

CURRICULUM VITAE



NIBIO

NORWEGIAN INSTITUTE OF
BIOECONOMY RESEARCH

PERSONAL INFORMATION

Full name **Adam Mariusz PARUCH**
Gender Male
Nationality Norwegian
Scientific degree PhD / Doctor Engineer
Present position Research Professor
Affiliation Department of Hydrology and Water Environment, Division of Environment and Natural Resources, NIBIO - Norwegian Institute of Bioeconomy Research, Pb 115, NO-1431 Aas, Norway

CONTACT INFORMATION

Address NIBIO, Oluf Thesens vei 43, 1433 Aas, Norway
Tel mob. +47 924 58 374
E-mail adam.paruch@nibio.no
Webpage <https://nibio.no/en/employees/adam-paruch>
Internet sites <https://app.cristin.no/persons/show.jsf?id=385873>
<http://orcid.org/0000-0003-4392-7239>
https://www.researchgate.net/profile/Adam_Paruch

KEY QUALIFICATIONS

- Ecological engineering specialising in wastewater treatment and water protection measures
- Quality assessment of water (surface, drainage, groundwater and runoff)
- Microbiology of water, wastewater (white-, grey-, black-, brown-, and yellowwater), treatment filter media and compost material
- Faecal water contamination (anthropogenic and zoonotic) originated from various point and nonpoint/diffuse pollution sources
- Microbial/faecal source tracking (*E. coli*, *Bacteroidales* DNA markers, host-specific genetic markers, RT-qPCR)
- Microbial and molecular analyses of viral and bacterial pathogens (gram-negative/-positive bacteria, viruses and parasitic protozoans)
- Natural systems for water and wastewater management and purification
- Sustainability assessment of on-site sanitation systems
- Wastewater reclamation and reuse
- Properties of soils irrigated with wastewater
- Composting of organic wastes including hygienisation of human excreta

EDUCATION

Dates (from – to)	
1996 - 2000	PhD / Dr. Eng. in Environmental Development. Faculty of Environmental Engineering and Geodesy, Agricultural University of Wroclaw (currently, Wroclaw University of Environmental and Life Sciences), Poland.
1995 - 1996	MSc in Land Reclamation and Environmental Protection. Faculty of Environmental Engineering and Geodesy, Agricultural University of Wroclaw (currently, Wroclaw University of Environmental and Life Sciences), Poland.
1991 - 1995	BSc / Eng. in Environmental Engineering. Faculty of Environmental Engineering and Geodesy, Agricultural University of Wroclaw (currently, Wroclaw University of Environmental and Life Sciences), Poland.



WORK EXPERIENCE

Dates (from – to)	2015 onwards	Research Professor, NIBIO - Norwegian Institute of Bioeconomy Research, Aas, Norway
	2010 - 2015	Senior research scientist (Professor's Competence), Bioforsk – Norwegian Institute for Agricultural and Environmental Research, Aas, Norway
	2006 - 2010	Research scientist, Bioforsk, Aas, Norway
	2005 - 2006	Research scientist, Jordforsk – Norwegian Centre for Soil and Environmental Research, Aas, Norway
	2003 - 2005	Guest Researcher, NLH (Agricultural University of Norway) and UMB (Norwegian University of Life Sciences), Department of Mathematical Sciences and Technology, Aas, Norway
	2002 - 2003	Postdoctoral Researcher (PostDoc), NLH – Agricultural University of Norway, Department of Chemistry and Biotechnology, Aas, Norway
	2001 - 2006	Assistant Professor, Agricultural University of Wroclaw, Faculty of Environmental Engineering and Geodesy, Wroclaw, Poland
	1996 - 2000	Ph.D. student, Agricultural University of Wroclaw, Faculty of Environmental Engineering and Geodesy, Wroclaw, Poland
	1996 - 1996	Assistant Lecturer, Agricultural University of Wroclaw, Faculty of Environmental Engineering and Geodesy, Wroclaw, Poland

PERSONAL SKILLS AND COMPETENCES

Languages	- Polish, English and Norwegian. Some Slovak, Czech and Russian
Professional skills and competences	- Independent work: leadership experiences in national and international projects - Team work: good abilities in working with national and international groups - Adjustment: positive collaboration with research groups representing various fields of interest - Communication: good abilities to contact with people representing different cultures, environments and educations - Presentation: oral/panel and poster
Organisational skills and competences	- National and international project applications - Organising conferences and seminars - Co-supervision of Student Scientific Association - Responsibilities for academic lectures
Technical skills and competences	- Performance of microbiological tests (viruses and bacteria) - Operation of laboratory instruments for detection and enumeration of faecal indicator microorganisms
Computer skills and competences	- Programmes: MS Office, Corel, Statistica - Operating systems: Windows
Academic activities - consulting, teaching and knowledge transfer	- Lecturer for BSc and MSc courses at the Agricultural University of Wroclaw (Poland) and the Norwegian University of Life Sciences (Aas, Norway) - Supervisor for BSc and MSc candidates - External reviewer and examiner for MSc and BSc theses
Editorial Board	- Journal of Ecological Engineering - Annals of the Academy of Romanian Scientists - Series on Chemistry

ADDITIONAL INFORMATION

Memberships	- The International Commission on Water Quality (ICWQ) - The Norwegian Society of Graduate Technical and Scientific Professionals (Tekna) - The Norwegian Water Association
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- Honours and awards
- *Sapere auro* - Distinction from the Rector of Wroclaw University of Environmental and Life Sciences
 - Three Diplomas of the Rector of Agricultural University of Wroclaw and Wroclaw University of Environmental and Life Sciences for series of scientific publications
 - Prize of the Rector of Agricultural University of Wroclaw for the Doctoral Thesis
 - Prize of the Dean of the Faculty of Environmental Engineering and Geodesy, Agricultural University of Wroclaw, for The Best MSc

SCIENTIFIC PUBLICATIONS

- 56 peer-reviewed works
- 2 educational books
- 1 academic monograph

LIST OF SCIENTIFIC PUBLICATIONS:

1. Paruch L., Paruch A.M., Eiken H.G., Skogen M., Sørheim R. 2020. Seasonal dynamics of lotic bacterial communities assessed by 16S rRNA gene amplicon deep sequencing. *Scientific Reports*, 10, 16399. <https://doi.org/10.1038/s41598-020-73293-9>
2. Gavriła A-M., Zaharia A., Paruch L., Perrin F.X., Sarbu A., Olaru A.G., Paruch A.M., Iordache T-V. 2020. Molecularly imprinted films and quaternary ammonium-functionalized microparticles working in tandem against pathogenic bacteria in wastewaters. *Journal of Hazardous Materials*, 399, 123026. <https://doi.org/10.1016/j.jhazmat.2020.123026>
3. Vingerhagen R., Paruch A.M., Paruch L., Kvisle V. 2020. Fekalkildesporing i Nitelva, Lillestrøm kommune. Skyldes det mennesker? (Faecal source tracking in Nitelva. Does it originate from humans?). *Vann*, 55(2), 163-170. <http://vannforeningen.no/wp-content/uploads/2020/06/Vingerhagen.pdf>
4. Paruch L., Paruch A.M., Sørheim R. 2020. DNA-based faecal source tracking of contaminated drinking water causing a large *Campylobacter* outbreak in Norway 2019. *International Journal of Hygiene and Environmental Health*, 224, 113420. <https://doi.org/10.1016/j.ijheh.2019.113420>
5. Paruch L., Paruch A.M., Eiken H.G., Sørheim R. 2019. Faecal pollution affects abundance and diversity of aquatic microbial community in anthropo-zoogenically influenced lotic ecosystems. *Scientific Reports*, 9, 19469. <https://doi.org/10.1038/s41598-019-56058-x>
6. Paruch L., Paruch A.M., Eiken H.G., Sørheim R. 2019. Aquatic microbial diversity associated with faecal pollution of Norwegian waterbodies characterized by 16S rRNA gene amplicon deep sequencing. *Microbial Biotechnology*, 12(6), 1487-1491. <https://doi.org/10.1111/1751-7915.13461>
7. Paruch A.M., Mæhlum T., Eltun R., Tapu E., Spinu O. 2019. Green wastewater treatment technology for agritourism business in Romania. *Ecological Engineering*, 138, 133-137. <https://doi.org/10.1016/j.ecoleng.2019.07.005>
8. Orzepowski W., Paruch A.M., Kowalczyk T., Pokładek R., Pulikowski K. 2018. Assessing the applicability of groundwater monitoring data in the modelling of soil water retention characteristics. *Water and Environment Journal*, 33(2), 192-202. <https://doi.org/10.1111/wej.12390>
9. Paruch L., Paruch A.M. 2018. *Contributors to faecal water contamination in urban environments*. Zelenakova M. (eds) Water Management and the Environment: Case Studies. WINEC 2017. Water Science and Technology Library, vol 86. Springer, Cham, pp 215-230. https://doi.org/10.1007/978-3-319-79014-5_10
10. Paruch A.M., Pulikowski K., Bawiec A., Paweska K. 2017. Assessment of groundwater quality in areas irrigated with food industry wastewater: a case of wastewater utilisation from sugar and yeast factories. *Environmental Processes*, 4(4), 799-812. <https://doi.org/10.1007/s40710-017-0274-3>
11. Paruch L., Paruch A.M. 2017. The importance of melting curve analysis in discriminating faecal and environmental *Bacteroidales* bacteria. *Microbiology*, 86(4), 536-538. <https://doi.org/10.1134/S0026261717040117>
12. Paruch L., Paruch A.M., Blankenberg A-G.B., Haarstad K., Mæhlum T. 2017. Norwegian study on microbial source tracking for water quality control and pollution removal in constructed wetland treating catchment run-off. *Water Science and Technology*, 76(5), 1158-1166. <https://doi.org/10.2166/wst.2017.303>
13. Orzepowski W., Paruch A.M., Kowalczyk T., Pokładek R., Pulikowski K. 2017. Modelling of water reserves in mineral soils with different retention properties. *Water and Environment Journal*, 31(3), 388-400. <https://doi.org/10.1111/wej.12255>
14. Krystad R., Paruch A.M., Paruch L., Mæhlum T. 2017. Gjenåpning av byvassdrag: forekomst, kilder og rensing av *E. coli* i Teglverksdammen i Hovinbekken, Oslo (Deculverting of urban watercourses: occurrence, sources and removal of *E. coli* in Teglverksdammen in Hovinbekken, Oslo). *Vann*, 52(4), 373-386. <https://vannforeningen.no/wp-content/uploads/2018/04/Krystad.pdf>
15. Paruch A.M., Mæhlum T., Haarstad K., Blankenberg A-G.B., Hensel G. 2016. *Performance of constructed wetlands treating domestic wastewater in Norway over a quarter of a century – Options for nutrient removal and recycling*. In: Vymazal J. (ed) *Natural and Constructed Wetlands*. Springer International Publishing Switzerland, pp. 41-55. https://doi.org/10.1007/978-3-319-38927-1_3

16. Blankenberg A-G.B., Paruch A.M., Paruch L., Deelstra J., Haarstad K. 2016. *Nutrients tracking and removal in constructed wetlands treating catchment runoff in Norway*. In: Vymazal J. (ed) *Natural and Constructed Wetlands*. Springer International Publishing Switzerland, pp. 23-40. https://doi.org/10.1007/978-3-319-38927-1_2
17. Haarstad K., Hensel G., Paruch A.M., Blankenberg A-G.B. 2016. *Phosphorus recycling from waste, dams and wetlands receiving landfill leachate – Long term monitoring in Norway*. In: Vymazal J. (ed) *Natural and Constructed Wetlands*. Springer International Publishing Switzerland, pp. 141-146. https://doi.org/10.1007/978-3-319-38927-1_11
18. Paruch L., Paruch A.M., Blankenberg A-G.B., Bechmann M., Mæhlum T. 2015. Application of host-specific genetic markers for microbial source tracking of faecal water contamination in an agricultural catchment. *Acta Agriculturae Scandinavica, Section B – Soil & Plant Science*, 65(S2), 164-172. <https://doi.org/10.1080/09064710.2014.941392>
19. Blankenberg A-G., Paruch A.M., Bechmann M., Paruch L. 2015. Betydning av spredt avløp i jordbrukslandskapet (Rural decentralized wastewater treatment systems in agricultural catchments). *Vann*, 50(1), 8-17. https://vannforeningen.no/wp-content/uploads/2015/06/2015_924546.pdf
20. Paruch A.M. Mæhlum T., Robertson L. 2015. Changes in microbial quality of irrigation water under different weather conditions in Southeast Norway. *Environmental Processes*, 2(1), 115-124. <https://doi.org/10.1007/s40710-014-0054-2>
21. Paruch, A.M. 2015. Effects of temperature, storage time and pH on survival of *Escherichia coli* in source-separated yellowwater. *Water and Environment Journal*, 29(1), 98-104. <https://doi.org/10.1111/wej.12105>
22. Blankenberg, A-G.B., Haarstad K, Paruch A.M. 2015. *Agricultural Runoff in Norway: The Problem, the Regulations, and the Role of Wetlands*. In: Vymazal J. (ed) *The Role of Natural and Constructed Wetlands in Nutrient Cycling and Retention on the Landscape*. Springer International Publishing Switzerland, pp. 137-147. https://doi.org/10.1007/978-3-319-08177-9_10
23. Orzepowski W., Paruch A.M., Pulikowski K., Kowalczyk T., Pokladek R. 2014. Quantitative and qualitative assessment of agricultural water resources under variable climatic conditions of Silesian Lowlands (Southwest Poland). *Agricultural Water Management*, 138, 45-54. <https://doi.org/10.1016/j.agwat.2014.02.012>
24. Paruch A.M. 2014. The impact of wastewater irrigation on the chemical quality of groundwater. *Water and Environment Journal*, 28(4), 502-508. <https://doi.org/10.1111/wej.12064>
25. Paruch A.M. 2012. Preservation of nutrients during long-term storage of source-separated yellowwater. *Water Science and Technology*, 66(4), 804-809. <https://doi.org/10.2166/wst.2012.244>
26. Paruch A.M. Mæhlum T. 2012. Specific features of *Escherichia coli* that distinguish it from coliform and thermotolerant coliform bacteria and define it as the most accurate indicator of faecal contamination in the environment. *Ecological Indicators*, 23, 140-142. <https://doi.org/10.1016/j.ecolind.2012.03.026>
27. Blankenberg A-G., Tryland I., Paruch A., Robertson L. 2012. Virkningen av økt nedbør, en følge av klimaendring, på avrenning av tarmbakterier og parasitter fra beiteområder (The effect of heavy rainfall, a consequence of climate change, on runoff of bacteria and parasites from pastures). *Vann* 47(1), 28-38. https://vannforeningen.no/wp-content/uploads/2015/06/2012_847608.pdf
28. Paruch A.M. Mæhlum T., Obarska-Pempkowiak H., Gajewska M., Wojciechowska E., Ostojki A. 2011. Rural domestic wastewater treatment in Norway and Poland: experiences, cooperation and concepts on the improvement of constructed wetland technology. *Water Science and Technology*, 63(4), 776-781. <https://doi.org/10.2166/wst.2011.308>
29. Paruch A.M. 2011. Long-term survival of *Escherichia coli* in lightweight aggregate filter media of constructed wastewater treatment wetlands. *Water Science and Technology*, 63(3), 558-564. <https://doi.org/10.2166/wst.2011.257>
30. Jenssen P.D., Krogstad T., Paruch A.M., Mæhlum T., Adam K., Arias C.A., Heistad A., Jonsson L., Hellström D., Brix H., Yli-Halla M., Vråle L., Valve M. 2010. Filter bed systems treating domestic wastewater in the Nordic countries – Performance and reuse of filter media. *Ecological Engineering*, 36(12), 1651-1659. <https://doi.org/10.1016/j.ecoleng.2010.07.004>
31. Paruch A.M. 2010. Possible scenarios of environmental transport, occurrence and fate of helminth eggs in light weight aggregate wastewater treatment systems. *Reviews in Environmental Science and Biotechnology*, 9(1), 51-58. <https://doi.org/10.1007/s11157-009-9181-z>
32. Heistad A., Seidu R., Fløe A., Paruch A.M., Hanssen J.F., Stenström T. 2009. Long-term hygienic barrier efficiency of a compact on-site wastewater treatment system. *Journal of Environmental Quality*, 38(6), 2182-2188. <https://doi.org/10.2134/jeq2008.0407>
33. Paruch A.M., Roseth R. 2008. Treatment of tunnel wash waters – experiments with organic sorbent materials. Part II: Removal of toxic metals. *Journal of Environmental Sciences*, 20(9), 1042-1045. [https://doi.org/10.1016/S1001-0742\(08\)62147-6](https://doi.org/10.1016/S1001-0742(08)62147-6)
34. Paruch A.M., Roseth R. 2008. Treatment of tunnel wash waters – experiments with organic sorbent materials. Part I: Removal of polycyclic aromatic hydrocarbons and nonpolar oil. *Journal of Environmental Sciences*, 20(8), 964-969. [https://doi.org/10.1016/S1001-0742\(08\)62194-4](https://doi.org/10.1016/S1001-0742(08)62194-4)
35. Paruch A.M., Krogstad T., Jenssen P.D. 2007. Application of used wetland filter media in agriculture - control of heavy metal contents and faecal contamination. *Ecology & Hydrobiology*, 7(3-4), 243-253. [https://doi.org/10.1016/S1642-3593\(07\)70107-6](https://doi.org/10.1016/S1642-3593(07)70107-6)

36. Lindholm O., Greatorex J.M., Paruch A.M. 2007. Comparison of methods for calculation of sustainability indices for alternative sewerage systems – Theoretical and practical considerations. *Ecological Indicators*, 7(1), 71-78. <https://doi.org/10.1016/j.ecolind.2005.10.002>
37. Heistad A., Paruch A.M., Vråle L., Adam K., Jenssen P.D. 2006. A high-performance compact filter system treating domestic wastewater. *Ecological Engineering*, 28(4), 374-379. <https://doi.org/10.1016/j.ecoleng.2006.06.011>
38. Pulikowski K., Kostrzewa S., Paluch J., Paruch A. 2005. Runoff of nitrates (V) from drainage system. *Scientific Papers of the Agricultural University of Krakow*, 420, 57-66.
39. Paluch J., Kostrzewa S., Pulikowski K., Paruch A. 2005. An impact of run-off delayers on adjacent areas. *Scientific Papers of the Agricultural University of Krakow*, 420, 47-55.
40. Pulikowski K., Paluch J., Paruch A., Kostrzewa S. 2005. Time of appearing of maximal concentrations of nitrates in surface waters. *Advances of Agricultural Sciences Problem Issues*, Polish Academy of Sciences, 505, 339-346.
41. Sokalska D., Paruch A., Pulikowski K. 2004. The influence of irrigation with industrial wastewater on the quality of groundwater. *Melioration and Meadow Cultivation News*, 3, 130-133.
42. Kostrzewa S., Paluch J., Paruch A., Pulikowski K. 2003. Regeneration of areas irrigated with municipal sewage. *Acta Scientiarum Polonorum, Formatio Circumiectus*, 2(2), 93-102.
43. Palczyński M., Paluch J., Paruch A., Pulikowski K., Wojtowicz J. 2002. Hydrological aspects of operation of run-off delayers in the small forest catchment area. *Technical Journal*, Z. 5-Ś/2002, Publishing House of Cracow University of Technology, 85-95.
44. Paluch J., Palczyński M., Paruch A., Pulikowski K. 2002. The impact of water flow through run-off delayers on road embankment in the forest. *Technical Journal*, Z. 4-Ś/2002, Publishing House of Cracow University of Technology, 123-132.
45. Paruch A., Palczyński M., Paluch J., Pulikowski K. 2002. Solution for treatment of domestic wastewater from forester's houses. *Technical Journal*, Z. 4-Ś/2002, Publishing House of Cracow University of Technology, 113-122.
46. Paruch A., Paluch J., Pulikowski K., Kostrzewa S. 2002. Preliminary assessment of the impact of soil fertility on the levels of selected macrolelements in drainage runoffs. *Acta Scientiarum Polonorum, Formatio Circumiectus*, 1-2(1-2), 71-83.
47. Pulikowski K., Palczyński M., Paluch J., Paruch A. 2002. The physical and chemical composition of water in the small forest catchment area in Lower Silesia Region. *Technical Journal*, Z. 4-Ś/2002, Publishing House of Cracow University of Technology, 95-104.
48. Kutera J., Paruch A. 2001. The possibilities of *Lemna (Lemna minor)* use in processes of domestic wastewater treatment. *Advances of Agricultural Sciences Problem Issues*, Polish Academy of Sciences, 475, 155-162.
49. Paluch J., Paruch A., Pulikowski K., Palczyński M., Wojtowicz J. 2001. Preliminary estimation of effective use of retention of small catchment areas for flood protection. *Electronic Journal of Polish Agricultural Universities*, Series Environmental Development, vol. 4(2). <http://www.ejpau.media.pl/volume4/issue2/environment/art-04.html>
50. Paluch J., Pulikowski K., Paruch A., Kostrzewa S. 2001. Hydrological conditions of small agricultural catchments irrigated with Wrocław sewage. *Advances of Agricultural Sciences Problem Issues*, Polish Academy of Sciences, 475, 49-59.
51. Paruch A. 2001. The influence of irrigation with yeast wastewater on the selected properties of soil and water purity. *Scientific Papers of the Agricultural University of Wrocław – XLII*, 417, 81-103.
52. Paruch A., Paluch J., Pulikowski K. 2001. Chemical composition of drainage runoffs from objects situated in southwest Poland. *Scientific Papers of the Agricultural University of Krakow*, 21, 49-56.
53. Paruch A., Pulikowski K., Paluch J., Kostrzewa S. 2001. Chemical composition of ground waters on the objects irrigated with industrial wastewater. *Advances of Agricultural Sciences Problem Issues*, Polish Academy of Sciences, 475, 225-234.
54. Pulikowski K., Kostrzewa S., Paluch J., Paruch A. 2001. Pollutant runoff from agricultural microcatchment situated on the Sudety mountains foreland. *Advances of Agricultural Sciences Problem Issues*, Polish Academy of Sciences, 475, 489-496.
55. Czyżyk F., Paruch A. 1999. Heavy metals in soils of fields irrigated with wastes of yeast industry. *Folia Universitatis Agriculturae Stetinensis – Agricultura*, 195(74), 51-56.
56. Czyżyk F., Paruch A. 1999. Some chemical properties of soils on fields of agricultural utilisation of yeast wastes. *Annals of the Agricultural University of Poznań - CCCX*, 20(1), 7-17.

PROFESSIONAL PAPERS, FEATURE ARTICLES AND BROCHURES:

1. Paruch A.M. Paruch L., Mæhlum T. 2017. Kildesporing av fekal vannforurensing med molekylærbiologiske metoder – eksempler på undersøkelser i Norge (Source tracking of faecal water contamination by molecular biology methods – examples of surveys in Norway). *Vannspeilet* 2-2017, 4-5. <https://www.norskvann.no/kompetanse/norsk-vann-bulletin>
2. Paruch A.M. Paruch L., Mæhlum T. 2014. Implementering av molekylærbiologiske metoder for kildesporing av fekal vannforurensing og vurdering av helsefare (Implementation of molecular methods for faecal source tracking of water contamination and evaluation of health risk). *Bioforsk TEMA* 9(19), 4 pp. [http://www.bioforsk.no/ikbViewer/Content/109843/Bioforsk%20TEMA%209%20\(19\).pdf](http://www.bioforsk.no/ikbViewer/Content/109843/Bioforsk%20TEMA%209%20(19).pdf)
3. Blankenberg A-G., Bechmann M., Paruch L., Paruch A. 2014. Spredt avløp I jordbrukslandskapet (Decentralised wastewater treatment systems in agricultural landscape). *Bioforsk TEMA* 9(12), 4pp. http://www.bioforsk.no/ikbViewer/Content/109416/TEMA_vol9_nr12_2014_Spredt_avlop.pdf

4. Paruch A., Mæhlum T. 2011. Fekale indikatorbakterier (Faecal indicator bacteria). *Kommunalteknikk* (9), 44-47. <http://bioweb07.bioforsk.no/Artikler/Fekale%20indikatorbakterier.pdf>
5. Paruch A., Mæhlum T. 2011. *E. coli* i avføring – er det farlig? (Defecated *E. coli* – is it dangerous?). *Nationen – Debatt* (135), p. 26.
6. Søvik A. K., Ådam K., Paruch A. M. 2007. Fosforfjerning i filterbedanlegg og konstruerte våtmarker – erfaringer fra laboratorieforsøk og feltmålinger (Phosphorus removal in filter bed systems and constructed wetlands - experiences from laboratory experiments and field measurements). *Bioforsk FOKUS* 2(15), 6pp. <http://hdl.handle.net/11250/2486327>

MONOGRAPHS:

1. Paluch J., Palczyński M., Paruch A., Pulikowski K. 2005. Retention increment and water quality improvement by using run-off delayer. *Monograph XLVII*, Publishing House of the Agricultural University of Wrocław, ISBN 83-89189-82-8, 68 pp.

BOOKS:

1. Paluch J., Paruch A., Pulikowski K. 2006. Environmental utilisation of wastewater and sludge. *Educational Books of the Agricultural University of Wrocław*, Publishing House of the Agricultural University of Wrocław, ISBN 83-89189-96-8.
2. Paluch J., Paruch A., Pulikowski K. 2003. Design of selected elements of wastewater treatment plant, its development and management. In: *Academic handbook for Environmental Engineering* (L. Plywaczyk, Ed.), Publishing House of the Agricultural University of Wrocław, ISBN 83-87866-89-X, 89-133.

PROCEEDINGS:

1. Paruch A. M., Krogstad T., Jenssen P. D. 2005. Reuse of wetland filter media – content of heavy metals and indicator microorganisms. In: *Wastewater treatment in wetlands – theoretical and practical aspects* (H. Obarska-Pempkowiak, Ed.). Proceedings of the International Conference, Ecological Education Center in Starbienino, Poland, 145-158.
2. Heistad A., Vråle L., Paruch A. M., Adam K., Jenssen P. D. 2005. A high performance compact wastewater treatment system using lightweight aggregate In: *Nutrient Management in Wastewater Treatment Processes and Recycle Streams*. Proceedings of IWA Specialized International Conference, Krakow, Poland, 959-966.
3. Heistad A., Vråle L., Paruch A. M., Adam K., Jenssen P. D. 2004. From constructed wetlands to compact filter systems. In: *Wetland Systems*. Proceedings of 9th International Conference on Wetland Systems for Water Pollution Control, vol. 2, IWA, Avignon, France, 759-767.
4. Paluch J., Paruch A., Pulikowski K. 2003. Treatment of domestic sewage from forester's houses. In: *Hydro-presentations VI*. Proceedings of National Symposium on Water Protection, Water Management, Water supply and Wastewater Discharge, NOT Katowice, Poland, 200-219.
5. Czyżyk F., Paruch A. 2000. Some chemical properties of drainage water from fields of agricultural utilisation of yeast wastes. In: *Land Reclamation and Landscape Management*. Proceedings of International Conference, Kaunas-Akademija, Lithuania, 25-28.
6. Adynkiewicz-Piragas M., Paruch A. 1997/98. Methodology of examinations of water conditions in the riverside forests of the Odra polder of Olawa-Lipki. In: *Diagnosing the state of the environment. Research methods – forecasts*. Proceedings of 5th National Conference on Comprehensive Research and Protection of the Natural Environment, Agricultural University of Bydgoszcz, HABITAT Bydgoszcz, Poland, 30-37.

BOOKS OF ABSTRACTS:

1. Blankenberg A-G., Paruch L., Paruch A.M., Haarstad K., Deelstra J. 2015. Nutrients tracking and removal in constructed wetland treating catchment runoff in Norway. Book of the 9th International Workshop on Nutrients Cycling and Retention in Natural and Constructed Wetlands, Trebon, the Czech Republic, 7-9.
2. Haarstad K., Hensel G., Paruch A.M., Blankenberg A-G. 2015. Phosphorus (P) in waste, dams and wetlands receiving landfill leachate – long term monitoring in Norway. Book of the 9th International Workshop on Nutrients Cycling and Retention in Natural and Constructed Wetlands, Trebon, the Czech Republic, 30-34.
3. Paruch A.M., Mæhlum T., Hensel G., Haarstad K., Blankenberg A-G. 2015. A quarter century performance of constructed wetlands in Norway – options for nutrients removal and recycling. Book of the 9th International Workshop on Nutrients Cycling and Retention in Natural and Constructed Wetlands, Trebon, the Czech Republic, 55-58.
4. Paruch A.M. 2012. Faecal contamination with *Escherichia coli* in yellowwater intended for agricultural utilisation. In: *Wastewater Purification and Reuse*. Book of Abstracts of the IWA Regional Conference on Wastewater Purification & Reuse 2012, Heraklion, Crete, Greece, p. 145.
5. Blankenberg A-G., Paruch A., Tryland I., Robertson L. 2012. Will climate change affect the runoff of bacteria and parasites from pastures? *Bioforsk FOKUS* 7(2), 253-255.
6. Paruch A.M. 2010. Survival of *Escherichia coli* in Filtralite-P media from constructed wetland treating domestic wastewater in Norway. In: *"New Challenges for constructed wetland systems"*. Book of the International Seminar. Gdansk, Poland, p. 28.

7. Paruch A.M. 2010. The impact of wastewater irrigation on the chemical quality of groundwater. In: *Organic resources in the carbon economy*. Book of the 7th International Conference ORBIT 2010, Heraklion, Crete, Greece, p. 273.
8. Paruch A.M. 2009. Survival of *Escherichia coli* in filter media of constructed wetlands treating domestic wastewater in Norway. In: *Ecology of Pathogenic Escherichia coli*. Book of the 4th International Conference of the Pathogenic *Escherichia coli* Network (PEN), Oslo, Norway, p. 88.

REPORTS:

1. Paruch A.M., Paruch L. 2019. Kildesporing av fekal vannforurensning i området rundt Hunnebunn, Fredrikstad kommune: Fekale forurensningskilder i Vispen badeplass og noen bekker rundt Hunnebunn. NIBIO Rapport 5/125, 40 pp.
2. Haaland S., Bechmann M., Eikebrokk B., Eregno F., Greipslund I., Heistad A., Paruch A., Paruch L., Riise G., Rohrlack T., Turtumøygard S. 2018. Forurensingsanalyse av drikkevannskilden Jordalsvatnet med vanntilsigsområde. NIBIO Rapport 4/120, 86 pp.
3. Tryland I., Mæhlum T., Wennberg A.C., Paruch A.M., Krystad R., Paruch L., Ranneklev S., Fosholt Moe T., Haande S., Myrmel M., Robertson L., Fergus T., Beschorner A-L., Kvitsjøen J. 2017. Tiltak for å oppnå bedre hygienisk vannkvalitet til rekreasjonsformål i overvann og byvassdrag - forprosjekt for å identifisere forskningsbehov (Measures to achieve better hygienic water quality for recreational purposes in urban waterways - pre-project to identify research needs). NIVA-rapport 7190-2017, ISSN 1894-7948, ISBN 978-82-577-577-6925-3, 75 pp.
4. Paruch A.M., Paruch L., Mæhlum T. 2017. Kildesporing av fekal vannforurensning med molekylærbiologiske metoder – Eksempler på undersøkelser i Norge (Source tracking of fecal water contamination by molecular biology methods – Examples of surveys in Norway). NIBIO Rapport 3/66, 70 pp.
5. Paruch A.M., Paruch L., Mæhlum T. 2016. Kildesporing av fekal vannforurensning i Jordalsvatnet med nedbørfelt (Source tracking of fecal water contamination in the catchment of Jordalsvatnet lake). NIBIO Rapport 2/49, 42 pp.
6. Paruch A.M., Paruch L., Mæhlum T. 2016. Kildesporing av fekal vannforurensning i tilløpsbekkene til Jonsvannet (Source tracking of fecal water contamination in tributaries of Jonsvannet lake). NIBIO Rapport 2/34, 60 pp.
7. Paruch A.M., Paruch L., Mæhlum T. 2016. Kildesporing av fekal vannforurensning i noen av tilløpsbekkene til Maridalsvannet og utløp Akerselva (Source tracking of fecal water contamination in some tributaries of the Maridal lake and the mouth of the Aker river). NIBIO Rapport 2/27, 25 pp.
8. Hauge A., Jøner E., Paruch A. 2015. Plan for utbedring av Langerudbekkens rensepark (A plan for improving Langerudbekkens treatment park). NIBIO Rapport 1/13, 27 pp.
9. Paruch A.M., Mæhlum T., Eltun R. 2015. Implementation of the Norwegian technology of nature-based wastewater treatment systems in Romania: Management of domestic wastewater from two rural tourism facilities in Mara and Vadu Izei. Bioforsk Report 10(48), 49 pp.
10. Blankenberg A-G., Bechmann M., Turtumøygard S., Paruch A., Paruch L. 2014. Spredt avløp i jordbrukslandskapet. Tilførsel av fosfor og *E. coli* i jordbruksbekker (Decentralised wastewater treatment systems in agricultural landscape. Inputs of phosphorus and *E. coli* to agricultural streams). Bioforsk Report 9(6), 22 pp.
11. Lakshmanan, A., Geethalakshmi, V., Ilangovan, R., Paruch, A.M., Blankenberg, A-G.B., Nagothu, U.S. 2014. Feasibility Report: Establishing pilot plant to treat composite effluent in the Kalingarayan basin, Erode, Tamil Nadu, India. Bioforsk Report 9(163), 47 pp.
12. Paruch, L., Paruch, A., Blankenberg, A-G.B., Bechmann, M. & Mæhlum, T. 2014. Application of host-specific genetic markers for microbial source tracking of faecal water contamination in agricultural catchment. NJF Report 10(3), 43-44.
13. Paruch A.M., Mæhlum T., Frantzen B., Brodersen C. 2013. Toilet options for on-site sanitation in Barents Russia. Bioforsk Report 8(10), 27 pp.
14. Paruch A.M., Borch H., Mæhlum T. 2012. Opinion on wastewater treatment options for remote settlements in Kenozero National Park (NW Russia). Bioforsk Report 7(19), 19 pp.
15. Hanserud O.S., Jenssen P.D., Paruch A.M. 2009. Forprosjekt for kretslopsbaserte avløpsløsninger ved Tingvoll gard. Et vindu mot bærekraftig avløpsteknologi (Pilot project for recirculation technologies of wastewater at Tingvoll yard. A window toward sustainable wastewater technology). Bioforsk Report 4(96), 30 pp.
16. Mæhlum T., Jenssen P.D., Paruch A.M., Hanserud O.S. 2009. On-site wastewater systems at Wilson's beach estates, Gull Lake, Alberta, Canada. A review of some Norwegian treatment systems. Bioforsk Report 4(93), 38 pp.
17. Paruch A.M., Mæhlum T. 2009. Implementation of Norwegian technology for on-site systems treating wastewater from rural households in Poland: Design principles of pre-filters for domestic wastewater treatment. Bioforsk Report 4(70), 17 pp.
18. Mæhlum T., Paruch A.M., Lindholm O. 2008. Bærekraftige VA-løsninger i Nesodden kommune. Eksempler fra Blylaget og Bomannsvik (Sustainable solutions for water and wastewater management in Nesodden municipality. Exsamples from Blylaget and Bomannsvik). Bioforsk Report 3(92), 36 pp.
19. Paruch A.M., Haarstad K., Mæhlum T., Køhler J.C., Borch H. 2007. Small-scale wastewater treatment solutions for remote settlements - Kenozero National Park in NW Russia. Bioforsk Report 2(107), 56 pp.
20. Haarstad K., Paruch A.M., Mæhlum T. 2007. Assessment of decentralised wastewater sanitation with focus on Kenozero National Park in NW Russia. Bioforsk Report 2(49), 32 pp.

21. Paruch A.M. 2007. Reuse of Filtralite from filter bed systems – hygienic aspects: An assessment of the probability of presence of infective parasite eggs in used Filtralite®P from filter beds and used Filtralite® NR/NC from pre-filters. Bioforsk Report 2(15), 18 pp.
22. Roseth R., Paruch A.M., Aasen R. 2007. Utpøving av rensefilter for behandling av vaskevann fra vegtunneler (Testing of treatment filters for wash waters from road tunnels). The Norwegian Public Roads Administration. Report UTB 2007/01, 24 pp.
23. Paruch A.M., Roseth R., Aasen R. 2006. Test of filter media for treatment of wash water from road tunnels. Bioforsk Report 1(37), 32 pp.
24. Paruch A., Krogstad T., Jenssen P.D., Stensen G. 2005. Heavy metals accumulation and hygienic indication in subsurface flow constructed wetlands. Norwegian University of Life Sciences. IMT, IPM – UMB Report, 20 pp.
25. Heistad A., Hanssen J.F., Paruch A. 2004. Analysis of chemical media added to a water closet flush tank. Agricultural University of Norway. IMT – NLH Report, 10 pp.
26. Paruch A., Pulikowski K. 2003. Analysis of chemical composition of sugar wastewater used for irrigation practices in 2002/2003 season. Agricultural University of Wrocław. IKOS - AR Report, 9 pp.
27. Hanssen J., F., Paruch A. 2002. Utpøving av komposteringsreaktor fra NOPRO Notodden AS (Testing a composting reactor for NOPRO Notodden AS Company). Department of Chemistry and Biotechnology, Agricultural University of Norway. IKB - NLH Report, 16 pp.
28. Paluch J., Paruch A., Pulikowski K., Szewrański S. 2001. Domestic wastewater treatment plant in Jary Forestry, Forest Division of Oborniki Śląskie, Lower Silesia voivodeship. Agricultural University of Wrocław. IKOS - AR Report.
29. Czyżyk F., Paruch A., Kuczevska M. 2000. Examination of pollutants in water environment on the object of agricultural utilisation of wastes from Silesian Yeast Factory in Wolczyn. Institute for Land Reclamation and Grassland Farming in Wrocław. IMUZ Report.
30. Czyżyk F., Talik B., Paruch A. 1998. Examination of soils irrigated with wastewater from Silesian Yeast Factory in Wolczyn. Institute for Land Reclamation and Grassland Farming in Wrocław. IMUZ Report.

CONFERENCES, SEMINARS AND WORKSHOPS – PARTICIPATIONS WITH PANEL OR POSTER PRESENTATIONS:

1. Norwegian Water Workshop (Norsk Vann Fagtreff). Gardermoen, Oslo, 24-25 October 2017. Oral presentation: *“Kildesporing av fekal vannforurensning med molekylærbiologisk metode”*.
2. National Conference of the Norwegian Society of Graduate Technical and Scientific Professionals (Tekna) “Water Supply Days 2017 (Vannforsyningsdagene 2017)”. Larvik (Norway), 30-31 May 2017. Oral presentation: *“Sporing av forurensninger i drikkevannskilder. Vannkildene for Oslo, Trondheim, Bergen og Oppegård (Tracking of contamination in drinking water sources. Water sources for Oslo, Trondheim, Bergen and Oppegård)”*.
3. IWA International Conference “Wetlands Systems for Water Pollution Control”. Gdansk, Poland, 4-9 September 2016. Oral presentation: *“Norwegian study on microbial source tracking for water quality control and pollution removal in constructed wetland treating catchment run-off”*.
4. National Conference “Small wastewater treatment systems – major challenges”, Aas (Norway), 24-25 May 2014. Oral presentation: *“Source tracking – what is the cause of faecal contamination?”*
5. National Conference of the Norwegian Society of Graduate Technical and Scientific Professionals (Tekna) “How to ensure good water quality to the consumer? Treats and solutions (Hvordan sikre god vannkvalitet helt frem til forbruker? Trusler og løsninger)”. Trondheim (Norway), 7-8 January 2016. Oral presentation: *“Kildesporing av fekal vannforurensning. Resultater fra Bergen og Trondheim (Source tracking of faecal water pollution. Results from Bergen and Trondheim)”*.
6. National Workshop of Norwegian Water Association (Norsk vannforening) “Sources of water pollution (Forurensningskilder og fordeling)”. Oslo (Norway), 12 October 2015. Oral presentation: *“Mikrobiell kildesporing av fekal vannforurensning sammen med deteksjon av legemidler og personlig pleieprodukter (Microbial source tracking of faecal water pollution and detection of pharmaceuticals and personal care products)”*.
7. International Workshop “Nutrients Cycling and Retention in Natural and Constructed Wetlands”. Trebon (the Czech Republic), 26-29 March 2015. Oral presentation: *“A quarter century performance of constructed wetlands in Norway – options for nutrients removal and recycling”*.
8. National Conference “Small wastewater treatment systems – major challenges”, Aas (Norway), 13-14 May 2014. Oral presentation: *“Source tracking of hygienic parameters”*.
9. National Conference “Small wastewater treatment systems – major challenges”, Aas (Norway), 25-26 April 2012. Oral presentation: *“What research has been done on different hygienic parameters? What is planned further?”*
10. IWA Regional Conference “Wastewater Purification & Reuse 2012”. Heraklion, Crete (Greece), 28-30 March 2012. Oral presentation: *“Faecal contamination with Escherichia coli in yellowwater intended for agricultural utilization”*.
11. Seminar “Water and Pathogens”. Veterinary Institute in Oslo (Norway), 19 March 2012. Oral presentation: *“The effect of heavy rainfall on runoff of bacteria and parasites from pastures”*.
12. Seminar “Nordic Biochar Seminar”. Norwegian Agricultural Authority in Oslo (Norway), 9-10 November 2011. Poster presentation: *“Using biochar to recycle nutrients from human urine back to agriculture”*.
13. Closing conference of the project “Innovative solutions for wastewater management in rural areas”. Gutow Maly (Poland), 28 April 2011. Oral presentation: *“Norwegian technologies for decentralised wastewater treatment systems”*.

14. International Seminar "New Challenges for constructed wetland systems". Gdansk University of Technology (Poland), 30-31 August 2010. Oral presentation: "*Survival of Escherichia coli in Filtralite-P media from constructed wetland treating domestic wastewater in Norway*".
15. International Conference "ORBIT 2010 - Organic resources in the carbon economy". Heraklion, Crete (Greece), 29 June – 03 July 2010. Oral presentation: "*The impact of wastewater irrigation on the chemical quality of groundwater*".
16. Opening Conference of the project "Agricultural utilization of tertiary treated wastewater as an alternative water resource". Heraklion, Crete (Greece), 15 December 2009. Oral presentation: "*Norwegian experiences on wastewater reuse*".
17. International Conference "The Ecology of Pathogenic *Escherichia coli*". Oslo (Norway), 5-6 March 2009. Poster presentation: "*Survival of Escherichia coli in filter media of constructed wetlands treating domestic wastewater in Norway*".
18. Opening Conference of the project "Innovative solutions for wastewater management in rural areas". Gdynia (Poland), 24 October 2008. Oral presentation: "*Wastewater treatment in rural areas of Norway*".
19. National Conference "Mobility of doctoral students and young researchers within the European Higher Education Area". Warsaw (Poland), 15 October 2008. Oral presentation: "*Internship - challenges and chances for young researchers in Norway*".
20. Capacity Building and Workshop Week in Environmental Monitoring of Agricultural Dominated Catchments – "Monitoring and assessment of nutrient losses from agricultural dominated catchments". Aas (Norway), 28 August – 01 September 2006. Oral presentation: "*Point source pollution in catchment runoff*".
21. International Seminar on Development of Solid Waste Management System - "International Network Building in Waste Management in Barents Region". Archangelsk (Russia), 01 Jun 2006. Oral presentation: "*Wastewater from landfills in the Arctic – occurrence, monitoring and treatment, Norwegian perspective*".
22. IWA Specialized International Conference "Nutrient Management in Wastewater Treatment Processes and Recycle Streams". Krakow (Poland), 19-21 September 2005. Oral presentation of paper: "*A high performance compact wastewater treatment system using lightweight aggregate*".
23. Research Seminar at the Department of Chemistry and Biotechnology, Agricultural University of Norway (NLH) in Aas (Norway), 23 May 2003. Poster presentation: "*Advanced technology with a simple operating system for composting various organic materials*".
24. International Scientific Conference ENVIRO 2001 "Environmental protection in aspect of sustainable development of rural areas". Agricultural University of Krakow. Nitre – Krakow (Poland), 15-16 November 2001. Oral presentation of paper: "*Chemical composition of drainage runoffs out of objects situated in south-west Poland*".
25. Scientific Conference "Disposal and recycling of liquid and solid wastes in the environment with particular attention on protection of water in rural areas". Agricultural University of Wroclaw, Wroclaw – Kudowa Zdroj (Poland), 19-21 September 2001. Oral presentation of paper: "*Chemical composition of ground waters on the objects irrigated with industrial wastewater*".
26. Scientific Conference "Environmental management of sewage and sludge e". Agricultural University of Szczecin, Szczecin – Lukecin (Poland), 31 August – 02 September 1999. Oral presentation of paper: "*Heavy metals in soils of fields irrigated with wastes of yeast industry*".
27. Scientific Conference "Protection of Tucholski Coniferous Forests – Diagnosing of the environmental level, research methods, forecasts". Agricultural University of Bydgoszcz, Bydgoszcz – Tleń (Poland), 27-28 November 1997. Oral presentation of paper: "*Methodology of examinations of water conditions in the riverside forests of the Odra river polder Olawa-Lipki*".

PROJECT ADMINISTRATION, COORDINATION, MANAGEMENT AND PARTICIPATION WITH TASK RESPONSIBILITIES:

- INTERNATIONAL PROJECTS:

1. 2020-2023. "*BIOSHELL – Recycling crustaceans shell wastes for developing biodegradable wastewater cleaning composites*". ERA-NET BlueBio Cofund, EU's Horizon 2020 research and innovation programme under grant agreement no. 817992 (Project consortium from Romania, Portugal and Norway (A.M. Paruch – key scientist/WP leader).
2. 2017-2020. "*Bactericidal hybrid surfaces against Gram-negative and Gram-positive pathogenic bacteria: Smart Tools for Wastewater Purification*". Project under the M-Era.Net (an EU funded network) with consortium from Romania and Norway (A.M. Paruch – leader of the project in Norway).
3. 2014-2017. "*AQUARIUS: Assessing water quality improvement options concerning nutrient and pharmaceutical contaminants in rural watersheds*". Project funded under the EEA/Norwegian Financial Mechanism (Project in the Czech Republic, A.M. Paruch – leader of the Norwegian group).
4. 2014-2016. "*Greening the agro-tourism business in Romania*". Project funded under the EEA/Norway Grants through Innovation Norway (Project in Romania, A.M. Paruch – responsible for implementing Norwegian nature-based treatment technology in rural Romania).
5. 2013-2014. "*ClimaAdapt*". Project supported by the Ministry of Foreign Affairs, Norway, through the Royal Norwegian Embassy, New Delhi (Project in India, A.M. Paruch – responsible for assessing the feasibility of establishing a pilot plant/system for treating polluted water in Tamil Nadu).
6. 2009-2012. "*Agricultural utilization of tertiary treated wastewater as an alternative water resource*". Project funded under the EEA Financial Mechanism (Project in Greece, A.M. Paruch – responsible for research tasks in Norway).

7. 2008-2011. "NORWET - Innovative solutions for wastewater management in rural areas". Project funded under the EEA/Norwegian Financial Mechanism (Project in Poland, A.M. Paruch – leader of the Norwegian group).
8. 2007-2009. "An implementation of Norwegian environmental technologies for construction of on-site wastewater treatment systems in Slovenia". Project supported through the Slovenian-Norwegian Bilateral Scientific and Technological Cooperation (Project in Slovenia, A.M. Paruch – leader of the Norwegian group).
9. 2007-2009. "Microbial risk assessment and quality control of irrigation water". Project supported through the Slovenian-Norwegian Bilateral Scientific and Technological Cooperation (Project in Slovenia, A.M. Paruch – leader of the Norwegian group).
10. 2007. "Small-scale wastewater treatment solution for remote settlements – Kenozero". Project financed out of the Barents Hot Spots Facility (Project in Russia, A.M. Paruch – leader of the Norwegian group).

- NATIONAL PROJECTS:

11. 2017. "Pollution analysis of the drinking water source Jordalsvatnet with drainage basin, Bergen municipality, NOR 037-2017" (Forurensningsanalyse av drikkevannskilden Jordalsvatnet med vanntilsigsområde, Bergen kommune, NOR 037-2017). Research project supported by Bergen municipality (A.M. Paruch – leader of WP 3. Sykdomsfremkallende mikroorganismer – Pathogenic microorganisms).
12. 2015. "Source tracking of fecal water contamination in the catchment of Jordalsvatnet lake" (Kildesporing av fekal vannforurensing i nedbørfelt av Jordalsvatnet). Research project supported by Bergen municipality (A.M. Paruch – leader of the project).
13. 2015. "Source tracking of fecal water contamination in tributaries of Jonsvannet lake" (Kildesporing av fekal vannforurensing i tilløpsbekkene til Jonsvannet). Research project supported by Trondheim municipality (A.M. Paruch – leader of the project).
14. 2014-2015. "Source tracking of fecal water contamination in some tributaries of the Maridal lake and the mouth of the Aker river" (Kildesporing av fekal vannforurensing i noen av tilløpsbekkene til Maridalsvannet og utløp Akerselva). Research project supported by Oslo municipality (A.M. Paruch – leader of the project).
15. 2006-2010. "Recycling organic waste – effects on soil quality, plant nutrient supply and environmental impact". Strategic Institute Plan (SIP). Research project supported by the Research Council of Norway (A.M. Paruch – leader of WP 2. "Ecological sanitation – recycling of resources in wastewater").
16. 2008. "Sustainable solutions for wastewater treatment in Nesodden municipality". Municipal project (A.M. Paruch – project participant).
17. 2006-2007. "Reuse of Filtralite from filter bed systems". Company project - maxit Group AB (A.M. Paruch – leader of the project).
18. 2005-2006. "Testing filter media for treatment of wash water from road tunnels". Project for the Norwegian Public Roads Administration (A.M. Paruch – project participant).
19. 2003-2005. "Organic Waste Products and Recycling of Resources: ORIO II" (A.M. Paruch – contractor at the Norwegian University of Life Sciences – UMB, Department of Mathematical Sciences and Technology - IMT).
20. 2002-2003. "Testing of composting reactor for NOPRO Notodden AS Company". R&D project for NOPRO Notodden AS Company (A.M. Paruch – participant in the project activities performed at the Agricultural University of Norway – NLH, Department of Chemistry and Biotechnology – IKB).