

# CURRICULUM VITAE

## PERSONAL INFORMATION

**Name:** Morten Gunnar Grønli  
**Born:** 26.03.1965 in Trondheim, Norway  
**Sex:** Male  
**Citizenship:** Norwegian  
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## EDUCATION:

1996 Dr. Ing. (PhD): Norwegian University of Science and Technology, Mech. Eng.  
Disputation date 05.12.1996  
*Title: 'A theoretical and experimental study of the thermal degradation of biomass'*  
1991 Siv. Ing. (M.Sc.): Norwegian University of Science and Technology, Mech. Eng.

## CURRENT AND PREVIOUS POSITIONS:

15.09.2003 - present Laboratory Manager/Chief Engineer,  
Department of Energy and Process Engineering (EPT),  
Faculty of Engineering Science and Technology (IVT),  
Norwegian University of Science and Technology (NTNU)  
01.01.1997 - 14.09.2003 Research Scientist,  
Department of Energy Processes  
SINTEF Energy Research, Norway  
01.01.1996 - 31.12.1997 Senior Research Scientist,  
Nordic Energy Research Program,

## INSTITUTIONAL RESPONSIBILITIES:

2017- Coordinator of the National node of ECCSEL ERIC ([www.eccsel.org](http://www.eccsel.org))  
2009 - 2012 Project coordinator for ECCSEL ([www.eccsel.org](http://www.eccsel.org))  
2009 - 2010 Norwegian representative in the [ESFRI](http://www.esfri.eu) Energy Thematic Working Group  
(<http://www.esfri.eu/working-groups/energy-0>)  
2004 - 2008 Coordinator for ENGAS Research Infrastructure. EU FP6 funded research  
Infrastructure within environmental gas management hosted by NTNU and  
SINTEF

## SUPERVISION OF GRADUATE STUDENTS AND RESEARCH FELLOWS:

Co-supervision of the following PhD students at EPT, IVT, NTNU:

2015 – 2018: Kathrin Weber  
Title: *'Production and properties of Biocarbon'*  
2010 – 2014: Dhruv Tapasvi  
Title: *'Experimental and Simulation Studies on Biomass Torrefaction and Gasification'*  
2007- 2012: Liang Wang,  
Title: *'Effect of additives in reducing ash sintering and slagging in biomass  
combustion applications'*  
2004 – 2008: Roger Khalil,  
Title: *'Thermal conversion of biomass with emphasis on product distribution,  
reaction kinetics and sulphur abatement'*  
2002 – 2005: Judit Adam,  
Title: *'Catalytic conversion of biomass to produce higher quality liquid bio-fuels'*

#### MEMBERSHIPS OF SCIENTIFIC SOCIETIES:

- 2000-2003 Member of the steering board of the Norwegian Bioenergy Association – ([www.NOBIO.no](http://www.NOBIO.no))  
1998-2008 Norwegian representative in European PyNe - Pyrolysis Network and ThermalNet  
1995-1997 Norwegian representative in IEA Bioenergy Agreement, Task XIII– Biomass Utilization, Biomass Combustion.

#### MAJOR COLLABORATIONS:

Name: Prof. Michael J. Antal  
Topic: Biocarbon, thermochemical conversion of biomass  
Institution: Hawaii Natural Institute, University of Hawaii, USA

Name: Dr. Gabor Varhegyi  
Topic: Biocarbon, thermochemical conversion of biomass  
Institution: Hungarian Academy of Science, Hungary

#### TRACK RECORD (November 2021):

**Total number of publications:** ca 40

<https://wo.cristin.no/as/WebObjects/cristin.woa/wo/0.Profil.29.25.2.3.3.7>

**Scopus:** h-index: 25, Citations: 4287 (by 3650 documents)

**Google Scholar:** h-index: 27, Citations: 6071.

#### Publications in refereed journals:

1. Barta-Rajnai, Eszter; Zoltán Sebestyén, Emma Jakab, Eszter Patus, János Bozi, Liang Wang, Øyvind Skreiberg, Morten G Grønli, Roger Antoine Khalil, Zsuzsanna Czégény: *Pyrolysis of Untreated and Various Torrefied Stem Wood, Stump, and Bark of Norway Spruce*. Energy & Fuels, 2019. Vol 33 (4)
2. Wang, Liang Eszter Barta-Rajnai, Øyvind Skreiberg, R Khalil, Zsuzsanna Czégény, Emma Jakab, Zsolt Barta, Morten Grønli. *Effect of torrefaction on physiochemical characteristics and grindability of stem wood, stump and bark*. Applied Energy, Vol 227. 2018, pp137-148
3. Skreiberg, Øyvind; Wang, Liang; Bach, Quang Vu; Grønli, Morten. *Carbonization pressure influence on fixed carbon yield*. Chemical Engineering Transactions. vol. 65. 2018
4. Wang, Liang; Skreiberg, Øyvind; Grønli, Morten; Antal, Michael Jerry. *A Study of char formation from cellulose under different conditions*. Chemical Engineering Transactions. vol. 65. 2018
5. Barta-Rajnai, Eszter; Wang, Liang; Sebestyén, Zoltán; Barta, Zsolt; Khalil, Roger Antoine; Skreiberg, Øyvind; Grønli, Morten; Jakab, Emma; Czégény, Zsuzsanna. *Comparative study on the thermal behavior of untreated and various torrefied bark, stem wood, and stump of Norway spruce*. Applied Energy. Vol. 204, Pages 1043-1054, 2017.
6. Barta-Rajnai, Eszter; Wang, Liang; Sebestyén, Zoltán; Barta, Zsolt; Khalil, Roger Antoine; Skreiberg, Øyvind; Grønli, Morten; Jakab, Emma; Czégény, Zsuzsanna. *Effect of Temperature and Duration of Torrefaction on the Thermal Behavior of Stem Wood, Bark, and Stump of Spruce*. Energy Procedia. vol. 105. Pages 551-556, 2017
7. Barta-Rajnai, Eszter; Várhegyi, Gábor; Wang, Liang; Skreiberg, Øyvind; Grønli, Morten; Czégény, Zsuzsanna; *Thermal Decomposition Kinetics of Wood and Bark and Their Torrefied Products*, Energy & Fuels, Vol. 31, No. 4,4024-4034, 2017
8. Barta-Rajnai, Eszter; Jakab, Emma; Sebestyén, Zoltán; May, Zoltán; Barta, Zsolt; Wang, Liang; Skreiberg, Øyvind; Grønli, Morten; Bozi, Janos; Czegeny, Zsuzsanna. (2016) *Comprehensive compositional study of torrefied wood and herbaceous materials by chemical analysis and thermoanalytical methods*. Energy & Fuels, Vol 30, No. 10, 8019-8030, 2016,
9. Wang, Liang; Gábor Várhegyi, Øyvind Skreiberg, Tian Li, Morten Grønli, and Michael J. Antal *Combustion Characteristics of Biomass Charcoals Produced at Different Carbonization Conditions: A Kinetic Study*. Energy & Fuels Vol. 30, No. 4, pp 3186-3197, 2016

10. Tapasvi, D. , Kempegowda, R.S., Tran, K.-Q., Skreiberg, Ø., Grønli, M. *A simulation study on the torrefied biomass gasification*. Energy Conversion and Management. Volume 90, Pages 446-457, March 2015
11. Budai, Alice; Wang, Liang; Grønli, Morten; Strand, Line Tau; Antal, Jr, Michael Jerry; Abiven, Samuel; Dieguez-Alonso, Alba; Anca-Couce, Andrés; Rasse, Daniel. *Surface Properties and Chemical Composition of Corncob and Miscanthus Biochars: Effects of Production Temperature and Method*. Journal of Agricultural and Food Chemistry. volum 62 (17). 2014
12. Skreiberg, Øyvind; Grønli, Morten; Antal, Michael Jerry. *The smart biofuels of the future*. Biofuels. volum 4 (2). 2013
13. Tapasvi, Dhruv; Khalil, Roger Antoine; Várhegyi, Gabor; Skreiberg, Øyvind; Tran, Khanh-Quang; Grønli, Morten. *Kinetic Behavior of Torrefied Biomass in an Oxidative Environment*. Energy & Fuels. 2013; volum 27 (2). 2013
14. Tapasvi, Dhruv; Khalil, Roger Antoine; Várhegyi, Gabor; Tran, Khanh-Quang; Grønli, Morten; Skreiberg, Øyvind. *Thermal Decomposition Kinetics of Woods with Emphasis on Torrefaction*. Energy & Fuels. 2013
15. Wang, Liang; Skreiberg, Øyvind; Grønli, Morten; Gregory Patrick, Specht; Antal, Michael Jerry. *Is Elevated Pressure Required to Achieve a High Fixed-Carbon Yield of Charcoal from Biomass? Part 2: The Importance of Particle Size*. Energy & Fuels. 2013; volum 27 (4).
16. Tapasvi, Dhruv; Khalil, Roger Antoine; Skreiberg, Øyvind; Tran, Khanh-Quang; Grønli, Morten. *Torrefaction of Norwegian Birch and Spruce: An Experimental Study Using Macro-TGA*. Energy & Fuels. 2012; volum 26 (8).
17. Trninic, Marta; Wang, Liang; Várhegyi, Gabor; Grønli, Morten; Skreiberg, Øyvind. *Kinetics of Corncob Pyrolysis*. Energy & Fuels. 2012; volum 26 (4).
18. Wang, Liang; Hustad, Johan Einar; Grønli, Morten. *Sintering Characteristics and Mineral Transformation Behaviors of Corn Cob Ashes*. Energy & Fuels. 2012; volum 26 (9).
19. Wang, Liang; Hustad, Johan Einar; Skreiberg, Øyvind; Skjevraak, Geir; Grønli, Morten. *A critical review on additives to reduce ash related operation problems in biomass combustion applications*. Energy Procedia. 2012; volum 20.
20. Wang, Liang; Skjevraak, Geir; Hustad, Johan Einar; Grønli, Morten. *Sintering characteristics of sewage sludge ashes at elevated temperatures*. Fuel processing technology. 2012; volum 96.
21. Wang, Liang; Skjevraak, Geir; Hustad, Johan Einar; Grønli, Morten; Skreiberg, Øyvind. *Effects of additives on barley straw and husk ashes sintering characteristics*. Energy Procedia. 2012; volum 20.
22. Grønli, Morten; Lilliestråle, Astrid; Bredesen, Arne Mathias; Bolland, Olav; Barrio, Maria; Røkke, Nils Anders. *ECCSEL - European Carbon dioxide Capture and Storage Laboratory Infrastructure*. Energy Procedia. 2011; volum 4.
23. Wang, Liang; Skjevraak, Geir; Hustad, Johan Einar; Grønli, Morten. *Effects of Sewage Sludge and Marble Sludge Addition on Slag Characteristics during Wood Waste Pellets Combustion*. Energy & Fuels. 2011; volum 25 (12).
24. Wang, Liang; Trninic, Marta; Skreiberg, Øyvind; Grønli, Morten; Considine, Roland; Antal, Michael Jerry. *Is Elevated Pressure Required To Achieve a High Fixed-Carbon Yield of Charcoal from Biomass? Part 1: Round-Robin Results for Three Different Corncob Materials*. Energy & Fuels. 2011; volum 25 (7).
25. R. A. Khalil, G. Varhegyi, S. Jaschke, M.G. Grønli and J. Hustad, *CO<sub>2</sub> Gasification of Biomass Chars: A Kinetic Study*, Energy & Fuels 2009, 23, 94–100
26. R.A. Khalil, E. Meszaros, M.G. Grønli, G. Varhegyi, I. Mohai, B. Marosvölgyi, J.E. Hustad, *Thermal analysis of energy crops Part I: The applicability of a macro-thermobalance for biomass studies*, J. Anal. Appl. Pyrolysis, 81 (2008) 52–59
27. Adam, J., Blazso, M., Meszaros, E., Stöcker, M.; Nilsen, M. H., Bouzga, A., Hustad, J. E.; Grønli, M., Øye, G. *Pyrolysis of biomass in the presence of Al-MCM-41 type catalysts*. Fuel 2005; 84: 1494-1502
28. Varhegyi G., M. Grønli, and C. Di Blasi. *Effects of Sample Origin, Extraction, and Hot-Water Washing on the Devolatilization Kinetics of Chestnut Wood*. Ind. Eng. Chem. Res., Vol. 43, No. 10, pp. 2356-2367, 2004
29. Antal, M.J., and M. Grønli. *The Art, Science and Technology of Charcoal Production*. Ind. Eng. Chem. Res., Vol. 42., No. 8, pp. 1619-1640. 2003
30. Grønli, M.G., G. Varhegyi and C. Di Blasi. *Thermogravimetric Analysis and Devolatilization Kinetics of Wood*. Ind. Eng. Chem. Res., Vol. 41., No. 17, pp. 4201-4208, 2002

31. Sørum, L., Grønli, M.G., Hustad, J.E. *Pyrolysis characteristics and kinetics of municipal solid wastes*, Fuel. Vol. 80, 2001.
32. Antal, M.J., S.G. Allen, X. Dai, B. Shimizu, M.S. Tam and M. Grønli. *Attainment of the Theoretical Yield of Carbon from Biomass*. Ind. Eng. Chem. Res. Vol. 39. No 11, 2000.
33. Grønli, M. and M.C. Melaaen. *Mathematical Model for Wood Pyrolysis - Comparison of Experimental Measurements with Model Predictions*. Energy and Fuels, Vol. 14, No. 4, pp. 791-800, 2000.
34. Grønli, M.G., M.J. Antal and G. Varhegyi. *A Round-Robin Study of Cellulose Pyrolysis Kinetics by Thermogravimetry*. Ind. Eng. Chem. Res., Vol. 38, No. 6, 1999.

#### **Selected international conference proceedings:**

1. Ströhle, J. Austegaard, A. Grønli, M.; Pettersen, T. Two-dimensional numerical simulations of a moving bed of wood; Published in "Science in Thermal and Chemical Biomass Conversion" Vol 1. pp 252-266, 2006
2. Adam, Judit; Blazso, M.; Meszaros, E.; Stöcker, Michael; Nilsen, M.H.; Bouzga, A.; Hustad, Johan Einar; Grønli, Morten; Sjøblom, Johan; Øye, Gisle. Catalytic pyrolysis of biomass Published in "Science in Thermal and Chemical Biomass Conversion" Vol 2. pp 1325-1332, 2006
3. Bridgwater, A. V.; Grønli, Morten. Strategies for Development and Implementation of Fast Pyrolysis of Biomass. Expert Meeting on Pyrolysis and Gasification of Biomass and Waste; 30.09.2002 - 01.10.2003. Publisert i: *Proceeding of Pyrolysis and Gasification of Biomass and Waste*; 2003
4. Monsen, B., M. Grønli, L. Nygaard and H. Tveit. Use of Biocarbon in the Norwegian Ferroalloy Production. *Paper accepted for oral presentation at the INFACON 9 Conference, Quebec City, Canada June 3-6, 2001.*
5. Melaaen, M. C. and M. Grønli. Modelling and simulation of moist wood drying and pyrolysis. *Published in "Developments in Thermochemical Biomass Conversion", Blackie Academic & Professional, pp. 132-146. 1997.*

#### **Chapters in books**

1. Grønli, Morten; Antal, Jr, Michael Jerry; Schenkel, Yves; Crehay, R. The Science and Technology of Charcoal Production. I: *Fast Pyrolysis of Biomass: A Handbook Volume 3*. Tall Gables, The Sydings Speen, Newbury, Berks RG14 1RZ, UK: CPL Press 2005. ISBN 1872691927. s. 147-178