CV

Gert Petersen

Title:	Chief Process Engineer (R & D Process)
Year of birth:	1954
Employed in EnviDan:	since 2000, after 2014 as a process consultant
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Profile

Gert Petersen has 37 years of working experience within the field of environmental biotechnology.

He is involved in the process of design of full scale industrial or municipal wastewater treatment plants for the biological removal of nitrogen and phosphorus and full scale plants for anaerobic biological conversion of municipal, industrial or agricultural organic residues as well as research & development within these areas.

He is involved in technical marketing of leading edge process technology and in technical education of staff from companies involved in environmental projects abroad.

He is organising advanced education programmes for WWTP managers and technical process operators in Denmark and abroad.

The education involves all the technologies within the fields of biological and chemical treatment processes of water, wastewater and biological sludge.

Key competencies

Environmental biotechnology, process design, automated process control, industrial and municipal wastewater treatment plants, technical marketing and advanced education programmes.

EnviDan

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Education

	M.Sc. in Chemical Engineering within the Bio Sector, 1978, at the Technical University of Denmark

Previous employment

2016 -	Chief Process Engineer at Gert P Holding
2014 to 2016	Chief Process Consultant for the EnviDan Group
2000 to 2014	EnviDan, share holder, Senior Chief Process Engineer
1984 to 2000:	Krüger A/S, Technical Division (R&D), Senior Process Engineer
1980 to 1984:	The Technological Institute, Copenhagen, Dept. of Chemical Technology, Project Engineer
1978 to1980:	Laboratory of Sanitary Engineering, Technical University of Copenhagen (DTU). Project Engineering for The National Association of Local Authorities in Denmark

Selected reference projects

2013	Spildevandscenter Avedøre A/S	Future proces- and energy optimization projects.
2012	Vordingborg WWTP	Proposal for extension of the biological capacity
2010	SK Forsyning Slagelse WWTP	Detailed project for energy optimization and extension of the biological capacity using the ARP technology 2010
2006 to 2009	Aktor/Athina Greece	Advisor for the greek Joint Venture AKTOR/ATHINA of the GLINA wastewater treatment plant (Phase 1 and 2: 1,8 mio.PE) for the Greater Bucharest area, Romania, on the upgrade of the plant for biological nitrogen and phosphorus removal, 2006 - 2008. In this upgrade an EnviDan developed process concept has been chosen. This is done using the ARP concept for increased organic and hydraulic capacity in existing plant volumes and adding side stream sludge hydrolysis for the generation of biological phosphorus removal
2006 to 2007	KUBOTA	Involved in the assessment of the MBR technology for wastewater treatment and for the production of technical water at WWTP using MBR units from KUBOTA
2004 to 2009	PSYTTALIA WWTP, Greece	Advisor for the Joint Venture of the PSYTTALIA wastewater treatment plant (6 mio.PE) for the Greater Athens area, Greece, on process automation and biological N and P removal, 2004-2007

2005 Swedish Lunds Technical University	Advisor and invited lecturer for the Swedish Lunds Technical University (LTU) on an advanced wastewater courses for the Beijing Drainage Group in Beijing (Operator of the 6 largest WWTP in the Metropolitan Beijing Area), 2005.
2003 to 2004 WWTP in Novgorod, Russia	Process subcontractor for the RAMBOLL Group, 2003-2004, on the design and upgrade of several wastewater treatment plants in Novgorod, Russia.
2000 to present Various countries	The EnviDan Group works primarily in Denmark, but acts as process subcontractors for several major Danish and foreign companies on wastewater treatment plant design and operation. Process subcontractor for the PER AARSLEFF Group on the process design of wastewater treatment plants in China (MAOMING), Thailand, Tunesia, the Slovak Republic, Romania, Ukraine, the Dominican Republic, Latvia and Lithuania.
1995 to present	Senior Process Quality Control Engineer on process design for wastewater treatment plants.
1987 to present	Technical education of process operators on advanced wastewater treatment and sludge handling and processing. Education of the technical operational staffs working at Danish WWTP through the education programme conducted at the Danish Freshwater Centre in Silkeborg, Denmark. This programme includes the participation in the modules concerning Advanced biological wastewater treatment (biological nitrogen and phosphorus removal), biological sludge processing and benchmanking of nutrient removal plants (key figures for the biological processes).
1993 to present	Development and execution of an advanced education programme for wastewater treatment plant managers of Danish WWTP. The programme is mandatory for all wastewater treatment plant managers in Denmark and it covers fundamentals of the environmental legislation, managing skills and an extensive technical process module.

The education programme ends up in a controlled test that has to be passed to obtain a license as a wastewater treatment plant manager in Denmark.

Regular guest teacher at the Danish Technical University, Department of Environment and Resources, as well as regular censorships at the same department.

Advisor on students projects at the Danish Tecnical University, Department of Environment and Resources as well as advisor for a PH.D. project at the Technical University of Lund, Sweden on Biological P Removal projects.

Educational modules on the basics in various sludge hydrolysis processes and the use of process key data as a way of process optimisation has been developed during the period 2001-2004.

1984 to 2000

Research projects in the R&D department of Krüger, especially concerning biological removal of phosphorus and nitrogen in wastewater and also involved in research projects concerning anaerobic conversion processes for wastewater, sludge and organic waste such as energy optimisation in wastewater treatment, biological sludge hydrolysis and energy production from sludge and organic waste.

Senior Process Engineer for full scale municipal and industrial wastewater treatment plant design in Denmark, Sweden, Holland, Belgium, France, Spain, Greece, Poland, Croatia, Egypt, Ethiopia, Peru, Thailand, China, and Australia.

Senior Process Engineer on combined anaerobic and aerobic treatment of brewery wastewater for the Danbrew Group in Thailand (Phase 1 at the Kamphangphet Brewery, Phase 1 at the Bang Ban brewery) and in China (Phase 1 of the Carlsberg-Shanghai brewery), as well as combined anaerobic and aerobic treatment of highly concentrated wastewater from an alcohol distillery in Thailand (the Suratip Group, Red Bull).

One of the main authors to the “Water and Wastewater Engineering Handbook for Russia” in which handbook containing legislation as well as up to data methods for water and wastewater treatment processes and equipment are listed. This publication was initiated by the Danish EPA upon request from the Russian organisation SCEP, State Committee for Environmental Protection. This project was finalised in the summer of 2000.

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Publications

50 publications in Danish and English from 1987 to present

Reports and Publications:

(A = author; CA = co-author)

1. "Danish Activities on Biological Phosphorus Removal. Laboratory, Pilot and Full Scale Applications", poster, IAWPRC Spec.Conf., Rome, Italy, 1987. (CA)

2. "Biologisk næringssaltfjernelse fra spildevand" (Biological Nutrient Removal in Wastewater), Dan-Miljø konference, Herning, Denmark, 17.11.1987 (Danish). (A)

3. "The BIO-DENIPHO Process for Bioligical Phosphate Removal. The Danish System for Biological N and P Removal", P-Symposium, Wageningen University, The Netherlands, Febr.1988. (A)

4. "Biogas Production, Methods and Operating Experience", Conference on Gas Motors, Aarhus, Denmark. Febr. 1989. (A)

5. "Upgrading of a Combined Industrial and Municipal WWTP. The Fredericia Plant", Int.Spec.Conf. on Upgrading of WWTPs, Munich, Sept.1989. (A)

6. "Traitement Biologique de l'Azote et du Phosphore dans les Eaux Usées. Experiences Danoises" (Biological Treatment of N and P, Danish Practise), L'eau, l'Industrie et les Nuisances, Sept. 1990 (French). (CA)

7. "Biologische und Chemische Phosphatelimination. Technische Möglichkeiten und Grenzen" (Biological and Chemical P-Removal), 23. Wassertechnisches Seminar, Technische Hochschule Darmstadt, Germany, Nov. 1990 (German). (A)

8. "Système BIO-DENITRO/DENIPHO Traitement Biologique de l'Azote et du Phosphore" (BIO-DENITRO/NIPHO systems for the biological treatment of N and P). Tribune de l'Eau Nov./Dec. 1991 (French). (CA)

9. "Hydrolyseret slam til denitrifikation" (Sludge Hydrolysis for the Generation of Carbon Source for Denitrification) Vand & Miljø, 8/1990 (Danish). (CA)

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10. "Methods for Improving Biological Phosphorus Removal". WPCF Conf., Toronto, Canada, Oct. 1991. (CA)

11. "Wechselwirkungen Bio-/Physicochemischer Verfahren" (Interactions between Biological and Chemical WW Treatment), Sanierung von Kläranlagen, 5.Karlsruher Flockungstage, Germany, Nov. 1991 (German). (CA)

12. "Second Generation Oxidation Ditches: Advanced Technology in Simple Design", Wat.Sci.Tech., Vol. 27, No. 9, pp 105-113, 1993. (CA)

13. "STAR (Superior Tuning And Reporting) On-line Measurements and Control Strategies. System Description and Data from Application of the STAR Concept on Seven Danish Full Scale WWTPs in Denmark", 7th Forum for Applied Biotechnology, Sept. 1993, Gent (B). (CA)

14. "Application of Activated Sludge Phased Oxidation Ditch Systems Using Alternating Nitrification-Denitrification for the Removal of Nutrients in Municipal Wastewater. Bio-Denitro (Biological N-removal) and Bio-Denipho (Biological N- and P-Removal) Systems", 7th Forum for Applied Biotechnology, Sept. 1993, Gent (B). (CA)

15. "Håndbog i drift af renseanlæg. Teknik" (Users Manual for Operation of Wastewater Treatment Plants.) ISBN 87-7316-784-3, Den Kommunale Højskole, Denmark, 1994 (Danish). (CA)

16. "Basic Education Manual for Personnel on Wastewater Treatment Plants. Basic Biological Processes for BOD, N and P removal. Anaerobic Sludge Treatment", Ferskvandscentret (The Freshwater Centre), Silkeborg, Denmark, 1990 (Danish). (CA).

17. "Full-Scale Operation Results from BNR Plants Characterised by Steady Operation, Low N and P Effluent Quality and On-Line Monitoring and Control," 2nd BNR conference, Albury, Australia, October 1994. (CA)

18. ”Second Generation Oxidation Ditches: Advanced Technology in Simple Design” Paper presented at the ADVANCED SEMINAR OF OXIDATION DITCH TECHNOLOGY, TIANJIN, PRC, October 8-13 1996 (CA)

19. “Reduction of Nutrient Emission by Sludge Hydrolysis” Wat.Sci.Tech. Vol 35 No 10 pp 79-85, 1997 (CA)

20. “Full-Scale Control of Biological N and P removal with Competition for Substrate and Electron Donor” Wat.Sci.Tech. Vol.41No.9, pp 179-184, 2000, (CA)

21. "Drift af renseanlæg. Teknik, 2.udgave"
(Users Manual for Operation of Wastewater Treatment Plants, 2nd Upgraded Edition.)
ISBN 87-7848-477-4, Den Kommunale Højskole, Denmark, 2000 (Danish). (CA)

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22. Spildevandsteknisk Tidsskrift, Blad 5, 2000, Biologisk korrosion af rustfrit stål
Biological Corrosion of Stailess Steel by Manganese Oxidising Bacteria (CA, in Danish)

23. Spildevandsteknisk Tidsskrift, Blad 5, 2000, Langtidsplaner for renseanlæg
Long Term Planning for Equipment and Processes on Wastewater Treatment Plants (CA, in Danish)

24. "The Water and Wastewater Handbook for Russia"
ISBN 87-988526-0-4, DANCED, 2001 (CA)

25. "Rustfrit stål i renseanlæg"
(The fate of stainless steel used for WWTP's)

ISBN 87-600-0416-9, Industiens Forlag, Denmark, 2001 (Danish)(CA)

26. "Denitrifikation med reduceret kulstofbehov, State of the Art" (Denitrification of wastewater at reduced COD demand, State of the Art). VAND&JORD, (8, 4), Dec.2001 ISSN 0908-7761.
(Danish) (A)

27. Spildevandsteknisk Tidsskrift, Blad 4, 2001,
Biologisk denitrifikation med mindre eller uden kulstof

(Biological Denitrification using reduced or no Carbon) (A, in Danish)

28. Spildevandsteknisk Tidsskrift, Blad 3, 2002, Metoder til optimering af rejektvandsbehandling, SHARON og ANAMMOX processerne (New Methods for the Optimisation of the Treatment of Reject Waters. The SHARON and ANAMMOX processes) (A, in Danish)

29. Spildevandsteknisk Tidsskrift, Blad 4, 2002,
Biologisk slamhydrolyse af aktivt slam (Biological Sludge Hydrolysis of Activated Sludge)

(A, in Danish)´

30. Spildevandsteknisk Tidsskrift, Blad 4, 2003,
COD, N og P i rejektvand fra slammineralisering (COD, N and P contents in Reject Waters from Reed Beds for Sludge Mineralisation of Biological P Removing Sludge) (CA, in Danish)

31. Spildevandsteknisk Tidsskrift, Blad 5, 2003,
Slamhydrolyse på Aalborg Vest renseanlæg (Full Scale Application of Activated Sludge Hydrolysis for the Improvement of Biological Phosphorus Removal) (CA, in Danish)

32. Spildevandsteknisk Tidsskrift, Blad 1, 2004, Siloxan fjernelse fra biogas (Removal of Siloxanes from Biogas) (A, in Danish)

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33. Spildevandsteknisk Tidsskrift, Blad 2, 2004, Opgørelse af anlægsbelastning på renseanlæg. Kan man stole på tilløbsanalyserne ? (Quality assessment of inlet loads to Full Scale WWTPs) (A, in Danish)

34. Education Programme for Advanced Biological N and P Removal.
Lecturer at a Training Course for Improved N and P removal, Beijing Drainage Group, Beijing October 2004 at the Gaobeidian Training Centre, at the Goabeidian WWTP in Beijing.

35. MIKROBEN, nr.25, 2004. Ultralydsbehandling af slam (Ultrasound Pretreatment of Sludge) (A, in Danish)

36. MIKROBEN, nr.31, 2005. Spildevandsrensning I Beijing, 2004. (Wastewater Treatment in Beijing, PRC, 2004) (A, in Danish)

37. Hydrolysis and Fermentation of Activated Sludge to enhance Biological Phosphorus Removal, IWA specialised Seminar on N and P removal, Krakow, Poland, September 2005 (CA).

38. Spildevandsteknisk Tidsskrift, Blad 4, 2005, Driftsstatus for slammineraliseringsanlæg i Danmark (State of the Function of Danish Reed Bed Sludge Mineralisation Plants, 2005) (CA, in Danish)

39. Spildevandsteknisk Tidsskrift, Blad 2, 2006, Lille guide til Den Dominikanske Republik (Guide to the Dominican Republic, Wastewater Treatment in DR) (A, in Danish)

40. "Hydrolysis and fermentation of activated sludge to enhance biological phosphorus removal" Wat.Sci.Tech. Vol 53 No 12 pp 55-64, 2006 (CA)

41. MIKROBEN, nr.38, 2007. Forbedret hydraulisk og organisk kapacitet på eksisterende renseanlæg uden behov for udbygning. APS.Avanceret Proces Styring (Increased hydraulic and organic capacity in existing volumes at WWTPs. APC..Advanced Process Control) (A, in Danish)

42. MIKROBEN, nr.38, 2007. Vis mig dit spildevand og jeg skal sige dig hvem du er!. (Show me your wastewater composition and I will give an assessment of your lifestyle!) (A, in Danish)

43. Forbedret hydraulisk og organisk kapacitet på eksisterende renseanlæg uden behov for udbygning ved brug af avanceret process styring.(Increased hydraulic and organic capacity on existing WWTP without demands for volume extensions, Advanced Process Control.) Paper in the proceedings of the 10th Nordic Wastewater Treatment Conference, November 2007, HAMAR, NORWAY.pp 289-296.
(A, in Danish, including an English abstract)

44. Spildevandsteknisk Tidsskrift, Blad 5, 2007, Konsekvenser af klimaændringer for spildevandsrensning I fremtiden. (The effects of the global heating on the operation of

WWTPs in the future. (A, in Danish)

45. Spildevandsteknisk Tidsskrift, Blad 4, 2008, ARP anlæg på Bjergmarken renseanlæg.Driftserfaringer med ARP processen 2007-2008.
The ARP process at the Bjergmarken WWTP. Process data from operation in 2007-2008. (A, in Danish)

46. Improved nutrient removal by active control of the biological sludge hydrolysis process.(Optimering af biologisk kvælstof- og fosforfjernelse ved aktiv brug af slamhydrolyseprocessen). Paper in the proceedings of the 11th Nordic Wastewater Treatment Conference, November 2009, ODENSE, DENMARK.pp 289-296.
(A, in Danish, including an English abstract)

47. Spildevandsteknisk Tidsskrift, Blad 3, 2011. The ANAMMOX process. Nitrogen removal without the need for COD. Practical application of the process. (A, in Danish)

48. Integrated control of sewage networks and WWTPs. Paper in the proceedings from the 12th Nordic Wastewater Conference. 14-16 nov. 2011, Helsinki, Finland. (CA)

49. 40th anniversary meeting at the Spildevandsteknisk Forening, Bornholm, 2012. En humoristisk spildevandshistorie 2012 +/- 40 år, hvad er der sket siden 1972 ?
(A story filled in with humour about the wastewater treatment history (2012 +/- 40 years), What have we done technologically since 1972 ?) (A, in Danish)

50. Presentation of the nature of biological sludge hydrolysis in an activated sludge plant at the . DANVA, DANSK VAND wastewater and water conference nov.2013 in Aarhus,Denmark). (A, in Danish)