Bibliography

[1] AATOLA H., LARMI M., SARJOVAARA T., MIKKONEN S. *Hydrotreated Vegetable Oil (HVO) as a Renewable Diesel Fuel: Trade-off between NOx, Particulate Emission, and Fuel Consumption of a Heavy Duty Engine*. SAE International, 2008

[2] Alzaga, R., Montuori, P., Ortiz, L., Bayona, J.M., Albaiges, J., *Fast solid-phase extraction-gas chromatography-mass spectrometry procedure for oil fingerprinting*. Application to the Prestige oil spill, J. Chromatography A, 1025(2004 133-138)

[3] ASTM D 3415, *Standard Practice for Identification of Waterborne Oils*, www.astm.org.

[4] ASTM D 3328, *Standard Test Methods for Comparison of Waterborne Petroleum Oils by Gas Chromatography*, www.astm.org.

[5] ASTM D6560, *Standard test method for determination of asphaltenes (heptane insolubles) in crude petroleum and petroleum products*, www.astm.org.

[6] ALBAIGÉS J., KIENHUIS P.G.M., DAHLMANN G. Oil Spill Identification. In: *Handbook of Oil Spill Science and Technology*, (FINGAS M., ed.). Wiley Online Library, 2015, pp. 165–203.

[7] ALBAIGÉS J., BAYONA J.M., RADOVIĆ J.R. *Photochemical effects on oil spill identification*. In: Stout S.A. and Wang Z., (Eds.), Standard Handbook Oil Spill Environmental Forensics, Fingerprinting and Source Identification, 2nd ed, 2016, Academic Press/Elsevier, 917–960, Chapter: 20.

[8] ALBAIGÉS J., DE LA TORRE L., BAYONA J.M., DOMÍNGUEZ C. *Applications of the CEN methodology in multiple oil spills in Spanish waters.* In: Stout S.A. and Wang Z., (Eds.), Oil Spill Environmental Forensics Case Studies, 2018, Butterworth-Heinemann/Elsevier, 325–343, Chapter: 15.

[9] ALBAIGÉS J., JIMENEZ N., ARCOS A., DOMÍNGUEZ C., BAYONA J.M. The use of long-chain alkylbenzenes and alkyltoluenes for fingerprinting marine oil wastes. *Chemosphere*. 2013, **91** (3) pp. 336–343

[10] BAYLON et al. Evaluation of the self-heating tendency of vegetable oils by differential scanning calorimetry. *J. For. Sci.* 2008, **53** (6) pp. 1334–1343

[11] *Bonn-Agreement and Bonn-OSINet*. See www.bonnagreement.org and www.bonnagreement.org/activities/osinet for information and documentation.

[12] CHRISTENSEN J.H., TOMASI G. *A multivariate approach to oil hydrocarbon fingerprinting and spill source identification*, In: Stout S.A. and Wang Z., (Eds.), Standard Handbook Oil Spill Environmental Forensics, Fingerprinting and Source Identification, 2nd ed., 2016, Academic Press/Elsevier, 747–788, Chapter: 16.

[13] CURRIE L.A., SVEHLA G. Nomenclature for the presentation of results of Chemical data. *Pure Appl. Chem.* 1994, **66** (3) pp. 595–608

[14] DAHLMANN G., KIENHUIS P.G.M. *Development and application of online computerized oil spill identification – COSIweb*. In: Stout S.A. and Wang Z., (Eds.), Standard Handbook Oil Spill Environmental Forensics, Fingerprinting and Source Identification, 2nd ed., 2016, Academic Press/Elsevier, 729–746, Chapter: 15.

[15] DALING P.S., STRØM T. 1999, *Weathering of Oils at Sea: Model/Field Data Comparisons*. Spill Science and Technology Bulletin, Vol. 5, no. 1, pp.63-74 1999. STF66 S99010

[16] DEMELLO J.A., CARMICHAEL C.A., PEACOCK E.E., NELSON R.K., AREY J.S., REDDY C.M. Biodegradation and environmental behaviour of biodiesel mixtures in the sea: An initial study. *Mar. Pollut. Bull.* 2007, **54** (7) pp. 894–904

[17] DOUGLAS G.S., BENCE A.E., PRINCE R.C., MCMILLEN S.J., BUTLER E.L. Environmental Stability of Selected Petroleum Hydrocarbon Source and Weathering Ratios. *Environ. Sci. Technol.* 1996, **1996** (30) pp. 2332–2339

[18] DOUGLAS G.S., STOUT S.A., UHLER A.D., MCCARTHY K.J., EMSBO-MATTINGLY S.D. *Advantages of Quantitative Chemical Fingerprinting in Oil Spill Identification and allocation of mixed hydrocardon contaminants*. In: Stout S.A. and Wang Z., (Eds.), Standard Handbook Oil Spill Environmental Forensics, Fingerprinting and Source Identification, 2nd ed, 2016, Academic Press/Elsevier, 789–848, Chapter: 17.

[19] ELISEEV O.L. Gas to Liquid Technologies. *Russ. J. Gen. Chem.* 2009, **79** (11) pp. 2509–2519

[20] EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025)*

[21] ETTRE L.S. *Nomenclature for chromatography*. (IUPAC Recommendations 1993), Section 4.3. *Pure Appl. Chem.* 1993, **65** (4) pp. 819–872

[22] FAKSNESS L.-G., DALING P.S., HANSEN A.B., KIENHUIS P.G.M., DUUS R. *New guidelines for Oil Spill Identification of Waterborne Petroleum and Petroleum Products,* Proc 28 th Artic and Marine Oilspill Program (AMOP) Technical Seminar, Calgary, Canada. Jne 7-9, 2005, Environment Canada, Ottawa, 1, 183-202.

[23] Faksness, L. G., N. Gjøs and F. Oreld (2002), *Nordtest. Improvement of laboratory techniques: Column clean up* SINTEF report STF66 A02039

[24] FINGAS M. In Situ burning: an update. In: *Oil spill Science and Technology*, (FINGAS M., ed.). Elsevier, Second Edition, 2017, pp. 486–698., CH 10

[25] FULLER S., SPIKMANS V., VAUGHAN G., GUO C. Effects of Weathering on Sterol, Fatty Acid Methyl Ester (FAME) and Hydrocarbon Profiles of Biodiesel and Biodiesel/Diesel Blends. *Environ. Forensics*. 2013, **14** pp. 42–49

[26] GALLOTTA F.D.C., CHRISTENSEN J.H. Comparison of Quantitative and Semi-quantitative Methods in Source Identification following the OSPAR Oil Spill, in Parana, Brazil. In: Stout S.A. and Wang Z., (Eds.), Oil Spill Environmental Forensics Case Studies, 2018, Butterworth-Heinemann/Elsevier, 515–561, Chapter: 25.

[27] GONZÁLEZ J. et al. Spatial and temporal distribution of dissolved/dispersed aromatic hydrocarbons in seawater in the area affected by the Prestige oil spill. *Mar. Pollut. Bull.* 2006, **53** pp. 250–259

[28] HARRIS D.C. *Quantitative chemical analysis*. W. H. Freemantle and Company, New York, USA, Fourth Edition, 1995

[29] ISO 5725-1, *Accuracy (trueness and precision) of measurement methods and results. Part 1: General principles and definitions*

[30] ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

[31] ISO 5725-6, *Accuracy (trueness and precision) of measurement methods and results — Part 6: Use in practice of accuracy values*

[32] IUPAC. *Compendium of Chemical Terminology*, http://goldbook.iupac.org.

[33] KIENHUIS P., DAHLMANN G. *Second Intercalibration in the framework of Bonn-OSInet. Round Robin 2007 - The comparison of six HFO samples.* RWS-WD document 2007.WIL23x. The document can be freely downloaded at www.bonnagreement.org, section Bonn-OSInet.

[34] KIENHUIS P., DAHLMANN G. *Fourth Intercalibration in the framework of Bonn-OSInet. Round Robin 2009 - The comparison of six bilge samples.* RWS-WD document 2010.WGMLO7x. The document can be freely downloaded at www.bonnagreement.org, section Bonn-OSInet.

[35] KIENHUIS P., KRAUS U. *Ninth Intercalibration in the framework of Bonn-OSInet. Round Robin 2014 - The comparison of four crude oil samples testing the effects of dissolution and burning.* The document can be freely downloaded at www.bonnagreement.org, section Bonn-OSInet.

[36] KIENHUIS P., HANSEN A.B., FAKSNESS L.-G., STOUT S.A., DAHLMANN G. *CEN Methodology for Oil Spill Identification*, In: Stout S.A. and Wang Z., (Eds.), Standard Handbook Oil Spill Environmental Forensics, Fingerprinting and Source Identification, 2nd ed, 2016, Academic Press/Elsevier, 685–728, Chapter: 14.

[37] KIENHUIS P., FITZ N., TOLOSA I., BLAGA C., PESCHIER L. *Paraffin wax spill identification by GC-FID and GC-MS*. In: Stout S.A. and Wang Z., (Eds.), Oil Spill Environmental Forensics Case Studies, 2018, Butterworth-Heinemann/Elsevier, 157–186, Chapter: 8.

[38] KRAUS U., KOOISTRA K., KIENHUIS P. *Tenth Intercalibration in the framework of Bonn-OSInet. Round Robin 2015 - The comparison of four diesel samples including FAMEs derived from biodiesel.* The document can be freely downloaded at www.bonnagreement.org, section Bonn-OSInet.

[39] KRAUS U., KOOISTRA K., KIENHUIS P. *Eleventh Intercalibration in the framework of Bonn-OSInet. Round Robin 2016 - The comparison of four petroleum samples: Wax-enrichment, Ultra low sulfur fuel oil and photo-oxidation.* The document can be freely downloaded at www.bonnagreement.org, section Bonn-OSInet.

[40] KRAUS U., KOOISTRA K., KIENHUIS P. *Twelfth Intercalibration in the framework of Bonn-OSInet. Round Round robin 2017 - The comparison of five petroleum samples: burning residue and new fuel oils*. The document can be downloaded at www.bonnagreement.org, section Bonn-OSInet.

[41] KRAUS U., KOOISTRA K. *Fourtheenth Intercalibration in the framework of Bonn-OSInet. Round Round robin 2019 - The comparison of five lubricating oil samples: weathering effects and additives – diagnostic ratios.* The document can be downloaded at www.bonnagreement.org, section Bonn-OSInet.

[42] LAI W.-C., SONG C. Temperature programmed retention indices for GC and GC-MS analysis of coal- and petroleum-derived liquid fuels. *Fuel*. 1995, **74** (10) pp. 1436–1451

[43] LUNDBERG R. *Validation of Biomarkers for the Revision of the CEN/TR 15522-2:2012 Method: A Statistical Study of Sampling, Discriminating Powers and Weathering of new Biomarkers for*

Comparative Analysis of Lighter Oils. Student thesis 2019. Available at http://www.diva-portal.org/smash/get/diva2:1321181/FULLTEXT01.pdf

[44] MALMBORG J., ANDERS NORDGAARD A. Forensic characterisation of mid-range petroleum distillates using light biomarkers. *Environ. Forensics*. 2016, **17** (3) pp. 244–252. DOI:10.1080/15275922.2016.1177758

[45] MALMBORG J. Examining the weathering susceptibility of light biomarkers. *Environ. Forensics*. 2017, **18** (3) pp. 197–206. DOI:10.1080/15275922.2017.1340367

[46] MALMBORG J., KOOISTRA K., KRAUS U.R., PAUL KIENHUIS P.G.M. *Evaluation of light petroleum biomarkers for the 3rd edition of the European Committee for Standardization methodology for oil spill identification (EN15522-2)*, Environmental Forensics, 22:3-4, 325-339 (2021) DOI: 10.1080/15275922.2020.1850558

[47] MELBYE et al. 2001, AMOS Report No. 10: "Flow-through system design description".(STF66 A01041)

[48] MEPC. 187(59) Adopted on 17 July 2009. Amendments to the Annex of the protocol of 1978 relating to the international convention for the prevention of pollution from ships, 1973

[49] MINAMI I. Molecular Science of Lubricant Additives. *Appl. Sci. (Basel)*. 2017, **7** p. 445. DOI:10.3390/app7050445

[50] MORONE P., COTTONI L. *Biofuels: technology, economics, and policy issues*. In R. Luque, C. S. Lin, K. Wilson, & J. Clark, Handbook of Biofuels Production, 2nd ed, 2016, Elsevier, 61-84, Chapter: 4.

[51] MÖSSNER et al. Gas chromatographic retention behaviour of polycyclic aromatic sulphur heterocyclic compounds, (dibenzothiophene, naphtho[b]thiophenes, benzo[b]naphthothiophenes and alkylsubstituted derivatives) on stationary phases of different selectivity. *J. Chromatogr. A*. 1999, **841** pp. 207–228

[52] LAUENSTEIN G.G., CANTILLO A.Y., eds. *NOAA Technical Memorandum NOS ORCA 130, Sampling and Analytical Methods of the National Status and Trend Program 1993-1996 Update*. Silver Spring, Maryland, March 1998

[53] NORDGAARD A. et al. Scale of conclusions for the value of evidence. *Law Probab. Risk*. 2012, **11** (1) pp. 1–24

[54] NORDTEST. 1991, *Method NT CHEM 001 Oil spill identification* (Edition 2, approved 1991) (Available through NORDTEST, P.O. Box 116, FIN-02151 Espoo, Finland)

[55] PETERS K.E., WALTERS C.C., MOLDOWAN J.M. (2005), The Biomarker Guide Volume 1, Biomarkers and Isotopes in the Environment and Human History. (Cambridge University Press, New York, USA)

[56] PETERS K.E., WALTERS C.C., MOLDOWAN J.M. (2005), The Biomarker Guide Volume 2, Biomarkers and Isotopes in Petroleum Systems and Earth History. (Cambridge University Press, New York, USA)

[57] PRINCE C. *Biodiesel. Handbook of Hydrocarbon and Lipid Microbiology*. Springer Berlin Heidelberg, 2010, pp. 2271–5.

[58] PRINCE R.C., WALTERS C.C. B*iodegradation of oil hydrocarbons and its implications for source identification*, In: Stout S.A. and Wang Z., (Eds.), Standard Handbook Oil Spill Environmental Forensics, Fingerprinting and Source Identification, 2nd ed, 2016, Academic Press/Elsevier, 869-916, Chapter: 19.

[59] RADOVIC J.R. et al. Assessment of photochemical processes in marine oil spill fingerprinting. *Mar. Pollut. Bull.* 2014, **79** pp. 268–277

[60] Rist Sørheim K., Daling P.S., Cooper D., Buist I., Faksness L-G., Altin D., Pettersen T-A., Bakke O. M., *Characterization of Low Sulfur Fuel Oils (LSFO) – A new generation of marine fuel oils*, SINTEF report OC2020 A-050 Open, 2020.

[61] RØNNINGSEN H.P., BJØRNDAL B., HANSEN A.B., PEDERSEN W.B. Wax precipitation from North Sea crude oils. 1.Crystallization and dissolution temperatures and newtonian and non-newtonian flow properties. *Energy Fuels*. 1991, **5** pp. 895–908

[62] Scholz D., Warren S.R., Walker A.H., Michiel J., *In-Situ Burning, the fate of burned oil*. API Publication 4735, 2004.

[63] SHANG D., KIM M., HABERL M. Rapid and sensitive method for the determination of polycyclic aromatic hydrocarbons in soils using pseudo multiple reaction monitoring gas chromatography/tandem mass spectrometry. *J. Chromatogr. A*. 2014, **1334** pp. 118–125

[64] Sokolow S., Karnofsky J., and Gustafson P. *The Finnigan Library Search Program*, Finnigan Application report 2, San Jose, California, USA.

[65] STOUT S., NAPLES W.P., UHLER A.D., MCCARTHY K.J., ROBERTS L.G., UHLER R.M. (2000), *Use of Quantitative Biomarker Analysis in the Differentiation and Characterisation of Spilled Oil.* Paper prepared for the SPE International Conference on Health, Safety, and the Environment, Stavanger, Norway, 26-28 June 2000

[66] STOUT S.A., UHLER A.D., MCCARTHY K.J. A Strategy and Methodology for Defensibly Correlating Spilled Oil to Source Candidates. *Environ. Forensics*. 2001, **2** pp. 87–98

[67] STOUT S.A., WANG Z. (2008), *Diagnostic compounds for fingerprinting petroleum in the environment.* In: Environmental Forensics, R.E. Hester and R.M. Harrison, Eds., Royal Soc. Chem., Issues in Environmental Science and Technology, Special Publ. No. 26, London, pp. 54-104.

[68] STOUT S.A. Oil spill fingerprinting method for oily matrices used in the Deepwater Horizon NRDA. *Environ. Forensics*. 2016, **17** pp. 218–243

[69] STOUT S.A., WANG Z. *Chemical fingerprinting methods and factors affecting petroleum fingerprints in the environment*, In: Stout S.A. and Wang Z., (Eds.), Standard Handbook Oil Spill Environmental Forensics, Fingerprinting and Source Identification, 2nd ed, 2016, Academic Press/Elsevier, 61–130, Chapter: 3.

[70] STRØM-KRISTIANSEN et al. 1997, *Weathering and dispersion of naphthenic, asphaltenic and waxy crude oils* in "Proceedings of the 1997 International Oil Spill Conference", pp. 631-636, 1997.

[71] SUTTON P.A., LEWIS C.A., ROWLAND S.J. Isolation of individual hydrocarbons from the unresolved complex hydrocarbon mixture of a biodegradated crude oil using preperative capillary gas chromatography. *Org. Geochem.* 2005, **36** pp. 963–970

[72] PRINCE R.C., KELLEY B.A., BUTLER J.D. Three Widely-Available Dispersants Substantially Increase the Biodegradation of otherwise Undispersed Oil. *J. Mar. Sci. Res. Dev.* 2016, **6** p. 183. DOI:10.4172/2155-9910.1000183

[73] Viitala, N. (1999), *Oil spill identification. Absorbing materials for oil spill sampling*. Nordtest report NT Techn Report 444, Approved 1999-06

[74] VERMEIRE M.B. (2012) *Everything you need to know about marine fuels*. Available from: http://www.chevronmarineproducts.com.

[75] WANG Z., FINGAS M. Use of Methyldibenzothiophenes as Markers for Differentiation and Source Identification of Crude and Weathered Oils. *Environ. Sci. Technol.* 1995, **29** (11) pp. 2842–2849

[76] WANG Z., FINGAS M., PAGE D.S. Oil Spill Identification. *J. Chromatogr. A*. 1999, **843** pp. 369–41

[77] WANG Z., YANG C., BROWN C., HOLLEBONE B., LANDRIAULT M. 2008. *A case study: distinguishing pyrogenic hydrocarbons from petrogenic hydrocarbons*. International Oil Spill Conference Proceeding, no. 1, May 2008, pp. 311–320.

[78] WANG Z., YANG C., YANG Z., BROWN C.E., HOLLEBONE B.P., STOUT S.A. *Petroleum biomarker fingerprinting for oil spill identification and source identification*, In: Stout S.A. and Wang Z., (Eds.), Standard Handbook Oil Spill Environmental Forensics, Fingerprinting and Source Identification, 2nd ed, 2016, Academic Press/Elsevier, 131–244, Chapter: 4.

[79] Weiss, H.M., Wilhelms, A., Mills, N., Scotchmer, J., Hall, P.B., Lind, K. and Brekke, T., *NIGOGA - The Norwegian Industry Guide to Organic Geochemical Analyses* [online]. Edition 4.0 Published by Norsk Hydro, Statoil, Geolab Nor, SINTEF Petroleum Research and the Norwegian Petroleum Directorate. 102 pp, 2000. Available from World Wide Web: https://www.npd.no/engelsk/nigoganigoga.p/f

[80] Willis, S. et al. *ENFSI guideline for evaluative reporting in forensic science*. European Network of Forensic Science Institutes (2015).

[81] Yang C., Wang Z., Hollebone B., Brown C. E., Landriault M., *Application of statistical analysis in the selection of diagnostic ratios for forensic identification of an oil spill*. International Oil Spill Conference Proceedings 2008 (1):297-310. doi: doi:10.7901/2169-3358-2008-1-297.

[82] Yang C, et al. *Characterisation and differentiation of chemical fingerprints of virgin and used lubricating oils for identification of contamination or adulteration sources*. Fuel 163 (2016) 271-281.

[83] YANG Z., WANG Z., HOLLEBONE B.P., YANG C., BROWN C.E. *Forensic fingerprinting of biodiesel and its blends with petroleum oil*, In: Stout S.A. and Wang Z., (Eds.), Standard Handbook Oil Spill Environmental Forensics, Fingerprinting and Source Identification, 2nd ed., 2016, Academic Press/Elsevier, 565–640, Chapter: 12.

[84] ZHOU Q., SUN P., KIENHUIS P., DAHLMANN G. *Fifth Intercalibration Round in the framework of Bonn-OSInet.Round Robin 2010 - The comparison of HFO and crude oil samples.* The document can be downloaded at www.bonnagreement.org, section Bonn-OSInet.

[85] STOUT S.A., PAYNE J.R. Chemical composition of floating and sunken in-situ burn residues from the Deepwater Horizon oil spill. *Mar. Pollut. Bull.* 2016, **108** (1-2) pp. 186–202

[86] EPA method 3610B, *Alumina cleanup*. Freely available on the EPA website: https://www.epa.gov

[87] KIENHUIS P., KRAUS U. Seventh Intercalibration in the framework of Bonn-OSInet. Round Robin 2012 - *The comparison of three samples from oil spills with three possible source samples from Nigerian oil fields and first test of the COSIWeb-database system*. The document can be freely downloaded at www.bonnagreement.org, section Bonn-OSInet.

[88] HAN Y., JOHN G.F., CLEMENT T.P. Understanding the thermal degradation patterns of hopane biomarker compounds present in crude oil. *Sci. Total Environ.* 2019, **667** pp. 792–798 https://doi.org/10.1016/j.scitotenv.2019.02.445

[89] KIENHUIS P., DAHLMANN G. *Sixth intercalibration in the framework of Bonn-OSInet. Round Robin 2011* - The comparison of seven HFO samples. RWS-WD document 2012.WGMLO 42xx. The document can be freely downloaded at www.bonnagreement.org, section Bonn-OSInet.

[90] VAN GELDEREN L., POULSEN K.G., CHRISTENSEN J.H., JOMAAS G. Determination of the vaporization order of crude oils through the chemical analysis of crude oil residues burned on water. *Chemosphere*. 2021, **285** p. 131563 https://doi.org/10.1016/j.chemosphere.2021.131563

[91] Daling, P.S., Brandvik, P.J., Mackay, D., and Johansen, Ø. (1990). Characterisation of crude oils for environmental purposes. Oil & Chemical Pollution, 7: 199-224

[92] Mackay, D., Stiver, W., and Tebeau, P.A. (1983). Testing of crude oils and petroleum products of environmental purposes. Proceedings at the 1983 Oil Spill Conference, San Antonio, TX, pp. 331-337

[93] Bacosa H.P., Erdner D. L. , Liu Z. Differentiating the roles of photooxidation and biodegradation in the weathering of Light Louisiana Sweet crude oil in surface water from the Deepwater Horizon site. Mar Pollut Bull 95 (2015) 265-272. https://doi.org/10.1016/j.marpolbul.2015.04.005