosphere, 2021, 282, 131014. DOI: 10.1016/j.chemosphere.2021.131014 (open access).

(367) Colorimetric ratiometry with ion optodes for spatially resolved concentration analysis, Soda, Y.; Bakker, E. Anal. Chim. Acta, 2021, 1154, 338225. DOI: 10.1016/j.aca.2021.338225 (open access).

(366) Self-Powered Electrochromic Readout of Potentiometric pH Electrodes, Jansod, S.; Bakker, E. Anal. Chem., 2021, 93, 4263-4269. DOI: 10.1021/acs.analchem.0c05117 (open access).

(365) 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. DOI: 10.1016/j.jelechem.2020.114800 (open access).

(364) 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. DOI: 10.1016/j.snb.2020.128996 (open access).

(363) 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, 6, 925-937. DOI: 10.1021/acssensors.0c02111.

(362) Let's Aim to Develop Sensors, not Electroanalytical Techniques: The Direct Detection of Dissolved Inorganic Carbon, Bakker, E. ACS Sensors, 2021, 6, 2785-2786. DOI: 10.1021/acssensors.1c01660 (open access).

(361) Triumph and Misery of Measurement Science, Bakker, E. ACS Sensors, 2020, 5, 2264-2265. DOI: 10.1021/acssensors.0c01542 (open access).

(360) Ultra-Sensitive Measurement of Ocean pH, Kraikaew, P.; Bakker, E. Chimia, 2020, 74, 1021. DOI: 10.2533/chimia.2020.1021 (open access).

(359) 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. DOI: 10.1021/acs.analchem.0c03254 (open access).

(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. DOI: 10.1021/acs.analchem.0c02920 (open access).

(357) Self-Powered Potentiometric Sensor Transduction to a Capacitive Electronic Component for Later Readout, Sailapu, S. K.; Kraikaew, P.; Sabaté, N.; Bakker, E. ACS Sensors, 2020, 5, 2909–2914. DOI: 10.1021/acssensors.0c01284 (open access).

(356) A Scientific Journey with Ionophore-Based Sensors, Bakker, E. Chimia, 2020, 7/8, 569-576. DOI: 10.2533/chimia.2020.569 (open access).

(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. DOI: 10.1021/acssensors.0c00875 (open access).

(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. DOI: 10.1021/acssensors.0c00660 (open access).

(353) Mátrafüred 2019 International Conference of Electrochemical Sensors, Bakker, E.; Buhlmann, P.; Gyurcsanyi, R.E.; Pretsch, E.; Wang, J. Electroanalysis, 2020, 32, 667-668. DOI: 10.1002/elan.202080331 (open access).

(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 . DOI: 10.1039/D0LC00028K (open access).

(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. DOI: 10.1021/acssensors.0c00023 (open access).

(350) Direct Potentiometric Sensing of Anion Concentration (Not Activity), Gao, W.; Xie, X.; Bakker, E. ACS Sensors, 2020, 5, 313-318. DOI: 10.1021/acssensors.9b02523 (open access).

(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. DOI: 10.1021/acs.analchem.0c01421 (open access).

(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.; Schäfer, J. Marine Chemistry, 2020, 223, 103804. DOI: 10.1016/j.marchem.2020.103804.

(347) Potentiometric Sensor Array with Multi-Nernstian Slope, Zdrachek, E.; Bakker, E. Anal. Chem., 2020, 92, 2926-2930. DOI: 10.1021/acs.analchem.9b05187 (open access).

(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. DOI: 10.1002/elan.201900674.

(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. DOI: 10.1021/acssensors.0c00031 (open access).

(344) Quantification of Colorimetric Data for Paper-Based Analytical Devices, Soda, Y.; Bakker, E. ACS Sensors, 2020, 4, 3093-3101. DOI: 10.1021/acssensors.9b01802 (open access).

(343) 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. DOI: 10.1016/j.aca.2019.10.011.

(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. DOI: 10.1002/anie.201912651.

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

(340) Equipment-Free Detection of K+ on Paper, Soda, Y.; Citterio, D.; Bakker, E. Chimia, 2019, 73, 944. DOI: 10.2533/chimia.2019.944 (open access).

(339) An Ode to You, Reviewer for ACS Sensors, Bakker, E. ACS Sensors, 2019, 4, 1964. DOI: 10.1021/acssensors.9b01481 (open access).

(338) Closed Bipolar Electrode Colorimetric Transduction of Potentiometric PVC-Based Membrane Electrodes, Jansod, S.; Bakker, E. ACS Sensors, 2019, 4, 1008-1016. DOI: 10.1021/acssensors.9b00179 (open access).

(337) Electrogenerated Chemiluminescence for Chronopotentiometric Sensors, Gao, W.; Jeanneret, S.; Yuan, D.; Cherubini, T.; Wang, L.; Xie, X.; Bakker, E. Anal. Chem., 2019, 91, 4889–4895. DOI: 10.1021/acs.analchem.9b00787 (open access).

(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. DOI: 10.1021/acs.accounts.9b00056 (open access).

(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. DOI: 10.1021/acs.analchem.9b01145 (open access).

(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. DOI: 10.1021/acssensors.8b01521 (open access).

(333) Potentiometric Sensing, Zdrachek, E.; Bakker, E. Anal. Chem., 2019, 91, 2–26. DOI: 10.1021/acs.analchem.8b04681 (open access).

(332) Ion-Selective Electrodes, Bakker, E., Encyclopedia of Analytical Science (Third Ed.), Elsevier, 2019, 231-251.

(331) 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. DOI: 10.1016/j.snb.2018.10.046.

(330) Tunable detection range of ion-selective nano-optodes by controlling solvatochromic dye transducer lipophilicity, Wang, L.; Bakker, E. Chem. Commun., 2019, 55, 12539-12542. DOI: 10.1039/C9CC06729A (open access).

(329) Nucleic acid hybridization on an electrically reconfigurable network of gold-coated magnetic nanoparticles enables 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. DOI: 10.1038/s41565-018-0232-x.

(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. DOI: 10.1021/acs.est.8b02969 (open access).

(327) Editorial: Mátrafüred 2017 International Conference on Electrochemical Sensors, Bakker, E.; Buhlmann, P.; Gyurcsanyi, R.; Pretsch, E.; Wang, J. Electroanalysis, 2018, 30, 594-595. DOI: 10.1002/elan.201880231 (open access).

(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. DOI: 10.1021/acs.analchem.8b02145 (open access).

(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. DOI: 10.1002/elan.201800366.

(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. DOI: 10.1002/anie.201811268.

(323) Electrochemically Switchable Polymeric Membrane Ion-Selective Electrodes, Zdrachek, E.; Bakker, E. Anal. Chem., 2018, 90, 7591–7599. DOI: 10.1021/acs.analchem.8b01282 (open access).

(322) 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. DOI: 10.1021/acssensors.8b01096 (open access).

(321) Colorimetric Readout for Potentiometric Sensors with Closed Bipolar Electrodes, Jansod, S.; Cuartero, M.; Cherubini, T.; Bakker, E. Anal. Chem., 2018, 90, 6376-6379. DOI: 10.1021/acs.analchem.8b01585 (open access).

(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. DOI: 10.1002/elan.201800080.

(319) Selective Distance-Based K+ Quantification on Paper-Based Microfluidics, Gerold, C. T.; Bakker, E.; Henry, C. S. Anal. Chem., 2018, 90, 4894-4900. DOI: 10.1021/acs.analchem.8b00559 (open access).

(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. DOI: 10.1021/acssensors.8b00013 (open access).

(317) Colorimetric Ionophore-Based Coextraction Titrimetry of Potassium Ions, Thajee, K.; Wang, L.; Grudpan, K.; Bakker, E. Anal. Chim. Acta, 2018, 1029, 37-43. DOI: 10.1016/j.aca.2018.05.012.

(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. DOI: 10.1021/acs.analchem.7b05299 (open access).

(315) Describing Ion Exchange at Membrane Electrodes for Ions of Different Charge, Zdrachek, E.; Bakker, E. Electroanalysis, 2018, 30, 633–640. DOI: 10.1002/elan.201700700.

(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. DOI: 10.1002/elan.201700669.

(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. DOI: 10.1002/elan.201700510.

(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. DOI: 10.1002/chem.201800077.

(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. DOI: 10.1016/j.talanta.2017.08.053.

(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. DOI: 10.1016/j.bios.2017.07.001.

(309) So, you have a great new sensor. How will you validate it?, Bakker, E. ACS Sensors, 2018, 3, 1431. DOI: 10.1021/acssensors.8b00798 (open access).

(308) 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. DOI: 10.1021/acssensors.7b00737 (open access).

(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. DOI: 10.1021/acs.estlett.7b00388 (open access).

(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. DOI: 10.1039/C7CC05908F.

(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. DOI: 10.1021/acssensors.7b00539 (open access).

(304) Celebrating Electrochemical Sensors at the 2017 Matrafured Meeting, Bakker, E. ACS Sensors, 2017, 2, 854–854. DOI: 10.1021/acssensors.7b00452 (open access).

(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. DOI: 10.1021/acs.analchem.7b01777 (open access).

(302) Environmental Water Analysis with Membrane Electrodes, Cuartero, M.; Bakker, E. Current Opinion in Electrochemistry, 2017, 3, 97-105. DOI: 10.1016/j.coelec.2017.06.010.

(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. DOI: 10.1021/acs.estlett.7b00130 (open access).

(300) Reflecting on how ACS Sensors can help advance the field of sensing, Gooding, J.; Long, Y.-T.; Tao, N.; Kelley, S.; Merkx, M.; Sailer, M.; Bakker, E. ACS Sensors, 2017, 2, 455–456. DOI: 10.1021/acssensors.7b00240 (open access).

(299) Ionophore-Based Titrimetric Detection of Alkali Metal Ions in Serum, Zhai, J.; Xie, X.; Cherubini, T.; Bakker, E. ACS Sensors, 2017, 2, 606–612. DOI: 10.1021/acssensors.7b00165 (open access).

(298) Welcome to the first anniversary issue of ACS Sensors, Gooding, J. J.; Bakker, E.; Long, Y.-T.; Tao, N.; Kelley, S.; Merkx, M.; Sailer, M.; Mazur, A. ACS Sensors, 2017, 2, 1–2. DOI: 10.1021/acssensors.7b00004 (open access).

(297) 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. DOI: 10.1016/j.electacta.2017.04.047.

(296) In-line Acidification for Potentiometric Sensing of Nitrite in Natural Waters, Pankratova, N.; Cuartero, M.; Crespo, G.; Bakker, E. Anal. Chem., 2017, 89, 571–575. DOI: 10.1021/acs.analchem.6b03946 (open access).

(295) Reversible pH-independent optical potassium sensor with lipophilic solvatochromic dye transducer on surface modified microporous nylon, Wang, L.; Xie, X.; Zhai, Z.; Bakker, E. Chem. Commun., 2016, 52, 14254 - 14257. DOI: 10.1039/C6CC07841A.

(294) 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. DOI: 10.1021/acs.analchem.6b03355.

(293) Voltammetric Thin Layer Ionophore Based Films: Part 1. Experimental Evidence and Numerical Simulations, Yuan, D.; Cuartero, M.; Crespo, G. A.; Bakker, E. Anal. Chem., 2017, 89, 586–594. DOI: 10.1021/acs.analchem.6b03354.

(292) Direct Sensing of Total Alkalinity Profile in a Stratified Lake, Ghahraman Afshar, M.; Tercier-Waeber, M. L.; Wehrli, B.; Bakker, E. Geochem. Persp. Let., 2017, 3, 85-93. DOI: 10.7185/geochemlet.1709 (open access).

(291) Time-Dependent Determination of Unbiased Selectivity Coefficients of Ion-Selective Electrodes for Multivalent Ions, Zdrachek, E.; Bakker, E. Anal. Chem., 2017, 89, 13441–13448. DOI: 10.1021/acs.analchem.7b03726 (open access).

(290) 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. DOI: 10.1039/C6CC04876E.

(289) Wearable Sensors – An Exciting Area of Research for Sensor Scientists, Bakker, E.; Gooding, J. J. ACS Sensors, 2016, 1, 834–834. DOI: 10.1021/acssensors.6b00423 (open access).

(288) 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. DOI: 10.1021/acssensors.6b00213 (open access).

(287) Complexometric Titrations: New Reagents and Concepts to Overcome Old Limitations, Zhai, J.; Bakker, E. Analyst, 2016, 141, 4252-4261. DOI: 10.1039/C6AN00538A.

(286) 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. DOI: 10.1021/acs.analchem.6b01800.

(285) Polyurethane Ionophore-Based Thin Layer Membranes for Voltammetric Ion Activity Sensing, Cuartero, M.; Crespo, G. A.; Bakker, E. Anal. Chem., 2016, 88, 5649–5654. DOI: 10.1021/acs.analchem.6b01085.

(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. DOI: 10.1021/acssensors.6b00086 (open access).

(283) Welcome to ACS Sensors, Gooding, J. J.; Kelley, S. O.; Bakker, E.; Long, Y.; Tao, N.; Mazur, A. I. ACS Sensors, 2016, 1, 1-2. DOI: 10.1021/acssensors.6b00015 (open access).

(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. DOI: 10.1021/acs.analchem.6b00346 (open access).

(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. DOI: 10.1021/acs.analchem.5b04671.

(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. DOI: 10.1021/jacs.5b09972.

(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. DOI: 10.1021/acssensors.6b00006 (open access).

(278) Electroanalysis with Membrane Electrodes and Liquid-Liquid Interfaces, Bakker, E. Anal. Chem., 2016, 88, 395–413. DOI: 10.1021/acs.analchem.5b04034 (open access).

(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. DOI: 10.1021/acs.analchem.6b00141.

(276) Ionophore Based Voltammetric Ion Activity Sensing with Thin Layer Membranes, Cuartero, M.; Crespo, G. A.; Bakker, E. Anal. Chem., 2016, 88, 1654–1660. DOI: 10.1021/acs.analchem.5b03611.

(275) Can Calibration-free Sensors be Realized?, Bakker, E. ACS Sensors, 2016, 1, 838-841. DOI: 10.1021/acssensors.6b00247 (open access).

(274) Phenytoin Drug Speciation Analysis with Ion-Selective Membranes , Jansod, S.; Ghahraman Afshar, M.; Crespo, G. A.; Bakker, E. Biosens. Bioelectron., 2016, 79, 114-120. DOI: 10.1016/j.bios.2015.12.011.

(273) 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. DOI: 10.1039/C5SC03301B (open access).

(272) 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 Sensors, 2016, 1, 48-54. DOI: 10.1021/acssensors.5b00015 (open access).

(271) Solvatochromic dyes as pH independent indicators for ionophore emulsion based complexometric titrations, Zhai, J.; Xie, X.; Bakker, E. Anal. Chem., 2015, 87, 11587-11591. DOI: 10.1021/acs.analchem.5b03526.

(270) 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. DOI: 10.1021/acs.analchem.5b03526.

(269) Tandem Electrochemical Desalination–Potentiometric Nitrate Sensing for Seawater Analysis, Cuartero, M.; Crespo, G. A.; Bakker, E. Anal. Chem., 2015, 87, 8084–8089. DOI: 10.1021/acs.analchem.5b01973.

(268) All-Solid-State Potentiometric Sensors with Multi-Walled Carbon Nanotube Inner Transducing Layer for Anion Detection in Environmental Samples, Yuan, D.; Anthis, A.; Ghahraman Afshar, M.; Pankratova, N.; Cuartero, M.; Crespo, G.; Bakker, E. Anal. Chem., 2015, 87, 8640–8645. DOI: 10.1021/acs.analchem.5b01941.

(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. DOI: 10.1039/c5ay01941a.

(266) Charged Solvatochromic Dyes as Signal Transducers in pH Independent Fluorescent and Colorimetric Ion Selective Nanosensors, Xie, X.; Gutierrez, A.; Trofimov, V.; Szilagyi, I.; Soldati, T.; Bakker, E. Anal. Chem., 2015, 87, 9954–9959. DOI: 10.1021/acs.analchem.5b02566.

(265) A Miniature Wastewater Cleaning Plant to Demonstrate Primary Treatment in the Classroom, Neel, B.; Cardozo, C.; Perret, D.; Bakker, E. J. Chem. Ed., 2015, 92, 1889-1891. DOI: 10.1021/acs.jchemed.5b00291.

(264) Anion-Exchange Nanospheres as Titration Reagents for Anionic Analytes , Zhai, J.; Xie, X.; Bakker, E. Anal. Chem., 2015, 87, 8347–8352. DOI: 10.1021/acs.analchem.5b01530.

(263) Thin Layer Ionophore-Based Membrane for Potentiometric Multianalyte Detection, Crespo, G. A.; Cuartero, M.; Bakker, E. Anal. Chem., 2015, 87, 7729–7737. DOI: 10.1021/acs.analchem.5b01459.

(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. DOI: 10.1021/acs.analchem.5b02424.

(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. DOI: 10.2533/chimia.2015.196 (open access).

(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. DOI: 10.1039/C5AN00151J.

(259) Thin Layer Samples Controlled by Dynamic Electrochemistry, Cuartero, M.; Crespo, G. A.; Bakker, E. Chimia, 2015, 69, 203-206. DOI: 10.2533/chimia.2015.203 (open access).

(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. DOI: 10.1002/anie.201500797.

(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. Environ. Sci.: Processes Impacts, 2015, 17, 906 - 914. DOI: 10.1039/C5EM00038F.

(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. DOI: 10.1016/j.electacta.2015.03.180.

(255) Ion-Selective Optode Nanospheres as Heterogeneous Indicator Reagents in Complexometric Titrations, Zhai, J.; Xie, X.; Bakker, E. Anal. Chem., 2015, 87, 2827–2831. DOI: 10.1021/ac504213q.

(254) Paper-Based Thin Layer Coulometric Sensors for Halide Detection, Cuartero, M.; Crespo, G.A.; Bakker, E. Anal. Chem., 2015, 87, 1981–1990. DOI: 10.1021/ac504400w.

(253) Ion Selective Optodes: From the Bulk to the Nanoscale, Xie, X.; Zhai, J.; Bakker, E. Anal. Bioanal. Chem., 2015, 407, 3899-3910. DOI: 10.1007/s00216-014-8413-4.

(252) Transportation and Accumulation of Redox Active Species at the Buried Interfaces of Plasticized Membrane Electrodes, Sohail, M.; De Marco, R.; Pawlak, M.; Bakker, E.; He, N.; Latonen, R.-M.; Lindfors, T.; Jarolimova, Z. Langmuir, 2015, 31, 10599-10608. DOI: 10.1021/acs.langmuir.5b01693.

(251) 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. DOI: 10.1039/C4CC07821G.

(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. DOI: 10.1002/elan.201400522.

(249) Coulometric Calcium Pump for Thin Layer Sample Titrations, Ghahraman Afshar, M.; Crespo, G. A.; Bakker, E. Anal. Chem., 2015, 87, 10125–10130. DOI: 10.1021/acs.analchem.5b02856.

(248) Exhaustive Thin Layer Cyclic Voltammetry for Absolute Multianalyte Halide Detection, Cuartero, M.; Crespo, G.; Ghahraman Afshar, M.; Bakker, E. Anal. Chem., 2014, 86, 11387–11395. DOI: 10.1021/ac503344f.

(247) Detecting and Manipulating Ions: From Potentiometry to the Nanoscale, Xie, X.; Bakker, E. q&more, 2014, 2, 6-11. DOI: http://q-more.chemeurope.com/q-more-articles/173/detecting-and-manipulating-ions.html (open access).

(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. DOI: 10.1021/ja5107578 (open access).

(245) Environmental Aquatic Sensing at the University of Geneva, Bakker, E.; Tercier-Waeber, M. L. Chimia, 2014, 68, 772–777. DOI: 10.2533/chimia.2014.772.

(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. DOI: 10.1016/j.snb.2014.10.084.

(243) Ionophore-based ion-exchange emulsions as novel class of complexometric titration reagents, Zhai, J.; Xie, X.; Bakker, E. Chem. Commun., 2014, 50, 12659 - 12661. DOI: 10.1039/c4cc05754f.

(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. DOI: https://theanalyticalscientist.com/issues/0914/shrinking-ion-selective-sensors-for-success/ (open access).

(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. DOI: 10.1021/ac502638s (open access).

(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. DOI: 10.1016/j.snb.2014.08.041.

(239) Creating electrochemical gradients by light: from bio-inspired concepts to photoelectric conversion, Xie, X.; Bakker, E. PhysChemChemPhys, 2014, 16, 19781 - 19789. DOI: 10.1039/c4cp02566k.

(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. DOI: 10.1021/ac5019606 (open access).

(237) Direct Alkalinity Detection with Ion-Selective Chronopotentiometry, Ghahraman Afshar, M.; Crespo, G. A.; Xie, X.; Bakker, E. Anal. Chem., 2014, 86, 6461–6470. DOI: 10.1021/ac500968c (open access).

(236) Photoelectric Conversion based on Proton-Coupled Electron Transfer Reactions, Xie, X.; Bakker, E. J. Am. Chem. Soc., 2014, 136, 7857–7860. DOI: 10.1021/ja503491k (open access).

(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. DOI: 10.1039/C4CC01313A.

(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. DOI: 10.1021/ac5004163.

(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. DOI: 10.1007/s00604-014-1309-3.

(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. DOI: 10.1016/j.bios.2014.04.039.

(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. DOI: 10.1016/j.jelechem.2014.08.007.

(230) pH Independent Nano-Optodes Based on Exhaustive Ion-Selective Nanospheres, Xie, X.; Zhai, J.; Bakker, E. Anal. Chem., 2014, 86, 2853–2856. DOI: 10.1021/ac403996s.

(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. DOI: 10.1002/elan.201300607.

(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. DOI: 10.1021/ac403902f.

(227) Camping Burner-Based Flame Emission Spectrometer for Classroom Demonstrations, Néel, B.; Crespo, G. A.; Perret, D.; Bakker, E. J. Chem. Ed., 2014, 91, 1655–1660. DOI: 10.1021/ed4008149.

(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. DOI: 10.1021/am4049805.

(225) Chemical modifications of ion-selective electrode membrane surfaces for clinical diagnostics, Pawlak, M.; Bakker, E. Electroanalysis, 2014, 26, 1121–1131. DOI: 10.1002/elan.201300449.

(224) Ionophore-Based Optical Sensors, Mistlberger, G.; Crespo, G.A.; Bakker, E. Ann. Rev. Anal. Chem., 2014, 7, 483-512. DOI: 10.1146/annurev-anchem-071213-020307.

(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. DOI: 10.1038/nchem.1858.

(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. DOI: 10.1039/C3AN01715J.

(220) Enhancing Ion-Selective Polymeric Membrane Electrodes by Instrumental Control, Bakker, E. Trends Anal. Chem., 2014, 53C, 98-105. DOI: 10.1016/j.trac.2013.09.014.

(219) Advancing Schwarzenbach's complexometry: nanoscale titration reagents based on heterogeneous reactions, Zhai, J.; Xie, X.; Bakker, E. Chimia, 2014, 68, 899. DOI: 10.2533/chimia.2014.899 (open access).

(218) Ultrasmall Fluorescent Ion-Exchanging Nanospheres Containing Selective Ionophores, Xie, X.; Mistlberger, G.; Bakker, E. Anal. Chem., 2013, 85, 9932–9938. DOI: 10.1021/ac402564m (open access).

(217) Dynamic Electrochemistry with Ionophore Based Ion-Selective Membranes, Crespo, G.A.; Bakker, E. RSC Advances, 2013, 3, 25461-25474. DOI: 10.1039/C3RA43751E.

(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. DOI: 10.1016/j.jelechem.2013.10.011.

(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. DOI: 10.1021/ac401367b (open access).

(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. DOI: 10.1021/am401958e (open access).

(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. DOI: 10.2533/chimia.2013.350.

(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. DOI: 10.1021/ac400514u (open access).

(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. DOI: 10.1021/ac400470n (open access).

(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. DOI: 10.1039/C3AN00464C.

(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. DOI: 10.1002/elan.201300212.

(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. DOI: 10.1021/ac4000283.

(207) A Non-Severinghaus Potentiometric CO2 Sensor with Improved Characteristics, Xie, X.; Bakker, E. Anal. Chem., 2013, 85, 1332-1336. DOI: 10.1021/ac303534v (open access).

(206) 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. DOI: 10.1021/ac4024999 (open access).

(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. DOI: 10.1021/ac302092m (open access).

(204) Reversible Photodynamic Chloride-Selective Sensor Based on Photochromic Spiropyran, Xie, X.; Mistlberger, G.; Bakker, E. J. Am. Chem. Soc., 2012, 134, 16929-16932. DOI: 10.1021/ja307037z.

(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. DOI: 10.1021/ac302092m (open access).

(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. DOI: 10.1002/anie.201207444.

(201) Thin Layer Coulometric Determination of Nitrate in Fresh Waters, Sohail, M.; De Marco, R.; Lamb, K.; Bakker, E. Anal. Chim. Acta, 2012, 744, 39-44. DOI: 10.1016/j.aca.2012.07.026.

(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. DOI: 10.1021/ac301096r (open access).

(199) Ionophore-Based Ion Optodes without a Reference Ion: Electrogenerated Chemiluminescence for Potentiometric Sensors, Crespo, G.A.; Bakker, E. Analyst, 2012, 137, 4988-4994. DOI: 10.1039/C2AN35516G.

(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. DOI: 10.1039/C2JM31118F.

(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. DOI: 10.1039/C2CC30657C.

(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. DOI: 10.1351/PAC-CON-11-09-23.

(195) Electrogenerated Chemiluminescence for Potentiometric Sensors, Crespo, G.; Mistlberger, G.; Bakker, E. J. Am. Chem. Soc., 2012, 134, 205-207. DOI: 10.1021/ja210600k (open access).

(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. DOI: 10.1002/elan.201100434.

(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. DOI: 10.1021/ac2030046 (open access).

(192) Editorial: Matrafured Meeting on Electrochemical Sensors, Bakker, E.; Buhlmann, P.; Gyurcsanyi, R.; Pretsch, E.; Wang, J. Electroanalysis, 2012, 24, 11-12. DOI: 10.1002/elan.201180008.

(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. DOI: 10.1021/ac202273k.

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

(189) Direct Detection of Acidity, Alkalinity and pH with Membrane Electrodes, Crespo, G.; Afshar, M.G.; Bakker, E. Anal. Chem., 2012, 84, 10165-10169. DOI: 10.1021/ac302868u (open access).

(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. DOI: 10.1039/C1CC14822B.

(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. DOI: 10.2533/chimia.2011.141.

(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. DOI: 10.1039/C1AN15267J.

(185) Thin Layer Coulometry Ion Sensing Protocol with Potassium Selective Membrane Electrodes, Grygolowicz-Pawlak, E.; Bakker, E. Electrochim. Acta, 2011, 56, 10359-10363. DOI: 10.1016/j.electacta.2011.02.053.

(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. DOI: 10.1021/cg101636r.

(183) Membrane Response Model for Ion-Selective Electrodes Operated by Controlled Potential Thin-Layer Coulometry, Bakker, E. Anal. Chem., 2011, 83, 486-493. DOI: 10.1021/ac102016y.

(182) 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. DOI: 10.1016/j.aca.2010.10.012.

(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. DOI: 10.1021/ac101009n (open access).

(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. DOI: 10.1021/ac1010662 (open access).

(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. DOI: 10.1021/jo100628v.

(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. DOI: 10.1039/C0AN00198H.

(177) Thin Layer Coulometry with Ionophore Based Ion-Selective Membranes, Grygolowicz-Pawlak, E.; Bakker, E. Anal. Chem., 2010, 82, 4537-4542. DOI: 10.1021/ac100524z (open access).

(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. DOI: 10.1016/j.elecom.2009.10.048.

(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. DOI: 10.1016/j.jelechem.2009.09.031.

(174) Background Current Elimination in Thin Layer Ion-Selective Membrane Coulometry, Grygolowicz-Pawlak, E.; Bakker, E. Electrochem. Commun., 2010, 12, 1195-1198. DOI: 10.1016/j.elecom.2010.06.017.

(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. DOI: 10.1016/j.elecom.2009.08.029.

(172) International Conference on Electrochemical Sensors Matrafured 2008, Buhlmann, P.; Bakker, E.; Gyurcsanyi, R.; Pretsch, E.; Wang, J. Electroanalysis, 2009, 21, 1883-1886. DOI: 10.1002/elan.200990017.

(171) Thin Layer Electrochemical Extraction of Non-Electroactive Cations, Si, P.; Bakker, E. Chem. Commun., 2009, 35, 5260-5262. DOI: 10.1039/B907893B.

(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. DOI: 10.1021/ac802588j (open access).

(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. DOI: 10.1016/j.ab.2008.12.023.

(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. DOI: 10.1007/s10008-008-0600-9.

(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. DOI: 10.1016/j.aca.2009.07.004.

(166) Ion Channel Mimetic Chronopotentiometric Polymeric Membrane Ion Sensor for Surface Confined Protein Detection, Xu, Y.; Bakker, E. Langmuir, 2009, 25, 568-573. DOI: 10.1021/la802728p.

(165) 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. DOI: 10.1021/ac902191h.

(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. DOI: 10.1021/ac800823f.

(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. DOI: 10.1021/ac800595p.

(162) Nanoscale Potentiometry, Bakker, E.; Pretsch, E. Trends Anal. Chem., 2008, 27, 612-618. DOI: 10.1016/j.trac.2008.04.007.

(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. DOI: 10.1016/j.aca.2008.02.069.

(160) Erno Pretsch 65 years, Bakker, E. Electroanalysis, 2008, 20, 223-224. DOI: 10.1002/elan.200890002.

(159) Modern Directions for Potentiometric Sensors, Bakker, E.; Chumbimuni-Torres, K.Y. J. Braz. Chem. Soc., 2008, 19, 621-629. DOI: 10.1590/S0103-50532008000400003.

(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. DOI: 10.1016/j.ab.2007.10.043.

(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. DOI: 10.1021/ja0775467.

(155) Direct Sensing of Total Acidity with Polymer Membrane Ion-Selective Electrodes, Gemene, K.L.; Bakker, E. Anal. Chem., 2008, 80, 3743-3750. DOI: 10.1021/ac701983x.

(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. DOI: 10.1039/B714248J.

(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. DOI: 10.1021/ac701910r.

(152) Operational Limits of Controlled Current Coulometry with Ion-Selective Polymeric Membranes, Bhakthavatsalam, V.; Bakker, E. Electroanalysis, 2008, 20, 225-232. DOI: 10.1002/elan.200703979.

(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. DOI: 10.1016/j.talanta.2007.10.021.

(150) 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. DOI: 10.1021/ac800774e.

(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. DOI: 10.1021/ac071201p.

(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. DOI: 10.1021/ac7016212.

(147) Absorbance Characterization of Microsphere-Based Ion-Selective Optodes, Ye, N.; Wygladacz, K.; Bakker, E. Anal. Chim. Acta, 2007, 596, 195-200. DOI: 10.1016/j.aca.2007.06.015.

(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. DOI: 10.1016/j.aca.2007.07.058.

(145) Potentiometric Immunoassay with Quantum Dot Labels, Thürer, R.; Vigassy, T.; Hirayama, M.; Wang, J.; Bakker, E. Anal. Chem., 2007, 79, 5107-5110. DOI: 10.1021/ac070932m.

(144) Multicolor Quantum-dot Encoding for Polymeric Particle-Based Optical Ion Sensors, Xu, C.; Bakker, E. Anal. Chem., 2007, 79, 3716-3723. DOI: 10.1021/ac0701233.

(143) Modern Potentiometry, Bakker, E.; Pretsch, E. Angew. Chem. Int. Ed., 2007, 46, 5660-5668. DOI: 10.1002/anie.200605068.

(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. DOI: 10.1002/adma.200602160.

(141) Fluorescent microsphere fiber optic microsensor array for direct iodide detection at low picomolar concentrations, Wygladacz, K.; Bakker, E. Analyst, 2007, 132, 268-272. DOI: 10.1039/B614562K.

(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. DOI: 10.1021/ac061467g.

(139) Selectivity Enhancement of Anion-Selective Electrodes by Pulsed Chronopotentiometry, Gemene, K.L.; Shvarev, A.; Bakker, E. Anal. Chim. Acta, 2007, 583, 190-196. DOI: 10.1016/j.aca.2006.09.042.

(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. DOI: 10.1002/elan.200603741.

(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. DOI: 10.1016/j.snb.2006.09.007.

(136) 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. DOI: 10.1021/ac071248a.

(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. DOI: .

(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. DOI: 10.1021/ja0625780.

(133) Electrochemical Sensors (Fundamental Review), Bakker, E.; Qin, Y. Anal. Chem., 2006, 78, 3965-3983. DOI: 10.1021/ac060637m.

(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. DOI: 10.1016/j.aca.2006.05.009.

(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. DOI: 10.1039/B602906J.

(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. DOI: 10.1002/elan.200603539.

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

(128) Calcium pulstrodes with 10-fold enhanced sensitivity for measurements in the physiological concentration range, Makarychev-Mikhailov, S.; Shvarev, A.; Bakker, E. Anal. Chem., 2006, 78, 2744-2751. DOI: 10.1021/ac052211y.

(127) 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. DOI: 10.1021/ja065899k.

(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. DOI: 10.1021/ac050856s.

(125) 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. DOI: 10.1021/ac050749y.

(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. DOI: 10.1039/B503548A.

(123) Response Characteristics of a Reversible Electrochemical Sensor for the Polyion Protamine, Shvarev, A.; Bakker, E. Anal. Chem., 2005, 77, 5221-5228. DOI: 10.1021/ac050101l.

(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. DOI: 10.1016/j.aca.2005.01.008.

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

(120) Potentiometric Sensors for Trace Level Analysis, Bakker, E.; Pretsch, E. Trends Anal. Chem., 2005, 24, 199-207. DOI: 10.1016/j.trac.2005.01.003.

(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. DOI: .

(118) Imaging Fiber Microarray Fluorescent Ion Sensors Based on Bulk Optode Microspheres , Wygladacz, K.; Bakker, E. Anal. Chim. Acta, 2005, 532, 61-69. DOI: 10.1016/j.aca.2004.10.071.

(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. DOI: 10.1021/ac049348t.

(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. DOI: 10.1016/j.aca.2004.07.016.

(114) Pulstrodes: Triple Pulse Control of Potentiometric Sensors, Makarychev-Mikhailov, S.; Shvarev, A.; Bakker, E. J. Am. Chem. Soc., 2004, 126, 10548-10549. DOI: 10.1021/ja047728q.

(113) Electrochemical Sensors, Bakker, E. Anal. Chem., 2004, 76, 3285-3298. DOI: 10.1021/ac049580z.

(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. DOI: 10.1021/ac049577f.

(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. DOI: 10.1016/j.aca.2004.01.028.

(110) Distinguishing Free and Total Calcium with a Single Pulsed Galvanostatic Ion-Selective Electrode, Shvarev, A.; Bakker, E. Talanta, 2004, 63, 195-200. DOI: 10.1016/j.talanta.2003.10.010.

(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. DOI: 10.1021/ac026055w.

(108) The Phase-Boundary Potential Model, Bakker, E.; Bühlmann, P.; Pretsch, E. Talanta, 2004, 63, 3-20. DOI: 10.1016/j.talanta.2003.10.006.

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

(106) Reversible Electrochemical Detection of Nonelectroactive Polyions, Shvarev, A.; Bakker, E. J. Am. Chem. Soc., 2003, 125, 11192-11193. DOI: 10.1021/ja037167n.

(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. DOI: 10.1021/ac0346961.

(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. DOI: .

(103) A Copolymerized Dodecacarborane Anion as Covalently Attached Cation-Exchanger in Ion-Selective Sensors, Qin, Y.; Bakker, E. Anal. Chem., 2003, 75, 6002-6010. DOI: 10.1021/ac034447c.

(102) Pulsed Galvanostatic Control of Ionophore-Based Polymeric Ion Sensors, Shvarev, A.; Bakker, E. Anal. Chem., 2003, 75, 4541-4550. DOI: 10.1021/ac034409t.

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

(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. DOI: 10.1021/ac026454r.

(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. DOI: 10.1002/elan.200302806.

(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. DOI: 10.1021/ac026056o.

(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. DOI: 10.1021/ac026055w.

(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. DOI: 10.1016/S0003-2670(03)00275-7.

(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. DOI: 10.1021/ac0263059.

(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. DOI: 10.1021/ed080p1303.

(93) How Do Pulsed Amperometric Ion Sensors Work? A P.D.E. Solution, Bakker, E.; Meir, A.J. Siam Review, 2003, 45, 327-344. DOI: 10.1137/S00361445003771.

(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. DOI: 10.1016/S0039-9140(02)00405-8.

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

(90) Electrochemical Sensors, Bakker, E.; Telting-Diaz, M. Anal. Chem., 2002, 74, 2781-2800. DOI: 10.1021/ac0202278.

(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. DOI: 10.1006/jssc.2002.9673.

(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. DOI: 10.1021/ac025596i.

(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. DOI: 10.1021/ac025782o.

(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. DOI: 10.1021/ac025548y.

(85) Trace Level Potentiometry: The New Wave of Ion-Selective Electrodes, Bakker, E.; Pretsch, E. Anal. Chem., 2002, 74, 420A-426A. DOI: 10.1021/ac022086f.

(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. DOI: 10.1002/1521-4109(200211)14:19/20<1375::AID-ELAN1375>3.0.CO;2-8.

(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. DOI: 10.1021/ac0156262.

(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. DOI: 10.1021/ac0156159.

(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. DOI: 10.1002/1521-4109(200211)14:19/20<1329::AID-ELAN1329>3.0.CO;2-V.

(79) Potentiometry at Trace Levels, Bakker, E.; Pretsch, E. Trends Anal. Chem., 2001, 20, 11-19. DOI: 10.1016/S0167-2940(01)90073-1.

(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. DOI: .

(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. DOI: 10.1021/ac010526h.

(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. DOI: 10.1021/ac0104126.

(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. DOI: 10.1021/ac010694+.

(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. DOI: 10.1002/1522-2675(20010711)84:7<1952::AID-HLCA1952>3.0.CO;2-X.

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

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

(71) Improved Detection Limits and Sensitivities of Potentiometric Titrations, Peper, S.; Ceresa, A.; Bakker, E.; Pretsch, E. Anal. Chem., 2001, 73, 3768-3775. DOI: 10.1021/ac001475b.

(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. DOI: 10.1016/S0003-2670(01)01052-2.

(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. DOI: 10.1021/ac001034s.

(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. DOI: 10.1021/ac000832f.

(67) Cross-linked dodecyl acrylate microspheres: novel matrices for plasticizer-free optical ion sensing, Peper, S.; Tsagkatakis, I.; Bakker, E. Anal. Chim. Acta, 2001, 442, 25-33. DOI: 10.1016/S0003-2670(01)01132-1.

(66) Selectivity Behavior and Multianalyte Detection Capability of Voltammetric Ionophore-Based Polymeric Membrane Sensors, Jadhav, S.; Bakker, E. Anal. Chem., 2001, 73, 80-90. DOI: 10.1021/ac000569i.

(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. DOI: 10.1016/S0003-2670(00)01038-2.

(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. DOI: 10.1149/1.1390988.

(63) Ionophore-Based Membrane Electrodes: New Analytical Concepts and Non-classical Response Mechanisms, Bakker, E.; Meyerhoff, M.E. Anal. Chim. Acta, 2000, 416, 121-137. DOI: 10.1016/S0003-2670(00)00883-7.

(62) Direct Potentiometric Determination of Total Ionic Concentrations, Ceresa, A.; Pretsch, E.; Bakker, E. Anal. Chem., 2000, 72, 2050-2054. DOI: 10.1021/ac991092h.

(61) Selectivity of Potentiometric Ion Sensors, Bakker, E.; Pretsch, E.; Bühlmann, P. Anal. Chem., 2000, 72, 1127-1133. DOI: 10.1021/ac991146n.

(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. DOI: 10.1002/1521-4109(200011)12:16<1251::AID-ELAN1251>3.0.CO;2-P_.

(59) Determination of complex formation constants of lipophilic neutral ionophores in solvent polymeric membranes with segmented sandwich membranes, Mi, Y.; Bakker, E. Anal. Chem., 1999, 71, 5279-5287. DOI: 10.1021/ac9905930.

(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. DOI: .

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

(56) Renewable pH Cross-Sensitive Heparin Sensors with Incorporated Electrically Charged H+-selective Ionophores, Mathison, S.; Bakker, E. Anal. Chem., 1999, 71, 4614-4621. DOI: 10.1021/ac990387s.

(55) Voltammetric and Amperometric Transduction for Solvent Polymeric Membrane Ion Sensors, Jadhav, S.; Bakker, E. Anal. Chem., 1999, 71, 3657-3664. DOI: 10.1021/ac990195x.

(54) Polymer Membrane Ion-Selective Electrodes—What are the Limits?, Bakker, E.; Bühlmann, P.; Pretsch, E. Electroanalysis, 1999, 11, 915-933. DOI: 10.1002/(SICI)1521-4109(199909)11:13<915::AID-ELAN915>3.0.CO;2-J.

(53) Chemical Ion Sensors–Current Limits and New Trends, Bakker, E.; Diamond, D.; Lewenstam, A.; Pretsch, E. Anal. Chim. Acta, 1999, 393, 11-18. DOI: 10.1016/S0003-2670(99)00056-2.

(52) Hydrophobic Membranes as Liquid-Junction Free Reference Electrodes, Bakker, E. Electroanalysis, 1999, 11, 788-792. DOI: 10.1002/(SICI)1521-4109(199907)11:10/11<788::AID-ELAN788>3.0.CO;2-4.

(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. DOI: 10.1021/ac980962c.

(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. DOI: 10.1021/ac9809332.

(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. DOI: 10.1021/ac980944v.

(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. DOI: 10.1016/S0003-2670(99)00396-7.

(47) Polyion Sensors as Liquid Junction-Free Reference Electrodes, Mi, Y.; Mathison, S.; Bakker, E. Electrochem. Solid-State Lett., 1999, 2, 198-200. DOI: 10.1149/1.1390782.

(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. DOI: 10.1016/S0731-7085(98)00185-X.

(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. DOI: ESSL1998.

(44) Polymeric Membrane pH Electrodes Based on Electrically Charged Ionophores, Mi, Y.; Green, C.; Bakker, E. Anal. Chem., 1998, 70, 5252-5258. DOI: 10.1021/ac980678l.

(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. DOI: 10.1002/(SICI)1521-4109(199810)10:14<937::AID-ELAN937>3.0.CO;2-C.

(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. DOI: 10.1021/cr970113+.

(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. DOI: 10.1021/ac970952w.

(40) Influence of lipophilic inert electrolytes on the selectivity of polymer membrane electrodes, Nägele, M.; Mi, Y.; Bakker, E.; Pretsch, E. Anal. Chem., 1998, 70, 1686-1691. DOI: 10.1021/ac970903j.

(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. DOI: 10.1021/ac970878h.

(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. DOI: 10.1021/ac970690y.

(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. DOI: .

(36) Carrier-Based Ion-Selective Electrodes and Bulk Optodes. 1. General Characteristics, Bakker, E.; Bühlmann, P.; Pretsch, E. Chem. Rev., 1997, 97, 3083-3132. DOI: 10.1021/cr940394a.

(35) Selectivity of Carrier-Based Ion-Selective Electrodes: Is the Problem Solved?, Bakker, E. Trends Anal. Chem., 1997, 16, 252-260. DOI: 10.1016/S0165-9936(97)00024-1.

(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. DOI: 10.1149/1.1837633.

(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. DOI: 10.1149/1.1837421.

(32) Selectivity Comparison of Neutral Carrier-Based Ion-Selective Optical and Potentiometric Sensing Schemes, Bakker, E. Anal. Chim. Acta, 1997, 350, 329-340. DOI: 10.1016/S0003-2670(97)00218-3.

(31) Determination of Unbiased Selectivity Coefficients of Neutral Carrier-Based Cation-Selective Electrodes, Bakker, E. Anal. Chem., 1997, 69, 1061-1069. DOI: 10.1021/ac960891m.

(30) Selectivity of Liquid Membrane Ion-Selective Electrodes, Bakker, E. Electroanalysis, 1997, 9, 7-12. DOI: 10.1002/elan.1140090103.

(29) Origin of Anion Response of Solvent Polymeric Membrane Based Silver Ion-Selective Electrodes, Bakker, E. Sens. Actuators, B, 1996, 35, 20-25. DOI: 10.1016/S0925-4005(96)02007-2.

(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. DOI: 10.1149/1.1836608.

(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. DOI: 10.1021/ac960035a.

(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. DOI: 10.1021/ac951017g.

(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. DOI: 10.1021/ac9618536.

(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. DOI: 10.1093/clinchem/41.9.1355.

(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. DOI: .

(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. DOI: 10.1021/ma00121a021.

(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. DOI: 10.1016/0003-2670(95)00077-D.

(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. DOI: 10.1002/elan.1140070907.

(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. DOI: 10.1002/elan.1140070906.

(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. DOI: 10.1021/ac00114a005.

(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. DOI: 10.1021/ac00091a600.

(16) Optimum Composition of Neutral Carrier Based pH Electrodes, Bakker, E.; Xu, A.; Pretsch, E. Anal. Chim. Acta, 1994, 295, 253-262. DOI: 10.1016/0003-2670(94)80230-0.

(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. DOI: 10.1021/ac00086a009.

(14) Nitrite-Selective Microelectrodes, Schaller, U.; Bakker, E.; Spichiger, U.E.; Pretsch, E. Talanta, 1994, 41, 1001-1005. DOI: 10.1016/0039-9140(94)E0048-V.

(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. DOI: 10.1016/0039-9140(94)E0041-O.

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

(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. DOI: 10.1021/ac00076a016.

(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. DOI: 10.1021/ac00075a013.

(9) Detection Limit of Ion-Selective Bulk Optodes and Corresponding Electrodes, Bakker, E.; Willer, M.; Pretsch, E. Anal. Chim. Acta, 1993, 282, 265-271. DOI: 10.1016/0003-2670(93)80210-C.

(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. DOI: 10.1016/0003-2670(93)85122-Z.

(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. DOI: 10.1016/0003-2670(93)85102-P.

(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. DOI: 10.1016/0925-4005(93)85264-B.

(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. DOI: 10.1016/0925-4005(93)85232-Y.

(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. DOI: .

(3) Selectivity of Ion-Sensitive Bulk Optodes, Bakker, E.; Simon, W. Anal. Chem., 1992, 64, 1805-1812. DOI: 10.1021/ac00041a012.

(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. DOI: 10.1021/ac00038a007.

(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. DOI: 10.1093/clinchem/37.8.1350.