

Curriculum Vitae

Elisabeth Egholm Jacobsen
b. Kristiansund, Norway

Associate professor, PhD/Dr. Scient.
Department of Chemistry
Norwegian University of Science and Technology
Høgskoleringen 5
N-7491 Trondheim

Office phone +47 73 59 62 56
Private cell phone +47 988 43 559
Home private phone +47 73 93 75 56
e-mail: elisabeth.e.jacobsen@ntnu.no
Private e-mail: elis-jac@online.no



Education

- **1978-1981** Examen artium, Natural sciences program, Atlanten videregående skole, 6511 Kristiansund N, Norway
- **Aug 1982-June 1984 and Feb. 1994-Dec. 1996** Cand. Mag. (BSc) Chemistry, Faculty of Natural Sciences and Technology, Norwegian University of Science and Technology (NTNU)
- **June 1997-Sept. 1999** Cand. Scient. (MSc) Organic chemistry & Biotechnology, Department of Chemistry, NTNU, 7491 Trondheim, Norway.
- **January 2000-May 2004** Dr. Scient. (PhD) Organic chemistry, Department of Chemistry, NTNU, 7491 Trondheim, Norway.

Employments

- **1981-82 and 1984-1994:** Chemist Analysis and R&D laboratory, Lilleborg Ello A/S, Orkla, 6517 Kristiansund N, Norway <http://www.ello.no>
- **1989-1994:** Leader and instructor Total Quality Management, Lilleborg Ello A/S, Orkla, 6517 Kristiansund N, Norway (Leader of ISO9001 certification of Kronull Factory, 1990-1994)
- **2000-2004:** Dr. Scient. grant holder, Department of chemistry, NTNU, 7491 Trondheim, Norway
- **2004-2005:** Head engineer and lecturer, Department of chemistry, NTNU, 7491 Trondheim, Norway
- **2005- present** Associate professor, Department of chemistry, NTNU, 7491 Trondheim, Norway
- **2008-2009:** Visiting associate professor, Sør-Trøndelag University College, 7002 Trondheim

Publications list, international journals with referee

1. Jacobsen, E. E.; Hoff, B. H.; Anthonsen, T. *Enantiopure derivatives of 1,2-alkanediols. Substrate requirements for lipase B from Candida antarctica*. **Chirality** **2000**, **12**, 654-659
2. Jacobsen, E. E.; Anthonsen, T. *Water content influences the selectivity of CALB-catalyzed kinetic resolution of phenoxymethyl-substituted secondary alcohols*. **Can. J. Chem.** **2002**, **80**, 577-581
3. Jacobsen, E. E.; Hoff, B. H.; Riise Moen, A.; Anthonsen, T. *Enantioselective enzymatic preparation of chiral glutaric monocarboxylic acids and amides*. **J. Mol. Catal. B** **2003**, **21**, 55-58
4. Jacobsen, E. E.; van Hellemond, E. W.; Moen, A. R.; Prado, L.C.V; Anthonsen, T. *Enhanced Selectivity in Novozym 435 Catalyzed Kinetic Resolution of Secondary Alcohols and Butanoates caused by the (R)-Alcohols*. **Tetrahedron Lett.** **2003**, **44**, 8453-8455
5. Moen, A. R.; Hoff, B. H.; Hansen, L. K.; Anthonsen, T. and Jacobsen, E. E. *Absolute configurations of monoesters produced by enzyme catalyzed hydrolysis of diethyl 3-hydroxyglutarate*. **Tetrahedron:Asymmetry**, **2004**, **15**, 1551-1554
6. Jacobsen, E. E.; Andresen, L. S. and Anthonsen, T. *Immobilization does not influence the enantioselectivity of CAL-B catalyzed kinetic resolution of secondary alcohols* **Tetrahedron:Asymmetry**, **2005**, **16**, 847-850
7. Freddy Tjosås; Thorleif Anthonsen and Elisabeth E. Jacobsen. *Biocatalytic resolution of Saphenic Acid. Substrate preferences for lipases A and B from Candida antarctica*, **ARKIVOC**, **2008**, **VI**, 81-90
8. Elisabeth E. Jacobsen and Thorleif Anthonsen, *Factors affecting enantioselectivity. Allosteric effects* In: Modern Biocatalysis, Eds. Wolff-Dieter Fessner and Thorleif Anthonsen, **Wiley-VCH**, **2009**, 89-97
9. Sina Maria Lystvet, Elisabeth Egholm Jacobsen, Bård Helge Hoff and Thorleif Anthonsen *Chemoenzymatic synthesis of enantiopure 1-phenyl-2-haloethanols and their esters*, **Biocatalysis & Biotransformation**, **2010**, **28** (4) 272-278
10. Jacobsen, Elisabeth Egholm; Anthonsen, Thorleif; el- Behairy, Mohammed Farrag; Sundby, Eirik; Aboul-Enein, Mohamed Nabil; Attia, Mohamed Ibrahim; El-Azzouny, Aida Abd El-Sattar; Amin, Kamilia M.; Abdel-Rehim, Mohamed. *Lipase Catalyzed Kinetic Resolution of Stiripentol*. **Int. J. Chem.** **2012**, **4** (1) 7-13
11. Elisabeth Egholm Jacobsen, Aleksander Lie, Marte Marie Hansen Frigstad, Torbjørn Ljones, Roland Wohlgemuth and Thorleif Anthonsen. *Desymmetrization of cbz-serinol catalyzed by crude pig pancreatic lipase reveals action of lipases with opposite enantioselectivity*, **J. Mol. Catal. B** **2013**, **85-86**, 134-139
12. Elisabeth Egholm Jacobsen, Mohammed Farrag el-Behairy, Lars Skattebøl and Thorleif Anthonsen. *Enantiopure dihalocyclopropyl alcohols and esters by lipase catalyzed kinetic resolution*. **J. of Biotechnol.** **2013**, **168**, 284-288.
13. Elisabeth E. Jacobsen and Thorleif Anthonsen. *2-C-Methyl-D-erythritol. Produced in plants, forms aerosols in the atmosphere. A new pathway to isoprenoids*. **Biocatalysis & Biotransformation**, **2015**, **33**(4), 191-196
14. Ingvild T. Lund, Pål L. Bøckmann, Elisabeth E. Jacobsen *Highly enantioselective CALB-catalyzed kinetic resolution of building blocks for β -blocker atenolol*, **Tetrahedron**, **2016**, **72**, 7288-7292, 10.1016/j.tet.2016.02.018
15. Elisabeth E. Jacobsen *Enantiopure β -blocker (S)-metoprolol by lipase catalysis*, **New Biotechnology** **33S** (2016) p S96.

16. Jonas Persson, Per-Odd Eggen, Bjørn Hafskjold and Elisabeth E. Jacobsen *Development of an inventory for Alternative Conceptions among students in chemistry*, **International Journal on Math, Science and Technology education LUMAT**, 2017, 5, 1-11
17. Jonas Persson, Eirik Wattengård and Elisabeth E. Jacobsen. *Learner's viewing behaviour in watching instructional video*, **UNIPED** 2017, 40 (3), 129-139
18. Elisabeth E. Jacobsen and Thorleif Anthonsen. *Single Enantiomers from Racemates. Lipase catalysed Kinetic Resolution of Secondary Alcohols. In situ Stereoinversion*, **Trends in Organic Chemistry**, 2017, 18, 71-83
19. Anne Fylkesnes, Fredrik H. Blindheim, Adele Kauffmann, Thorleif Anthonsen and Elisabeth Jacobsen, *Direct Ketalisation Of Enantiopure 1,2-Epoxides; Problems With Racemisation*, **Manuscript in preparation**
20. Fredrik Heen Blindheim, Pål L. Bøckmann, Ingvild T. Lund Bysting and Elisabeth E. Jacobsen *Chemo-enzymatic synthesis of enantiopure β -blockers (S)-metoprolol and (S)-atenolol*. **Manuscript in preparation**
21. Fredrik Heen Blindheim, Wei Zhu, Sigvart Evjen and Elisabeth E. Jacobsen, *Chemo-Enzymatic Synthesis of Enantiopure Synthons as Precursors for (R)-Clenbuterol and other β -2 agonists*. **Manuscript submitted**

Books/proceedings

1. Jacobsen, E. E.; *Synthesis of biologically active compounds by enzyme catalysis*. NTNU 2004, ISBN 82-471-6309-8 (print.) ISBN 82-471-6307-1 (electr.) 86 p
2. Lykknes, Annette; Kvittingen, Lise; Jacobsen, Elisabeth Egholm. *Founding of a laboratory at Norway's Institute of Technology: Laboratory practices 1910-1936* In: 5th International Conference on History of Chemistry: " Chemistry, Technology and Society" **Proceedings. Estoril & Lisboa: SPQ - Sociedade de Portuguesa Química 2006 ISBN 972-99080-8-7. 214-222**
3. Jacobsen, Elisabeth Egholm. *Enantiopure biologically active compounds by lipase catalysis*. **Lambert Academic Publishing 2012 (ISBN 978-3-659-28136-5) 147 pp.**
4. Thorleif Anthonsen and Elisabeth Jacobsen eds, *Natural product chemistry*, DeGruyter Verlag, **In preparation**

Popular science articles/proceedings

1. Jacobsen, Elisabeth Egholm; Anthonsen, Thorleif. *Naturskapte aerosoler. 2-C-Metyl-D-erytritol fra Convolvulus glomeratus. Danner aerosoler i atmosfæren. En ny vei til isoprenoider*. **Tidsskrift for Kjemi (6) 2014, 12-15.**
2. Persson, Rolf Jonas; Wattengård, Eirik; Jacobsen, Elisabeth Egholm. *For generell og organisk kjemi: Instruksjonsvideoer for bruk i laboratorieundervisning*. **Tidsskrift for Kjemi 2017 (3) p. 16-19**
3. Elisabeth Jacobsen, Jonas Persson and Martine Fryer, *WileyPLUS digital learning system with ORION in Organic chemistry. Increase of learning outcome? Læring om Læring nr 1, 2007, 107-112*, **Proceedings Læringsfestivalen, NTNU, Trondheim, Norway, May 8-9, 2017**
4. Kiviniemi, Tiina, Eggen, Per Odd, Persson, Jonas, Hafskjold Bjørn and Jacobsen, Elisabeth, *Development of a Chemistry Concept Inventory for General Chemistry Students at Norwegian and Finnish Universities*, **Proceedings from The Nordic Research Symposium on Science Education, NTNU, Trondheim, Norway, June 6-9, 2017**

Invited lectures international conferences

1. Jacobsen, E. E. *Significance of substrate structure, acyl donor and water activity for E in resolutions of secondary alcohols catalyzed by CALB* **7th Nordic Conference on Biocatalysis in Organic Chemistry, April 1999, Teveltunet fjellstue, Norway.**
2. Jacobsen, E. E.; *Lipase catalyzed kinetic resolution as a means to obtain enantiopure secondary alcohols* **Organic Transformations: Selective Processes and Asymmetric Catalysis, COST D12 Workshop, October 2000, Fefor, Norway.**
3. Jacobsen, E. E. *Changing Selectivity in Candida antarctica lipase B Catalyzed Kinetic Resolution of Secondary Alcohols and Butanoates* **Working Group Meeting: "Solving the problems enzymes encounter in organic solvents" COST D25/0004/02, February 2004, Delft, The Netherlands**
4. Jacobsen, Elisabeth Egholm; Moen, Anders Riise; Anthonsen, Thorleif. *Biocatalysis for synthesis of enantiopure fine chemicals and drugs* **XIV Congresso Nazionale di Catalizi, Italy 06.06.2004 - 10.06.2004**
5. Jacobsen, Elisabeth Egholm; Kvittingen, Lise; Lykknes, Annette. *Collection, registration and preserving of historical equipment from the former Organic-chemistry laboratory, NTH.* **Seminars of "Forum for history of knowledge", NTNU 13.12.2004**
6. Jacobsen, Elisabeth Egholm. *Important small molecules. Enantiopure Building blocks for biologically active compounds.* **Training School in Biocatalysis, Certosa de Pontignano, Siena, Italy 28.04.2007 - 03.05.2007**
7. Jacobsen, Elisabeth Egholm, *Enhancement of enantioselectivity. Allosteric effects*, **2nd International Conference "Biocatalysis in Non-Conventional Media" June 12–15, 2008, Moscow, Russia**
8. Jacobsen, Elisabeth Egholm; *Synthesis of chiral drugs by Candida antarctica lipase A catalysis.* **7th CeBiTec Symposium: Bio-integrated Organic Synthesis in Industry;; Bielefeld, Germany, 2012-12-17 - 2012-12-19**
9. Jacobsen, Elisabeth. *Antiepileptic drug (R)-Stiripentol by Lipase Catalysis*, **Drug Discovery & Therapy World Congress 2013, JUNE 3 - 6, 2013, BOSTON, USA.**
10. Anthonsen, Thorleif; Jacobsen, Elisabeth Egholm. *Biocatalysis for synthesis of chiral building blocks for drugs and the significance of chirality for better understanding of the formation of aerosols.* **5th EuCheMS Chemistry Congress; 2014, Istanbul. Turkey, Aug. 31- Sept. 4.**
11. Jacobsen, Elisabeth Egholm. *Chemo-enzymatic synthesis of enantiomerically pure drugs and other bioactive compounds.* **World Gene Convention 2015; Qingdao, China, November 13.- 15. 2015**
12. Jacobsen, Elisabeth Egholm; Bøckmann, Pål L.; Lund, Ingvild; Blindheim, Fredrik Heen. *Chemo-enzymatic synthesis of enantiopure β -blockers atenolol and metoprolol by a green biocatalytic method.* **World Gene Convention 2016; Shanghai, China, November 3.-5.**
13. Jacobsen, Elisabeth Egholm; Bysting, Ingvild; Bøckmann, Pål; and Blindheim, Fredrik Heen. *Chemo-enzymatic synthesis of enantiopure β -blockers atenolol and metoprolol.* **BIOCATNET Industrial Biotechnology in the Development of Advanced Materials; Manchester, United Kingdom, January 16-17, 2017**
14. Jacobsen, Elisabeth Egholm; Bysting, Ingvild; Bøckmann, Pål; and Blindheim, Fredrik Heen. *Enantiopure drugs and bioactive compounds by chemo-enzymatic synthesis.* Cooperation Workshop AFOB-EFB-ESAB; **Institute of Biochemical and Biomedical Engineering Chang Gung University, Taoyuan City, Taiwan, April 11, 2017**
15. Jacobsen, Elisabeth Egholm; Bysting, Ingvild; Bøckmann, Pål; and Blindheim, Fredrik Heen.. *Synthesis of enantiopure stiripentol, atenolol and metoprolol by asymmetrisation and/or kinetic*

resolutions. Cooperation Work shop AFOB-EFB-ESAB nr 2; **Department of Chemical Engineering, National Chung Hsing University, Taichung, Taiwan, April 12, 2017**

Lectures national conferences

1. Jacobsen, E. E.; *Biocatalysis for Chiral Building Block for Atorvastatin* **18th Norwegian Organic Chemistry Winter Meeting, Fefor, Norway. January 2003.**

Invited lectures- Trondheim conferences and meetings

1. Jacobsen, Elisabeth E. *Kjernemagnetisk resonansspektroskopi.* **Realfagkonferansen 2013; 05-02 -NTNU.**
2. Jacobsen, Elisabeth E. *Fra industrikjemiker til akademiker-Et arbeidsliv i labfrakk.* **Volvox & Alkymisten Motivator-god kjemi; NTNU, 2013-03-12.**
3. Jacobsen, Elisabeth Egholm. *Reaksjonsmekanismer i organisk kjemi.* **Kjemiolympiaden - treningsleir 2015; 01-15.**
4. Jacobsen, Elisabeth E. *Organiske reaksjonsmekanismer.* **Realfagkonferansen NTNU 2015; 04-27.**
5. Jacobsen, Elisabeth E. *Naturens molekyler-våre legemidler-hvor kommer de fra?* **Byåsen vgs, November 6, 2015.**
6. Jacobsen, Elisabeth E. *Organiske reaksjoner.* **Kjemiolympiaden NTNU 2016; 01-13**
7. Jacobsen, Elisabeth Egholm. *Reaksjonsmekanismer i organisk kjemi.* **Fagnettverk i kjemi og biologi i Sør-Trøndelag Fylkekommune, April 13, 2016.**
8. Jacobsen, Elisabeth E, Sigrid S. Løvland, og Fredrik H. Blindheim. *Organisk kjemi-hva kan vi bruke lærdommen til?* **Byåsen vgs, November 6, 2016.**
9. Jacobsen, Elisabeth E. *Organiske reaksjoner.* **Kjemiolympiaden NTNU 2017; 01-11**
10. Jacobsen, Elisabeth E. *Organiske reaksjonsmekanismer.* **Kjemiolympiaden NTNU 2018; 01-15**

Scientific posters-international conferences

1. Jacobsen, E. E.; Johansen, L.; Riise Moen, A.; Anthonsen, T. *Enzyme Catalyzed Synthesis of Enantiopure C-4 and C-5 Building Blocks for Biologically Active Compounds* **Applied Biocatalysis 1980-2020: The future impact of modelling proteins and thermodynamics, June 2001, NTNU, Trondheim, Norway.**
2. Jacobsen, E. E.; van Hellemond, E. W.; Anthonsen, T. *The Enantioselectivity changes with Substrate Conversion during Kinetic Resolution of Secondary Alcohols and their Butanoates* **Applied Biocatalysis, Stereoselective and Environmentally Friendly reactions catalysed by enzymes, May 2002, Como, Italy.**
3. Jacobsen, E. E.; Riise Moen, A.; Anthonsen, T. *Enantiopure building blocks from dicarboxylic esters* **Applied Biocatalysis, Stereoselective and Environmentally reactions catalysed by enzymes, May 2002, Como, Italy.**
4. Jacobsen, E. E.; Riise Moen, A.; Anthonsen, T. *Enantiopure building blocks from dicarboxylic esters. Biocatalytic Ways to the Cholesterol-Lowering Drug Atorvastatin* **Applied Biocatalysis, 2002, Zürich, Sveits.**
5. Jacobsen, E. E.; van Hellemond, E. W.; Moen, A. R.; Anthonsen, T. *The (R)-alcohol enhances the selectivity in CAL-B catalyzed kinetic resolutions of secondary alcohols and their butanoates.* **Biotrans 03 and COST D25 Workshop, June-July 2003, Olomouc, Czeckia**
6. Felberg, H. S.; Jacobsen, E. E.; Berge, R. K.; Johansen, B. and Anthonsen, T. *Inhibitors of Cytosolic Phospholipase A₂ – Potent Candidate Anti-inflammatory Drugs* **19th Norwegian Organic Chemistry Winter Meeting, Røros, January 2004**
7. Andresen, L. S.; Nuriye, A.; Jacobsen, E. E.; and Anthonsen, T. *High Enantiopurity of Drug*

- and Pheromone Building Blocks Produced by Lipase Catalyzed Resolutions* **19th Norwegian Organic Chemistry Winter Meeting, Røros, January 2004**
8. Haugseth, Ø.; Jacobsen, E. E. and Anthonen, T. *Towards a Chemoenzymatic Synthesis of Enantiopure (S)-3-Hydroxy-tetradecanoic Acid from Racemic Starting Materials* **19th Norwegian Organic Chemistry Winter Meeting, Røros, January 2004**
 9. Kildahl-Andersen, Geir; Moen, Anders Riise; Jacobsen, Elisabeth Egholm; Anthonen, Thorleif. *Chemoenzymatic Methods for Synthesis of Enantiopure Biologically Active Compounds. Study of Enzyme Mechanism.* **Norwegian Organic Chemistry Autumn Meeting, Final Seminar of the NFR-program: Catalysis and Organic Synthetic Chemistry, Gardermoen, Oslo 02.11.2006 - 03.12.2006**
 10. Kildahl-Andersen, Geir; Moen, Anders Riise; Jacobsen, Elisabeth Egholm; Anthonen, Thorleif. *Chemoenzymatic Methods for Synthesis of Enantiopure Biologically Active Compounds. Study of Enzyme Mechanism.* **22nd Norwegian Organic Chemistry Winter Meeting Røros, 11.01.2007 - 14.01.2007**
 11. Jacobsen, Elisabeth Egholm; Angelsen, Ragnhild Strand; Anthonen, Thorleif. *Studies of the catalytic centre of lipase A from Candida antarctica.* **22nd Norwegian Organic Chemistry Winter Meeting, Røros, 11.01.2007 - 14.01.2007**
 12. Lystvet, Sina Maria; Hoff, Bård Helge; Anthonen, Thorleif; Jacobsen, Elisabeth Egholm. *Chemo-enzymatic synthesis of enantiomerically pure haloalcohols* **23rd Norwegian Organic Chemistry Winter Meeting, Geilo, Norway 10.01.2008 - 13.01.2008.**
 13. Lie, Aleksander; Ljones, Torbjørn; Hoff, Bård Helge; Anthonen, Thorleif; Jacobsen, Elisabeth Egholm. *Allosteric Enhancement of Enantioselectivity* **23rd Norwegian Organic Chemistry Winter Meeting, Geilo, Norway 10.01.2008 - 13.01.2008.**
 14. Lystvet, Sina Maria; Hoff, Bård Helge; Anthonen, Thorleif; Jacobsen, Elisabeth Egholm. *Chemo-enzymatic synthesis of enantiomerically pure haloalcohols catalyzed by Candida antarctica lipase A and B* **2nd International Conference "Biocatalysis in Non-Conventional Media" 12.06–15.06.2008, Moscow, Russia .**
 15. Lie, Aleksander; Ljones, Torbjørn; Anthonen, Thorleif; Jacobsen, Elisabeth Egholm. *Allosteric Enhancement of Enantioselectivity* **Biotrans 2009, 5.07-9.07. 2009, Bern, Switzerland.**
 16. Lie, Aleksander; Frigstad, Marte Marie Hansen; Jacobsen, Elisabeth Egholm; Anthonen, Thorleif. *Isoenzymes of Porcine Pancreatic Lipase with opposite Stereoselectivity* **25th Norwegian an Organic Chemistry Winter Meeting, Fefor Vinstra, Norway 07.-10.01.2010.**
 17. Jacobsen, Elisabeth Egholm; Lie, Aleksander; Frigstad, Marte Marie Hansen; Anthonen, Thorleif. *Desymmetrisations catalysed by Porcine Pancreatic Lipase*, **Frontiers of Chemistry: From Molecules to Systems, Paris, France, May 21, 2010.**
 18. Jacobsen, Elisabeth Egholm; Lie, Aleksander; Frigstad, Marte Marie Hansen; Anthonen, Thorleif. *Isoenzymes from Crude Porcine Pancreatic Lipase with Opposite Stereoselectivity*, **The 6th International Conference on Renewable Resources and Biorefineries, June 7-9, 2010, Düsseldorf, Germany.**
 19. Jacobsen, Elisabeth, Sundby, Eirik and Anthonen, Thorleif. *Biocatalysis for Green chemistry: 20 years of environmental friendly synthesis of biologically active molecules and pharmaceuticals in Trondheim, Norway.* **The World Forum 2010, St. Johns College, Cambridge University, England 17.-22.08.2010.**
 20. Mohammed Farrag el-Behairy, Elisabeth Jacobsen, Eirik Sundby and Thorleif Anthonen, *Antiepileptic drug (R)-Stiripentol from lipase catalyzed kinetic resolution* **26th Norwegian Organic Chemistry Winter Meeting, Skeikampen, Norway 06.-09.01.2011.**
 21. El-Behairy, Mohammed Farrag; Jacobsen, Elisabeth Egholm; Sundby, Eirik; Skattebøl, Lars; Anthonen, Thorleif. *Kinetic resolution of dihalocyclopropyl alcohols.* **COST Action CM0701**

- Biocatalysis Summer Training School; Siena, Italy, 2011-04-27 - 2011-05-01.**
22. Jacobsen, Elisabeth Egholm; *Synthesis of chiral drugs by Candida antarctica lipase A catalysis. 7th CeBiTec Symposium: Bio-integrated Organic Synthesis in Industry: 2012-12-17 - 2012-12-19.*
 23. Jacobsen, Elisabeth Egholm. *Chemo-enzymatic synthesis of enantiomerically pure bicyclobutanes, 16th European Congress on Biotechnology, Edinburgh, Scotland, 2014-07-13-2014-07-16.*
 24. Lund, Ingvild Teigen; Jacobsen, Elisabeth Egholm. *Enantiopure building blocks for beta-blocker atenolol. , 12th International Symposium on Biocatalysis and Biotransformations-Biotrans 2015, Vienna, Austria, July 26-31 2015.*
 25. Jacobsen, Elisabeth Egholm; Bøckmann, Pål Lønnegraff; Lund, Ingvild Teigen. *Enantiopure beta-blocker atenolol by lipase catalysis. Organisk kjemisk vintermøte 2016; 01-07 -01-10.*
 26. Blindheim, Fredrik Heen; Jacobsen, Elisabeth Egholm. *Synthesis of building block for beta2-agonist clenbuterol. Organisk kjemisk vintermøte 2016; 01-07 - 01-10.*
 27. Pål L. Bøckmann, Fredrik H. Blindheim, Ingvild T. Lund, Nicolai E. Alsaker, Natalie Østrem, Ingvild Hoff and Elisabeth E. Jacobsen. *β -Antagonist (S)-metoprolol-Enantiopure building blocks for drugs. Training School in Biocatalysis, Certosa de Pontignano, Siena, Italy 26.04. - 01.05.2016*
 28. Elisabeth E. Jacobsen, Fredrik H. Blindheim, Sigvart Evjen and Pål L. Bøckmann. *Enantiopure β -Blocker (S)-Metoprolol and Chiral Building Blocks by Lipase Catalysis. 17th European Congress on Biotechnology, Krakow, Poland, 2016-07-3-2014-07-07.*
 29. Elisabeth. E. Jacobsen, Rolf Jonas Persson, and Martine Fryer. *WileyPLUS digital learning system with ORION in Organic chemistry. Increase of learning outcome? Læringsfestivalen, NTNU, May 8-9, 2017*
 30. Elisabeth E. Jacobsen and Fredrik H. Blindheim, *Enantiopure Building Blocks for β -Agonist (R)-Clenbuterol, 13th International Symposium on Biocatalysis and Biotransformations-Biotrans 2017, Budapest, Hungary, July 9-13, 2017.*

Instructional teaching videos

1. Jacobsen, Elisabeth Egholm; Persson, Rolf Jonas; Wattengård, Eirik. *Bruk av analysevekt. Institutt for kjemi og NTNU Multimediesenter, Video for Kvalitet, NTNU 2014 .*
2. Jacobsen, Elisabeth Egholm; Persson, Rolf Jonas; Wattengård, Eirik. *Titring i Generell kjemi laboratorium. Institutt for kjemi og NTNU Multimediesenter, Video for Kvalitet, NTNU 2015.*
3. Jacobsen, Elisabeth Egholm; Persson, Rolf Jonas; Wattengård, Eirik, Fredrik Heen Blindheim *Flashkromatografi i organisk kjemi. Institutt for kjemi og NTNU Multimediesenter, Video for Kvalitet, NTNU 2017.*

4.

Teaching duties

1. Emneansvarlig KJ2022/TKJ4115 Spectroscopic methods in organic chemistry, **2005-2007**, 16-20 students.
2. Emneansvarlig TKJ4125 Natural product chemistry, **2005-2007**, 11-20 students.
3. KJ1020 Organic chemistry, laboratory leader and exercises leader, **1997-2007**, 20 students x 9.
4. KJ1000 General chemistry, laboratory leader and exercises leader, **2000-2007**, 30 students x 7.
5. KJ2053 Chromatography I, laboratory leader, **2005**, 20 students.
6. KJ2024 Organic chemistry laboratory II, laboratory leader, **1998**, 4 students.
7. KJ3058 Chromatography II, laboratory leader, **1998**, 10 students.
8. Examinator KJ1000, mid. term exam and main exam, **2005-2007**, 250 students.

9. Emneansvarlig/faglærer KMT 001M Kjemi og Miljølære 107 students, **2008**.
10. Emneansvarlig faglærer KMT 001M Kjemi og Miljølære 150 students, **2009**.
11. Emneansvarlig/ faglærer LO076H Analytisk kjemi 60 students, **2009**.
12. Examiner chromatography and spectroscopy courses, **2003-2011**
13. KJ2050 Analytical chemistry laboratory leader (**Fall 2012**, 56 students)
14. Emneansvarlig KJ1000 General chemistry 15 ECT (**Spring 2013**: 11 students. **Fall 2013**: made new teaching material-234 stud-219 exam-197 passed, **spring 2014**: 16 students- 14 passed).
15. Emneansvarlig TKJ4102 Organic chemistry 7.5 ECT (**Fall 2013**: made new teaching material 114 stud-, **summer 2014**: 8 students, **autumn 2014**: 124 stud, **summer 2015**: 10 students, **autumn 2015**: 117 students, **summer 2016**:11 student, **fall 2016**: 130 students, **summer 2017**: 4 stud, **fall 2017**: 130 stud)).
16. Fagansvarlig organic part TMT4122 General and organic chemistry laboratory, (**fall 2013**: 73 students passed).
17. KJ3092 Natural product chemistry 7.5 ECT (**Fall 2013**: teaching material made in 2005:-4 students supervised -1 exam, **spring 2014**: 1 student, **spring 2015**: 1 student).
18. TKJ4520 Project in organic chemistry 15 ECT (**Spring and fall 2013**: supervision-4 students, **fall 2016**: 1 student).
19. TKJ4130 Organic chemistry laboratory projects, 7.5 ECT, (**Spring 2013**: Supervision 1 student, **spring 2014**: 2 students, **spring 2015**: 3 students, **spring 2016**: 2 students), **spring 2017**: 4 students).
20. Examiner: Master of Science exam: Henrik Linde, **June 5, 2014**.
21. Examiner: KJ3092 Biocatalysis in organic chemistry, Kent Ove Sylthe, **June 10, 2014**.
22. Laboratory leader KJ1020 15 ECT, 20 students, **spring 2015**.
23. Faglærer/emneansvarlig TKJ4130 7.5 ECT, 12 students, **spring 2016**
24. Emneansvarlig/faglærer TKJ4130 7.5 ECT, 23 students, **spring 2017**
25. Emneansvarlig/faglærer TKJ4130 7.5 ECT, 33 students, **spring 2018**
26. Supervisor KJ2900, 7.5 ECT, 5 students, **spring 2016**.
27. Supervisor KJ2900, 7.5 ECT, 1 student, **spring 2017**.
28. Examiner KJ1020 spring and autumn exams. **From spring 2013**.
29. Video productions for laboratory techniques General and organic chemistry **From fall 2013**.

Master- Erasmus and PhD students supervised/co-supervised

1. Jarle Holt, MSc **2000-2002**
2. Anders Vik, MSc **2000-2002**
3. Anders Riise Moen, MSc **2001-2003**, PhD **2007**
4. Erik van Hellemond, Erasmus student **2003**
5. Lucia V. Prado, Erasmus student **2003**
6. Ahmed Nuriye Lærting, **2004-05**
7. Tom Colin Soosainather, MSc **2003-2005**
8. Lars Johansen, MSc **2001-2003**
9. Camilla Skjærpe, MSc **2001-2003**
10. Hanne Solvang Felberg, MSc **2002-2004**
11. Liv Siri Andresen, MTKJ **2004**
12. Freddy Tjosaas, MSc **2003-2005**
13. Gabrielle Reijerink, MSc **2003-2005**
14. Stephanie Uhlmann, Erasmus student **2006**
15. Marte M. F. Hansen, MSc **2005-2007**
16. Håkon Midtaune, MSc **2005-2007**

17. Øyvind Haugseth-2005
18. Ragnhild Beate Strand, MSc **2005-2007**
19. Geir Kildahl -Andersen, PhD **2004-2007**
20. Sina Maria Lystvet, MSc **2006-2008**
21. Aleksander Lie, MSc **2007-2009**
22. Mohammed Farrag el-Behairy, RSC Yggdrasil PhD **2010-2011**
23. Karin Glansberg, MTKJ **2013**
24. Peggy Li, Exchange student **2013**
25. Sherry Chan, Exchange student **2013**
26. Rong Tan, Exchange student **2013**
27. Sigve Eliassen, MLREAL **2014**
28. Erik Tveit, MSc **2013-2015**
29. Ingvild Teigen Lund, MTKJ **2015**
30. Pål Lønnegraff Bøckmann, MSc **2014-2016**
31. Fredrik Heen Blindheim, MSc **2015-2017**
32. Adèle Kauffmann, ERASMUS student **April 2016-June 2016**
33. Ole Christian Bråtveit, MTKJ **2016**
34. Sigrid Løvland, MSc **2016-2018**
35. Tobias Gmelch, PhD candidate, Technical University of Munich, Germany, co-supervisor/mentor, **2016-2019**
36. Guro Buaas Austli, MTKJ 2017-2018
37. Thomas Haugen, MTKJ 2018-2019
38. Mari Bergan Hansen, MSc 2017-2019

Administrative duties

1. HSE Instructions and routines Biocatalysis laboratory D2-152 and D2-158, **June 2000-revised 2009, 2013, 2014 and 2016.**
2. Applied Biocatalysis 1980-2020: The future impact of modelling proteins and thermodynamics, NTNU, Trondheim, Norway. Administrative leader and accounting, Conference organised by The Biocatalysis group, NTNU, **June 2001**
3. HSE instructions for laboratory course leaders and -assistants KJ1020 laboratory, **spring 2002.**
4. HSE course SINTEF, **2002.**
5. HSE instructions for laboratory leadres and assistants for KJ1020 (MNKKJ120), **2002**
6. Quality insurance of KJ1020 lab course with INDØK, **2003**
7. HSE group NT-faculty, **fall 2005.**
8. Course in Media Strategy with Christian Fossen and Cathrine Adair, one day course **2006.**
9. Organic chemistry winter meeting, Røros, Norway, Member of organising committee and responsible for budget and finances. Conference organised by The Biocatalysis group, NTNU. **January 2007.**
10. Wiley Focus group, *Functional Content in Chemistry*, **Maison de la Chimie Paris, May 20, 2010.** (Invited by vice president Robert Long)
11. Attended IKJ stand Kjemidagen, NTNU, **October 30, 2012.**
12. Lay judge, Gulating lagmannsrett, **Bergen, January 7-February 28, 2013.**

13. Arranged 1-day symposium **30.04.2013** at NTNU with professor Dr. Barbara Nozière, IRC Lyon, France with lecture title: *Organic compounds and their chemical transformations in the Earth atmosphere Impact on climate change.* Discussions of collaboration all rest of the day.
14. Leader of PhD defence, Majid Syed Bukhari, **Rådssalen NTNU, May 2013.**
1. Section Chair Drug Discovery & Therapy World Congress 2013, **JUNE 3 - 6, 2013, BOSTON,**

USA.

15. Assisted Vitensenteret in making the Periodic table of elements from real chemicals. M Sc. Lars Pedersen, Vitensenteret, Trondheim. **Fall 2013**.
16. Member of project "Video for kvalitet", Skolelaboratoriet, NTNU, **fall 2013-present**.
17. Attended stand IKJ Kjemidagen. **NTNU October 30, 2013**.
18. Attended stand IKJ Kjemidagen VIKO NTNU **January 23, 2014**.
19. Excursion leader for Chemistry students spring **2014**. Committee started work April 2013, excursion with 73 students to Singapore and Malaysia, **April 5-12, 2014**.
20. Attended stand IKJ Kjemidagen. **NTNU October 29, 2014**.
21. Assisted Vitenskapsmuseet in registration of historical items from Department of chemistry, jfr PhD Merete Moe Henriksen, fall **2013** and spring **2014**.
22. Leader of PhD defence, Morten Karlsen, **December 12, 2014**.
23. Attended stand IKJ Kjemidagen. **NTNU October 26, 2016**.
24. Excursion leader for 72 MTKJ Chemistry students spring **2017** to Singapore and Malaysia, **April 1-8, 2017**.
25. Organiser of Work Shop in Flow chemistry, co-organised by Nerliens Mezansky AS (Rune Hofsløkken) Department of chemistry, 40 attendants, **April 26-27, 2017**,
26. Administrative leader PhD defence committee Thomas Aleksander Bakka. June-September 2017, leader of defence **September 15, 2017**.

Member of scientific committees (2-3 meetings /year)

1. European Federation of Biotechnology, Section on Applied Biocatalysis (EFB, ESAB)
2. COST ACTION CM1303 Systems Biocatalysis, Management committee member, working group member Working group 2.

Journal associate editor/editor (10-15 manuscripts/year)

1. Biocatalysis & Biotransformations (Taylor & Francis)
2. Cogent chemistry (Taylor & Francis)

Journal reviewer (reviewing approx. 20 manuscripts/year)

1. Biocatalysis and Biotransformations (Taylor & Francis IF 1.17)
2. Applied Sciences (Multidisciplinary Digital Publishing Institute (MDPI), IF 1.7)
3. Journal of Molecular Catalysis B: Enzymatic (Elsevier, IF 2.8)
4. New Journal of chemistry (Royal Society of Chemistry, RSC, IF 2.8)
5. Enzyme Engineering (OMICIS GROUP, IF 1.0)
6. Journal of Biotechnology (Elsevier, IF 3.2)
7. Catalysts (MDPI, IF 2.0)
8. Energies (MDPI, IF ?)
9. Molecules (MDPI, IF 2.42)
10. International Journal of Chemistry and Materials Research (PAK PUBLISHING)
11. International Journal of Molecular Sciences (MDPI, IF 2.9)
12. Organic Process Research & Development (American Chemical Society, ACS, IF 2.9)
13. Journal of Separation Science (Wiley VCH, IF 2.3)
14. Nanomaterials (MDPI, IF 3.55)
15. Symmetry (MDPI)

Scientific organisations-memberships

1. American Chemical Society (ACS), **2010-**
2. American Association for the Advancement of Science, (AAAS), **2013-**
3. European Federation of Biotechnology, Section on Applied Biocatalysis (EFB, ESAB), **2001-**
4. Norwegian Chemistry Association, Section for organic chemistry (NKS-FOK) **2000-**
5. Asian Federation of Biotechnology (AFOB) **2016-**
6. BIOCATNET ([Network in biocatalyst discovery, development and scale up, BBSRC NIBB](#))