

Søren Rysgaard

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Male, born 23rd September 1965 in Snedsted, Danish citizen, married, 5 children

EDUCATION

Degree	Institution	Date Awarded
M.Sc.	University of Aarhus (biogeochemistry)	1991
Ph.D.	University of Aarhus (biogeochemistry)	1995

EMPLOYMENT HISTORY

1992	Associate professor, University of Aarhus
1992-1993	Scientist at NERI
1993-1995	PhD student at NERI and University of Aarhus
1995-2005	Senior Scientist at NERI
2005-present	Professor at Greenland Institute of Natural Resources

INTERNATIONAL COMMITTEES

Canadian Arctic Shelf Exchange Study (CASES). Canada
Science Coordinating Group of the International Arctic Polynya Program
(IAPP-SCG)

MEMBERSHIP

American Geophysical Union (AGU)
American Society of Limnology and Oceanography (ASLO)

OTHER INFORMATION

Editor Aquatic Microbial Ecology
Reviewer for various National and International Sci. Foundations.
Referee for Limnol. Oceanogr., Mar. Ecol. Prog. Ser., Appl. Environ. Microbiol., Am. J. Science.
54 International Refereed Publications, 7 book chapters and 20 reports.
41 International Refereed Publications (since 1998).

RESEARCH INTERESTS

1. Marine microbiology and biogeochemistry
2. Benthic pelagic coupling.
3. Carbon and nutrient cycling in Arctic waters
4. Transport of pollutants in food webs
5. Global Change.

PUBLICATIONS

Internationally reviewed journal articles:

1. Risgaard-Petersen N, Rysgaard S, and Revsbech NP (1993). A sensitive assay for determination of $^{14}\text{N}/^{15}\text{N}$ isotope distribution in NO_3^- . *J. Microbiol. Methods*. 17: 155-164.
2. Rysgaard S, Risgaard-Petersen N, Nielsen LP, and Revsbech NP (1993). Nitrification and denitrification in lake and estuarine sediment measured by the ^{15}N dilution technique and isotope pairing. *Appl. Envir. Microbiol.* 59(7): 2093-2098.
3. Rysgaard S, Risgaard-Petersen N, Sloth NP, Jensen K, Nielsen LP (1994). Oxygen regulation of nitrification and denitrification in sediments. *Limnol. Oceanogr.* 39(7): 1643-1652.
4. Jensen K, Sloth NP, Risgaard-Petersen N, Rysgaard S, and Revsbech NP (1994). Estimation of nitrification and denitrification from microprofiles of oxygen and nitrate in model sediment systems. *Appl. Envir. Microbiol.* 60(6): 2094-2100.
5. Risgaard-Petersen N, Rysgaard S, Nielsen LP, and Revsbech NP (1994). Diurnal variation of denitrification and nitrification in sediments colonized by benthic microphytes. *Limnol. Oceanogr.* 39(3): 573-579.
6. Risgaard-Petersen N and Rysgaard S (1995). Nitrate reduction in sediments and waterlogged soil measured by ^{15}N techniques. In "Methods in Applied Soil Microbiology and Biochemistry" [Alef & Nannipieri eds.] Academic Press. 1995 pp. 287-310
7. Risgaard-Petersen N, Rysgaard S, and Revsbech NP (1995). Combined microdiffusion-hypobromite oxidation method for determination of the ^{15}N isotope in NH_4^+ . *Soil. Sci. Soc. Am. J.* 59:1077-1080
8. Rysgaard S, Christensen PB, and Nielsen LP (1995). Seasonal variation of denitrification and nitrification in a bioturbated and microphyte inhabited estuarine sediment, Kertinge Nor (Denmark). *Mar. Ecol. Prog. Ser.* 126:111-121
9. Rysgaard S, Risgaard-Petersen N, and Sloth NP (1996). Nitrification, denitrification and nitrate ammonification in sediments of two coastal lagoons in Southern France. *Hydrobiologia* 329: 133-141.
10. Rysgaard S and Berg P (1996). Mineralization in a northeastern Greenland sediment: Mathematical modelling, measured sediment pore water profiles and actual activities. *Aq. Microb. Ecol.* 11:297-305
11. Rysgaard S, Dahlggaard H, and Finster K (1996). Primary production, nutrient dynamics and mineralization in a northeastern Greenland fjord during the summer thaw. *Polar Biology.* 16:497-506.
12. Krause-Jensen D, McGlathery JK, Rysgaard S, and Christensen PB (1996). Production within dense mats of the filamentous macroalgae *Cheatomorpha linum* in relation to light and nutrient availability. *Mar. Ecol. Prog. Ser.* 134:207-216

13. Nielsen LP, Risgaard-Petersen N, Rysgaard S, and Blackburn TH (1996). Nitrate fluxes and understanding of benthic denitrification; Reply to the note by Middelburg et al. *Limnol. Oceanogr.* 41:1845-1846
14. Rysgaard S. and Risgaard-Petersen N. A sensitive method for determination of nitrogen-15 in Urea. (1997). *Mar. Biol.* 2:191-195.
15. McGlathery KJ, Krause-Jensen D, Rysgaard S, Christensen PB. (1997). Patterns of ammonium uptake within dense mats of the filamentous macroalga *Chaetomorpha linum*. *Aquatic Botany* 59:99-115
16. Risgaard-Petersen N, Dalsgaard T, Rysgaard S, Christensen PB, Borum J, McGlathery K, Nielsen LP (1998). Nitrogen balance of a temperate eelgrass (*Zostera marina*) bed. *Mar. Ecol. Prog. Ser.* 174:281-291
17. Rysgaard S, Thamdrup B, Risgaard-Petersen N, Berg P, Fossing H, Christensen PB, Dalsgaard T (1998). Seasonal carbon and nitrogen mineralization in the sediment of Young Sound, Northeast Greenland. *Mar. Ecol. Prog. Ser.* 175:261-276
18. Berg, P, Risgaard-Petersen N, and Rysgaard S (1998). Interpretation of measured concentration profiles in sediment pore water. *Limnol. Oceanogr.* 6:1500-1510
19. Krause-Jensen D, Christensen PB, Rysgaard S. (1999). Oxygen and nutrient dynamics within mats of the filamentous macroalgae *Chaetomorpha linum*. *Estuaries* 22:31-38
20. Rysgaard S, Thastum P, Dalsgaard T, Christensen PB, Sloth NP. (1999). Effects of salinity on NH_4^+ adsorption capacity, nitrification and denitrification in Danish estuarine sediments. *Estuaries* 22:21-30
21. Rysgaard S, Nielsen TG, Hansen B., (1999). Seasonal variation in nutrients, pelagic primary production and grazing in a high-Arctic coastal marine ecosystem, Young Sound, Northeast Greenland. *Mar. Ecol. Prog. Ser.* 179:13-25
22. Dalsgaard, T., Christensen, P.B., Rysgaard, S. & N. Risgaard-Petersen, (2000). Nitrogen removal in Danish coastal waters: Importance and regulation. In: "Havmiljøet mod årtusindskiftet". Edited by Bente Lomstein. Olsen & Olsen, Fredensborg 176 pp.
23. Christensen PB, Rysgaard S, Sloth NP, Dalsgaard T, Schwærter S (2000). Sediment mineralization, denitrification, dissimilative nitrate reduction to ammonia and nutrient fluxes in an estuary with sea cage trout farming. *Aquat. Microb. Ecol.* 21:73-84
24. Rysgaard S, Christensen PB, Sørensen MV, Funch P, Berg P. (2000). Marine meiofauna, carbon and nitrogen mineralization in sandy and soft-sediments of Disko Bay, West Greenland. *Aquat. Microb. Ecol.* 21:59-71
25. Hoffmann CC, Rysgaard S. Berg P (2000). Denitrification rates predicted by nitrogen-15 labeled nitrate microcosm studies, in situ measurements, and modeling. *J Environ. Quality* 29(6):2020-2028
26. Sejr MK, Jensen KT, Rysgaard S. (2000). Macrozoobenthos in a Northeast Greenland Fjord: Structure and Diversity. *Polar Biology* 23:792-801

27. Glud RN, Risgaard-Petersen N, Thamdrup B, Fossing H, and Rysgaard S (2000). Benthic carbon mineralization in a high-Arctic sound (Young Sound, NE Greenland). *Mar. Ecol. Prog. Ser.* 206:59-71
28. Nielsen K, Risgaard-Petersen N, Sømø B, Rysgaard S, Bergø T (2001). Mass balance of nitrogen and phosphorus estimated by flux measurements and dynamic modelling in the estuary, Randers Fjord, Denmark. *Mar Ecol Prog Ser* 219:25-40
29. Rysgaard, Kühl M, Glud RN, Hansen JW (2001). Biomass, production, and horizontal patchiness of sea ice algae in a high-Arctic fjord (Young Sound, NE-Greenland). *Mar Ecol Prog Ser* 223:15-26
30. Kühl M, Glud RN, Borum J, Roberts R, Rysgaard S (2001) Photosynthetic performance of surface associated algal below sea ice as measured with pulse amplitude modulated (PAM) fluorometer and O₂ microsensors. *Mar Ecol Prog Ser* 223:1-14
31. Petersen H, Meltofte H, Rysgaard S, Rasch M, Jonasson S, Christensen TR, Pedersen SA (2001) The Arctic. In: *Climatic change research - Danish Contributions* (Eds. Jørgensen AMK, Fenger J, Halsnæs K). Danish Meteorological Institute/Danish Climate Center. Gads Forlag, pp 408
32. Berg P, Rysgaard S, Funch P, Sejr MK (2001). The effects of bioturbation on solutes and solids in marine sediments. *Aquat Microb Ecol* 26:81-94
33. Rysgaard S, Fossing H, Mark-Jensen M (2001). Organic matter degradation through oxygen respiration, denitrification, manganese-, iron-, and sulfate reduction in marine sediments (the Kattegat and the Skagerrak). *Ophelia* 55(2): 77-91
34. Roberts, RD, Glud RN, Kühl M, Rysgaard S (2002). Primary production of crustose coralline red algae in a high arctic fjord. *J Phycol* 38(2): 1-11
35. Eyre BD, Rysgaard S, Dalsgaard T, Christensen PB (2002). Comparison of isotope pairing and N₂/Ar methods for measuring sediment denitrification - Assumptions, modifications and implications. *Estuaries* 25(6a):1077-1087
36. Glud RN, Rysgaard S, Kühl M (2002). O₂ dynamics and photosynthesis in ice algal communities: Quantification by microsensors, O₂ exchange rates, ¹⁴C-incubations and a PAM-fluorometer. *Aquat Microb Ecol* 27:301-311
37. Glud RN, Kühl M, Wenzhöfer F, Rysgaard S (2002) Benthic microphytes of a high arctic fjord: Importance for ecosystem primary production. *Mar Ecol Prog Ser* 238:15-29
38. Sejr MK, Sand MK, Jensen KT, Petersen JK, Christensen PB, Rysgaard S (2002). Growth and production of *Hiatella arctica* (Bivalvia) in high arctic Young Sound, Northeast Greenland. *Mar Ecol Prog Ser* 224:163-169
39. Sejr MK, Jensen KT, Rysgaard S (2002) Annual growth bands validated in the bivalve *Hiatella arctica* by mark-recapture study in NE Greenland. *Polar Biol* 25:794-796

40. Jensen MM, Thamdrup B, Rysgaard S, Holmer M, Fossing H (2003) Rates and regulation of microbial iron reduction in sediments of the Baltic-North Sea transition. *Biogeochemistry* 65:295-317
41. Rysgaard S, Vang T, Stjernholm M, Rasmussen B, Windelin A, Kiilsholm S (2003) Physical conditions, carbon transport and climate change impacts in a NE Greenland fjord. *Arctic, Antarctic and Alpine Research*. 35: 301-312
42. Born EW, Rysgaard S, Ehlme G, Sejr M, Acquarone M, Levermann N (2003) Underwater observations of foraging free-living walruses (*Odobenus rosmarus*) including estimates of their food consumption. *Polar Biology*. 26:348-357.
43. Levermann N, Galatius A, Ehlme, Rysgaard S, Born EW (2003). Feeding behaviour of free-ranging walruses with notes on apparent dextrality on flipper use. *BMC Ecology* 3:9
44. Berg P, Rysgaard S, Thamdrup B (2003). General dynamic modeling of early diagenesis and nutrient cycling; Applied to an Arctic marine sediment. *J Am. Science* 303: 905-955
45. Risgaard-Petersen, Nielsen LP, Rysgaard S, Dalsgaard T, Meyer RL. (2003). Application of the isotope pairing technique in sediments where anammox and denitrification co-exist. *Limnol Oceanogr: Methods* 1: 63-73.
46. Rysgaard S & Glud RN (2004). Anaerobic N₂ production in sea ice. *Limnol & Oceanogr*. 49:86-94.
47. Glud RN, Rysgaard S, Fenchel T, Nielsen PH (2004). A conspicuous H₂S oxidizing microbial mat from a high Arctic fjord (Young Sound, NE Greenland). *Marine Biology* 145: 51-60.
48. Rysgaard S, Glud RN, Risgaard-Petersen N, Dalsgaard T (2004). Denitrification and anammox activity in Arctic sediments. *Limnology & Oceanography* 49: 1493-1502.
49. Risgaard-Petersen N, Meyer RL, Schmid M, Jetten MSM, Enrich-Prast A, Rysgaard S, Revsbech NP (2004). Anaerobic ammonia oxidation in an estuarine sediment. *Aquat. Microb. Ecol.* 36:293-304.
50. Eyre B, Rysgaard S, Dalsgaard T, Christensen PB (2004). Reply to comment on our Paper "Comparison of isotope pairing and N₂:Ar methods for measuring sediment denitrification." *Estuaries* 27:177-178.
51. Sejr MK, Petersen JK, Jensen KT, Rysgaard S. (2004). Effect of food concentration on clearance rate and energy budget of the Arctic bivalve *Hiatella arctica* (L) at sub-zero temperature. *J Exp. Mar. Biol. Ecol.* 311:171-183.
52. Soegaard H, Sørensen L, Rysgaard S, Grøndahl L, Elberling B, Friborg T, Hinkler J, Larsen SE, Bendtsen J. (2004). High arctic carbon sink identification – A system approach. *IGBP Newsletter* 59:11-14.
53. Rysgaard S and Nielsen TG. Carbon cycling in a high-arctic marine ecosystem – Young Sound, NE Greenland (*accepted*). In: Structure and function of contemporary food webs on Arctic shelves: a panarctic comparison edited by Wassmann P. *Progress in Oceanography*.

54. Risgaard-Petersen, Nielsen LP, Rysgaard S, Dalsgaard T, Meyer RL. (2004). Erratum: Application of the isotope pairing technique in sediments where anammox and denitrification co-exist. *Limnol Oceanogr: Methods* 2: 315-315.