

## 6 Literaturverzeichnis

- Apel P, Koschorreck J (2005) EU-Leitfaden für die Umweltbewertung von Humanarzneimitteln, UBA Text, 29/05
- Applied Biosystems, User Manual API2000
- ARGE Elbe (2003) Arbeitsgemeinschaft für die Reinhaltung der Elbe, Arzneistoffe in Elbe und Saale, <http://www.arge-elbe.de/wge/Download/Berichte/03Arzn.pdf>
- Audunsson G (1986) Aqueous/aqueous extraction by means of a liquid membrane for sample cleanup and preconcentration of amines in a flow system. *Analytical Chemistry* 58:2714
- Balk F, Ford RA (1999) Environmental risk assessment for the polycyclic musks AHTN and HHCb in the EU: I. Fate and exposure assessment. *Toxicology Letters* 111:57-79
- Belardi RP, Pawliszyn JB (1989) Application of chemically modified fused silica fibers in the extraction of organics from water matrix samples and their rapid transfer to capillary columns. *Water pollution research journal of Canada* 24
- BLAC (2003) Arzneimittel in der Umwelt Auswertung der Untersuchungsergebnisse, BLAC, Bund/Länderausschuss für Chemikaliensicherheit
- Bos SJ, Leeuwen SMv, Karst U (2006) From fundamentals to applications: recent developments in atmospheric pressure photoionization mass spectrometry. *Analytical and Bioanalytical Chemistry* 384:85-99
- Braun P (2006) Entwicklung und Erprobung spurenanalytischer Methoden zum Nachweis von ausgewählten endokrin aktiven Verbindungen und pharmazeutischen Reststoffen in Wasserproben. Dissertation. Universität Leipzig.
- Cleuvers M (2002) Aquatische Ökotoxikologie ausgewählter Arzneimittel Algentest und akuter Daphnientest. *UWSF – Zeitschrift für Umweltchemie und Ökotoxikologie* 14:85-89
- Cleuvers M (2005) Initial risk assessment for three  $\beta$ -blockers found in the aquatic environment. *Chemosphere* 59:199
- Criegee R (1975) Mechanismus der Ozonolyse. *Angewandte Chemie* 21:765-771
- Einsle T, Paschke H, Bruns K, Schrader S, Popp P, Möder M (2006) Membrane-assisted liquid-liquid extraction coupled with gas chromatography-mass spectrometry for determination of selected polycyclic musk compounds and drugs in water samples. *Journal of Chromatography A* 1124:196-204
- Eisert R, Levsen K (1995) Determination of Pesticides in Aqueous Samples by Solid-Phase Microextraction In-Line Coupled to Gas Chromatography-Mass Spectrometry. *Journal of the American Society for Mass Spectrometry* 6:1119-1130
- Fiedler GM, Ceglarek U, Lembcke J, Baumann S, Leichtle A, Thiery A (2004) Anwendungsgebiete der Massenspektrometrie in der Klinischen Chemie und Laboratoriumsmedizin. *Journal of Laboratory Medicine* 28:185-194

- Hauser B, Popp P (2001) Membrane-assisted solvent extraction of organochlorine compounds in combination with large volume injection-GC/ECD. *Journal of Separation Science* 24:551
- Hauser B, Popp P, Kleine-Benne E (2002) Membrane-assisted solvent extraction of triazines and other semi-volatile contaminants directly coupled to large-volume injection-gas chromatography-mass spectrometric detection. *Journal of Chromatography A* 963:27-36
- Heberer T (2002) Occurrence, fate, and removal of pharmaceutical residues in the aquatic environment: a review of recent research data. *Toxicology Letters* 131:5-17
- Hesse M, Meier H, Zeeh B (2005) *Spektroskopische Methoden in der Organischen Chemie*, Thieme
- Hirsch R, Ternes T, Haberer K, Kratz K-L (1999) Occurrence of antibiotics in the aquatic environment. *The Science of The Total Environment* 225:109
- Huber MM, Canonica S, Park GY, Von Gunten U (2003) Oxidation of pharmaceuticals during ozonation and advanced oxidation processes. *Environmental Science and Technology* 37:1016
- Huber MM, Ternes TA, Von Gunten U (2004) Removal of estrogenic activity and formation of oxidation products during ozonation of 17 $\alpha$ -ethinylestradiol. *Environmental Science and Technology* 38:5177
- Huber MM, Göbel A, Joss A, Hermann N, Löffler D, McArdell CS, Ried A, Siegrist H, Ternes TA, Von Gunten U (2005) Oxidation of pharmaceuticals during ozonation of municipal wastewater effluents: A pilot study. *Environmental Science and Technology* 39:4290
- Jönsson JA, Mathiasson L (1999a) Liquid membrane extraction in analytical sample preparation. I. Principles. *TrAC - Trends in Analytical Chemistry* 18:318
- Jönsson JA, Mathiasson L (1999b) Liquid membrane extraction in analytical sample preparation. II. Applications. *TrAC - Trends in Analytical Chemistry* 18:325
- Kuورانne T, Kotiaho T, Pedersen-Bjergaard S, Rasmussen KE, Leinonen A, Westwood S, Kostianen R (2003) Feasibility of a liquid-phase microextraction sample clean-up and liquid chromatographic/mass spectrometric screening method for selected anabolic steroid glucuronides in biological samples. *Journal of Mass Spectrometry* 38:16
- La Guardia MJ, Hale RC, Harvey E, Mainor TM (2001) Alkylphenol Ethoxylate Degradation Products in Land-Applied Sewage Sludge (Biosolids). *Environmental Science and Technology* 35:4798-4804
- Lange F, Cornelissen S, Kubac D, Sein MM, von Sonntag J, Hannich CB, Golloch A, Heipieper HJ, Möder M, von Sonntag C (2006) Degradation of macrolide antibiotics by ozone: a mechanistic case study with clarithromycin. *Chemosphere* 65:17-23
- LfU (2004) *Bayrisches Landesamt für Umwelt, Arzneimittel in der Umwelt, F+E Vorhaben 2000-2002, 73e04010049, Schlussbericht*

- Löffler D, Römbke J, Meller M, Ternes TA (2005) Environmental fate of pharmaceuticals in water/sediment systems. *Environmental Science and Technology* 39:5209
- Lord HL, Möder M, Popp P, Pawliszyn JB (2004) In vivo study of triazine herbicides in plants by SPME. *Analyst* 129:107
- Luckenbach T (2004) Fatal attraction: Synthetic musk fragrances compromise xenobiotic defense systems in mussels. *Marine Environmental Research* 58:215
- Major RE (2003) Trends in Sample Preparation. *LC-GC Europe* 16:71
- McArdell CS, Molnar E, Suter MJF, Giger W (2003) Occurrence and Fate of Macrolide Antibiotics in Wastewater Treatment Plants and in the Glatt Valley Watershed, Switzerland. *Environmental Science and Technology* 37:5479
- Melcher RG, Morabito PL (1990) Membrane/gas chromatographic system for automated extraction and determination of trace organics in aqueous samples. *Analytical Chemistry* 62:2183
- Miege C, Favier M, Brosse C, Canler J-P, Coquery M (2005) Concentrations and Fluxes of Betablockers in Effluents of Wastewater Treatment Plants from the Lyon Area (France). Proceedings of the 1st EMCO workshop. <http://www.cid.csic.es/emco/Proceedings.pdf>
- Mills LJ, Chichester C (2005) Review of evidence: Are endocrine-disrupting chemicals in the aquatic environment impacting fish populations? *Science of the Total Environment* 343:1
- Müller S, Möder M, Schrader S, Popp P (2003) Semi-automated hollow-fibre membrane extraction, a novel enrichment technique for the determination of biologically active compounds in water samples. *Journal of Chromatography A* 985:99
- Muñoz F, von Sonntag C (2000) The reactions of ozone with tertiary amines including the complexing agents nitrilotriacetic acid (NTA) and ethylenediaminetetraacetic acid (EDTA) in aqueous solution. *Journal of the Chemical Society, Perkin Transactions* 2:2029
- Muñoz F, Mvula E, Braslavsky SE, Von Sonntag C (2001) Singlet dioxygen formation in ozone reactions in aqueous solution. *Journal of the Chemical Society, Perkin Transactions* 2:1109
- Nakamura S, Takino M, Daishima S (2000) Determination of chlorophenols, bisphenol A and 17 $\beta$ -estradiol by gas chromatography/negative-ion chemical-ionization mass spectrometry. *Bunseki Kagaku* 49:181
- Nakamura S, Hwee Sian T, Daishima S (2001) Determination of estrogens in river water by gas chromatography-negative-ion chemical-ionization mass spectrometry. *Journal of Chromatography A* 919:275
- Oaks JL, Gilbert M, Virani MZ, Watson RT, Meteyer CU, Rideout BA, Shivaprasad HL, Ahmed S, Chaudhry MJI, Arshad M, Mahmood S, Ali A, Khan AA (2004) Diclofenac residues as the cause of vulture population decline in Pakistan. *Nature* 427:630
- Organikum, Ed. Becker HGO, Berger W, Domschke G, 2004, WILEY-VCH, Weinheim

- Phillips B, Harrison P (1999) Ed. Hester RE Harrison RM Endocrine disrupting chemicals, Issues in Environmental Science and Technology, The Royal Society of Chemistry, 12:1-19
- Pratt KF, Pawliszyn J (1992) Gas extraction kinetics of volatile organic species from water with a hollow fiber membrane. *Analytical Chemistry* 64:2101
- Propper CR (2005) The Study of Endocrine-Disrupting Compounds: Past Approaches and New Directions. *Integrative and Comparative Biology* 45:194-200
- Raffaelli A, Saba A (2003) Atmospheric pressure photoionization mass spectrometry. *Mass Spectrometry Reviews* 22:318
- Rasmussen KE, Pedersen-Bjergaard S, Krogh M, Grefslie Ugland H, Grønhaug T (2000) Development of a simple in-vial liquid-phase microextraction device for drug analysis compatible with capillary gas chromatography, capillary electrophoresis and high-performance liquid chromatography. *Journal of Chromatography A* 873:3
- Rasmussen KE, Pedersen-Bjergaard S (2004) Developments in hollow fibre-based, liquid-phase microextraction. *TrAC - Trends in Analytical Chemistry* 23:1
- Richardson ML, Bowron JM (1985) The fate of pharmaceutical chemicals in the aquatic environment. *Journal of Pharmacy and Pharmacology* 37:1
- Ricking M, Schwarzbauer J, Franke S (2003) Molecular markers of anthropogenic activity in sediments of the Havel and Spree Rivers (Germany). *Water Research* 37:2607
- Robb DB, Covey TR, Bruins AP (2000) Atmospheric pressure photoionization: An ionization method for liquid chromatography-mass spectrometry. *Analytical Chemistry* 72:3653
- Sacher F, Lochow E, Bethmann D, Brauch HJ (1998) Vorkommen von Arzneimittelwirkstoffen in Oberflächenwässern. *Vom Wasser* 90:233-243
- Schellin M (2006) Entwicklung und Anwendung neuer Techniken zur Extraktion organischer Kontaminanten aus verschiedenen Matrices. Dissertation. Universität Leipzig
- Stan H-J, Heberer T, Linkerhäger M (1994) Vorkommen von Clofibrinsäure in aquatischen System: Führt die therapeutische Anwendung zu einer Belastung von Oberflächen-, Grund- und Trinkwasser? *Vom Wasser*:57-68
- Staud E (1992) Membranen und Membranprozesse, VCH Verlagsgesellschaft, Weinheim
- Ternes TA (1998) Occurrence of drugs in German sewage treatment plants and rivers. *Water Research* 32:3245
- Ternes TA, Hirsch R (2000) Occurrence and behavior of X-ray contrast media in sewage facilities and the aquatic environment. *Environmental Science and Technology* 34:2741-2748
- Ternes T (2001) Pharmaceuticals and Personal Care Products in the Environment: Scientific and Regulatory Issues. 39-54

- 
- Ternes TA, Stüber J, Herrmann N, McDowell D, Ried A, Kampmann M, Teiser B (2003) Ozonation: A tool for removal of pharmaceuticals, contrast media and musk fragrances from wastewater? *Water Research* 37:1976
- Ternes TA (2004) EU Projekt POSEIDON, Abschlussbericht
- Ternes TA (2006) persönliche Kommunikation
- van Rooyen GF, Badenhorst D, Swart KJ, Hundt HKL, Scanes T, Hundt AF (2002) Determination of carbamazepine and carbamazepine 10, 11-epoxide in human plasma by tandem liquid chromatography-mass spectrometry with electrospray ionisation. *Journal of Chromatography B* 769:1-7
- Wasserwissen, Institut für Umweltverfahrenstechnik – Universität Bremen, Lexikon, <http://www.wasser-wissen.de>
- WHO (2006) Collaborating Centre for Drug Statistics Methodology, <http://www.whocc.no/atcddd/>