



CONTENT

PAGE	
1	SPE NEWSLETTER MAY 2011
2	Visit by SPE global president, Alain Labastie
3	Visiting the Technical University of Denmark
4	Intelligent Wells – A Realistic Vision for the Next 10 Years
8	Waterflooding and Formation Damage Workshop
9	Summer party
9	East Meets West
11	Annual General Meeting May 17th 2011

MAY 2011

The Season 2010-2011 is approaching the end, and I am truly thrilled by our achievements and activity level. We started out by hosting a CO₂EOR workshop at DTU, where it became clear that the Danish Oil & Gas business is up for the challenging future. Furthermore, on top of our normal monthly meetings we have also been hosts for 1½ day's visit from the international SPE President Alain Labastie, and you can read much more about his visit in this issue. And we are not even finished yet. In May (26-27) we will host a 2-day workshop on Water Management and Formation Damage given by one of the worlds leading experts Pavel Bedrikovetsky from Australia. Please remember to sign up – you can see how in this issue.

Lars Mangal from Welltec was the main speaker in March, where he presented Welltecs ambition for a high return on capital in the Oil and Gas business, - by reducing the time to take a well on

stream. After the dinner Gergios Kontogeorgis from DTU gave a historical perspective and view into the future of the use of thermodynamic models.

In April GEUS hosted a well visited Monthly meeting, where Peter Johannesen spoke about the Jurassic in the Danish North Sea. The talk was very illustrative/educative, as the island Rømø was used as case study, and it became evident how tidal-dominated barrier islands can lead to thick successions of good quality reservoir rock. Before the dessert, Peter Helmer Steen introduced the audience to Nordsøfonden and their preparation for 2012.

Please also remember to sign up for our summer party. This year we will revisit the Regatta Pavillion in Bagsværd, and I am looking forward to see many of you.

Have a nice summer.

Morten G. Stage, Section Chairman ◀

FUTURE MEETINGS

FOR MORE INFORMATION
REGARDING THE PROGRAMME
SEE PAGE 6



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Visit by SPE global president, Alain Labastie

It was the SPE Copenhagen section's great honour to host Mr Labastie for two days, during which he was able to spread the SPE message and receive an introduction to the hydrocarbon industry in Denmark. Mr Labastie spent his first day working through the SPE section chronologically and began the day with an address to the student chapter at DTU. Mr Labastie punctured some of the myths of the hydrocarbon industry by presenting evidence showing that the oil and gas industry was neither a mature industry nor in its twilight years. He went on to explain how our current growth model is built on energy and why there will be an increasing demand for oil and gas in the future and therefore an increasing demand for talented technical staff. It was then on to talk with the Center for Energy Resources Engineering faculty members. Mr. Labastie's message here was that more science and specialists would be needed in the oil and gas industry as we face bigger challenges and that a greater collaboration with academia is a prerequisite.

Mr. Labastie was then given the opportunity to tour some of the impressive laboratory facilities at the DTU before meeting with various senior oil and gas industry leaders over lunch.



The afternoon saw a tour of the impressive DONG energy Avedøre power station which is able to produce energy from coal, wood pellets or agricultural straw, before being introduced to DONG's oil and gas activities.

Maersk Oil then hosted Mr. Labastie where he addressed the Young Professionals and advised them to take control of their own future and career. He went on to say that thirty years of experience had taught him not to entrust something this important to other parties (such as HR). Mr. Labastie was then able to address the entire Copenhagen SPE section and touch on subjects as varied as the Macondo disaster to the future of the hydrocarbon industry and emphasised the fact that SPE is volunteer driven.

The entire day was rounded off with a lovely dinner at the Toldboden restaurant where SPE members had a chance to mingle and meet Mr. Labastie in a more informal setting.

On Mr. Labastie's second day he had a tour of the Welltec offices in Allerød before taking part in an EOR workshop at Maersk Oil where his vast experience on EOR was put to good use.

We would like to thank Mr. Labastie for visiting Copenhagen and those who hosted and helped make the two days such a success.



Visiting the Technical University of Denmark

The fourth of April, SPE President Alain Labastie from Total, visited the Technical University of Denmark. The visit was organized by CERE- Center for Energy Resources Engineering, DTU. The president gave the lecture "SPE and You" which was primarily addressed at outlining the challenges and career opportunities in the oil- and gas industry for students. He furthermore presented how the SPE membership may be an invaluable help in building a career through e.g. the SPE eMentoring program. The discussion was open and productive. We discussed the reputation of the industry and how that affected the students' choice of career paths, spiced with the problem with an aging work force, where industry professionals may retire without passing over their expertise and experience to new engineers. Additionally, we had an interesting discussion on legislation and worldwide issues related to the industry, especially in relation to environmental issues. After the lecture, Mr. Labastie met with the Faculty members of CERE and the SPE Student Chapter Chairman. Finally he was given a tour of the laboratories at DTU Chemical and Biochemical Engineering, where he e.g. saw a demonstration of kinetic gas hydrate inhibitors.



INTELLIGENT - A REALISTIC VISION FOR THE

More than a decade has gone by since the early days of intelligent well technology. Novel applications such as in-situ gas-lift, concurrent production of multiple targets from a single well slot, concurrent injection, inflow control in horizontal wells, and remote monitoring have made important contributions to the performance of specific assets and fields. However, it is difficult to assert that these technologies have made a huge impact globally.

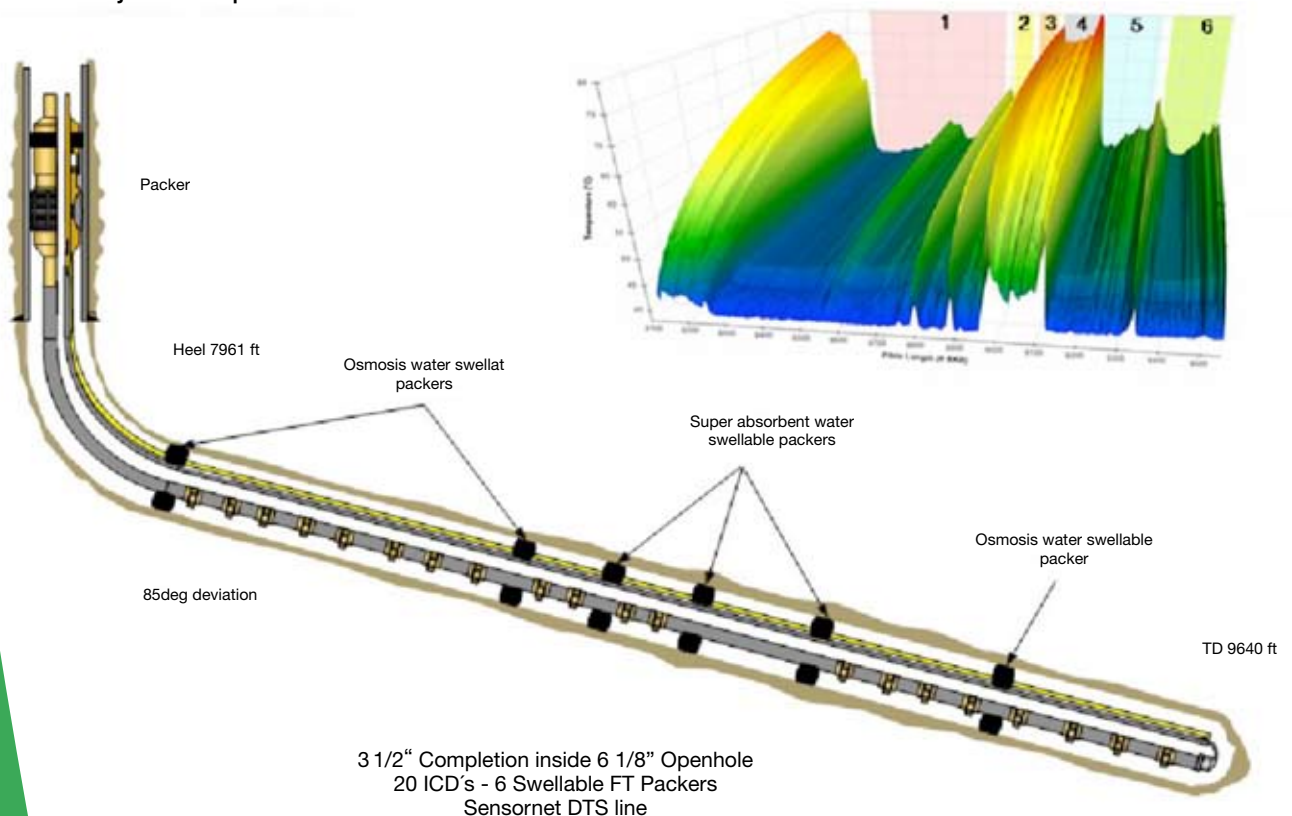
Global oil production is dominated by mature fields, and mature fields have been largely bypassed by these technologies. Often we presume mature implies marginal, but in fact the most prolific fields in the world are mature, i.e., post primary recovery. The top 100 fields in the world account for nearly 50% of global crude oil production and nearly all are mature. Therefore, unless intelligent technologies become relevant to these fields, their global impact will be largely limited.

The objective of this talk is to highlight areas that need to be tackled in order to make intelligent well technologies relevant to mature fields, and to make these technologies more effective in general. Focus will be on measures that can be realistically achieved in the course of the next 10 years.

Two key ideas will be elaborated – (i) role of intelligent well technologies in improving the effectiveness of injection wells i.e., sweep efficiency of secondary and tertiary recovery operations), and (ii) role of modern measurement technologies made during drilling to help optimize the drilling and completion of production wells.

The one idea I would like the members to take away is that intelligent well technologies need not be limited to green field or frontier field developments, as these technologies have an important role to play in enhancing recovery from mature fields, which dominate global oil production.

Water Injector Optimisation



WELLS NEXT 10 YEARS

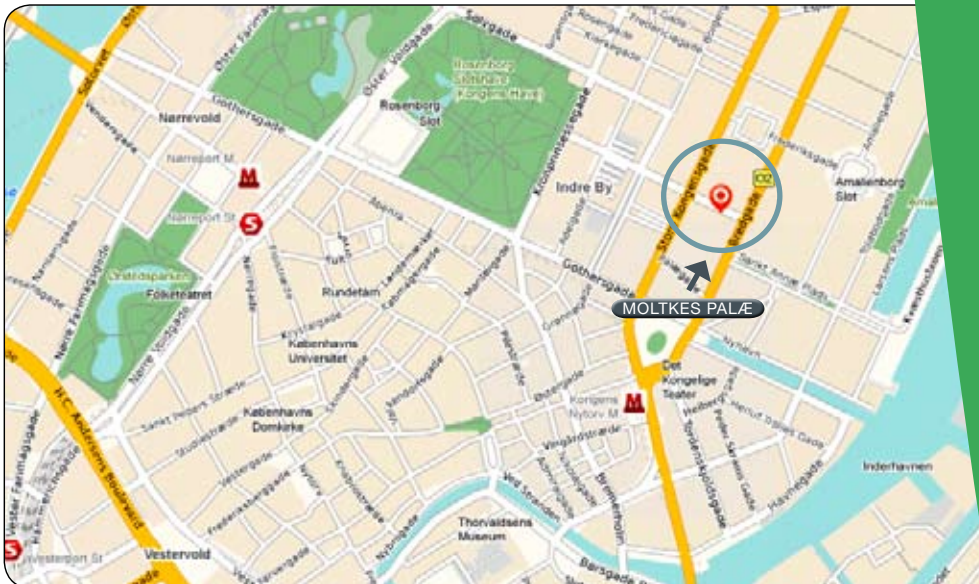
BIOGRAPHY

Dr. Younes Jalali, Schlumberger



Younes Jalali is a Reservoir Engineering Advisor with Schlumberger. He has worked in both field operations support and technology development over the past 20 years, with assignments in Libya, Italy, France, UK, US and China. Prior to this he was an Assistant Professor of Petroleum Engineering at Stanford University. He holds BS and MS degrees from the U. of Tulsa, and PhD from the U. of Southern California, all in Petroleum Engineering. His involvement with

“intelligent wells” dates back to 1990s, working with major operators to deploy new technologies in land, platform, and subsea fields – multizone completions, multilateral wells, permanent monitoring systems, distributed sensors. He is the author of 30 SPE papers and holds a number of patents related to intelligent wells. ◀



PROGRAMME

17:00 - 18:00

Drinks

18:00 - 19:00

Presentation and
SPE Annual General meeting

19:00 - 21:00

Dinner

LOCATION

Moltkes Palæ
Dronningens Tværgade 2 A
1302 København K

SPEAKER

Younes Jalali
SPE DL

TOPIC

Intelligent wells

ENTRANCE FEE

None

REGISTRATION

Please indicate your attendance
by Thursday 12 May
by signing up on the internet
www.spe-cph.dk

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www.spe.org

SPE MEETING SCHEDULE 2010-2011


August 18			MAIN SPEAKER	AFTER DINNER
TOPIC	EOR Seminar			
SPEAKER				
LOCATION	DTU			
SPONSOR	SPE			
October 25			MAIN SPEAKER	AFTER DINNER
TOPIC	Reliability of Expert Judgments and Uncertainty Assessments		The step from IOR to EOR	
SPEAKER	Steve Begg, SPE DL		Jørgen Hallundbæk	
LOCATION	Moltkes Palæ			
SPONSOR	Chevron			
November 16			MAIN SPEAKER	DINNER SPEAKER
TOPIC	Maturing E&P portfolio - Preparing for new challenges		Geothermal	
SPEAKER	Mike Kramer, Shell		Tim Erdmann	
LOCATION	Moltkes Palæ			
SPONSOR	Shell			
January 18			MAIN SPEAKER	AFTER DINNER
TOPIC	DONG E&P's West of Shetland activities		A possible "Green"	
SPEAKER	Mike Smith DONG E&P, UK		Hydrate Inhibitor	
LOCATION	DONG Energy			
SPONSOR	DONG Energy		Lars Jensen, DTU.	
February 16			MAIN SPEAKER	DINNER SPEAKER / DISCUSSION
TOPIC	Annular Isolation		Fracturing and faulting in carbonates	
SPEAKER	Robert L. Dillenbeck III, SPE DL			
LOCATION	Maersk		John Karlo, Maersk	
SPONSOR	Maersk			
March 15			MAIN SPEAKER	DINNER SPEAKER
TOPIC	Maximum Reservoir Exploitation, Higher Return on Capital		Chemicals, thermodynamics and the oil industry	
SPEAKER	Lars Mangal, Welltec			
LOCATION	Welltec		Georgios Kontogeorgis, DTU	
SPONSOR	Welltec			
April 12			MAIN SPEAKER	DINNER SPEAKER
TOPIC	Upper Jurassic reservoir sandstones in the Danish Central Graben: new insights on distribution and depositional environments		The North Sea Fund and its future activities in Denmark	
SPEAKER	Peter Johannessen, GEUS		Peter Helmer Steen, Nordsøfonden	
LOCATION	GEUS			
SPONSOR	GEUS			
May 17			MAIN SPEAKER	ANNUAL MEETING
TOPIC	Intelligent Wells		Annual General Meeting	
SPEAKER	Younes Jalali, SPE DL			
LOCATION	Moltkes Palæ			
SPONSOR	HESS			
June 17			MAIN SPEAKER	DINNER SPEAKER
TOPIC	SPE Summer party			
SPEAKER				
LOCATION	Regatta Pavillon, Bagsværd			
SPONSOR	Schlumberger			



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FASER



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WATERFLOODING AND FORMATION DAMAGE WORKSHOP

Course Content

Day 1 - Waterflooding

- **Introduction:** Reservoir engineering challenges of waterflooding
- Which parameters determine the waterflood recovery – heterogeneity, rel perms in end point saturations
- Which parameters determine displacement coefficient – rel perms, capillary pressure
- Fractional flow – universal description of waterflood from core scale to reservoir scale
- Practical determination of oil and water production from the fractional flow model. Field cases
- **Exercises:** estimates of oil and water production in heterogeneous formations
- **Exercises:** effects of heterogeneity and oil viscosity on oil recovery
- Improved sweep efficiency by horizontal and fractured wells
- Raw water injection improves sweep and decreases injected and produced water volume
- Low salinity water decreases S_{or}
- Induced fines migration improves sweep and decreases injected and produced water volume
- Taking advantage of fines migration to improve the recovery under pressure depletion with high water production
- **Conclusions:** taking advantage of reservoir challenges

Day 2 – Formation Damage

- **Introduction:** Effects of injectivity decline, fines migration and oilfield scaling on oil production (North Sea, Campus Basin, Gulf of Mexico). Understanding the formation damage from wells, lab and modelling.
- **Injectivity decline**
 - o Rock physics of injectivity decline
 - o Math modelling of core injectivity impairment. Exercises on permeability impairment
 - o Planning and design of laboratory injectivity tests
 - o Math modelling of well injectivity impairment. Exercises on skin growth
 - o Field cases with injectivity decline: prevention, mitigation, damage removal
- **Oilfield scaling**
 - o Physics and chemistry of sulphate and carbonate scaling
 - o Field and laboratory studies of sulphate scaling
- **Fines migration in oil and gas reservoirs**
 - o Electrostatic, drag, lifting and adhesion forces. Role of velocity and salinity
 - o Mathematical and laboratory modelling of fines migration.
 - o Well index impairment during oil/gas production. Exercises on skin prediction
 - o Taking advantage of formation damage for IOR: waterflooding, depletion of oil and gas fields with high water support, water coning in oil and gas fields
- **Conclusions:** prevention, mitigation and removal of formation damage

Instructor:

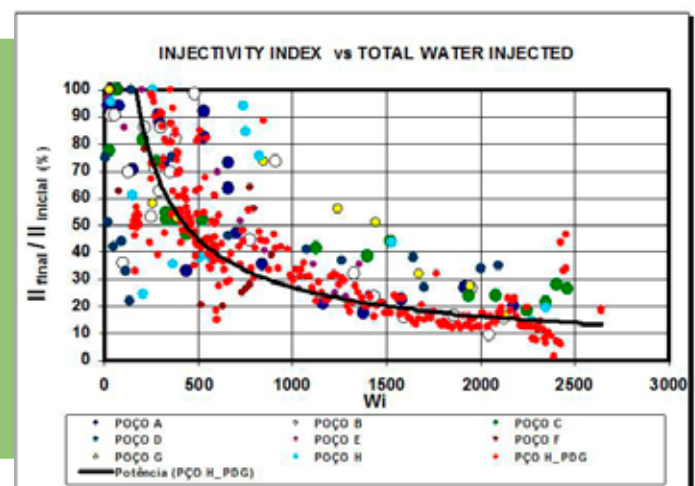
Professor Pavel Bedrikovetsky,
Australian School of Petroleum,
University of Adelaide

Date:

Thursday 26th to Friday 27th May 2011

Location:

DTU (the auditorium to be announced later)



10-fold injectivity decline due to formation damage for the wells of a Brazilian petroleum reservoir

Who should attend

Reservoir, drilling and production engineers; geoscientists; scientists and students in the area of reservoir engineering; simulation and laboratory specialists involved in waterflooding, drilling and well stimulation.

Registration Deadline:

Two weeks prior to course commencement, i.e. 13th May 2011. This is a popular course and lecturer, so please apply promptly to avoid disappointment.

Cancellation:

A full refund of fees will apply to cancellations received up to two weeks prior to the course (i.e. 13th May 2011). No refunds will apply after that date.

Booking and Payment:

Send email to SPECPH@gmail.com with your name, title and company name. The subject field should read "Waterflood workshop".

Workshop fee of 300 DKr should be transferred to the SPE account

Reg. No.: 2144

Account No.: 5360 613 323

no later than two weeks before the workshop.

BIOGRAPHY

Pavel Bedrikovetsky



Pavel Bedrikovetsky is an author of two books in reservoir engineering and 140 technical papers in International Journals and SPE. His research covers formation damage and IOR. He holds MSc in Applied Mathematics, PhD in Fluid Mechanics and DSc in Reservoir Engineering from Moscow Oil-Gas Gubkin University. In 1991-1994 he was a Visiting Professor at Delft University of Technology and at Imperial College of Science and Technology, where he consulted BP, Chevron, Total, Shell and Statoil. From 1994 until now he is Petrobras Senior Staff Consultant. He served as Section Chairman, short course instructor, key speaker and Steering Committee member at several SPE Conferences.

Since 2008 Pavel is Professor in Petroleum Engineering at Australian School of Petroleum, University of Adelaide. He is also 2008-2009 SPE Distinguished Lecturer. ◀

SUMMER PARTY

Mark your diaries – the summer party is at 1800hrs on 17 June at our old favourite party place, the Regatta Pavilion in Bagsvaerd. Many thanks to Bill Ginty for arranging this, unfortunately he can't make that date, so be sure to email him your appreciation as it will be a great party. We will start at 1800 with a boat tour and champagne on the lake and then dine on barbecue in the restaurant followed by music later. Carriages at midnight. To sign up, send an email to spe.danmark@gmail.com by no later than 1 June and pay 350DKK per person to our account, [bank reg. number 2274 account number 5360 613 323](#). Kindly put **SPE Summer party** in the Subject line of your mail and state clearly number of attendees in the mail. David Harrison will be representing Schlumberger as partial sponsor, as I am being transferred to Calgary. Here's hoping the weather is as good as the past few years have been and everyone is safety minded in the boats (watch those stilettos). Cheers Felicity ◀



EAST MEETS WEST



Four PhD students from the SPE student chapter at the Technical University of Denmark (DTU) went to the annual SPE Student Congress “East Meets West” in Kraków, Poland from the 13th-15th April 2011 (<http://www.spe.net.pl/>).

Our trip was graciously sponsored by the Center for Energy Resources Engineering (CERE) at DTU. The well-organized congress on Conventional and Unconventional Gas Sources was arranged by the AGH University of Science and Technology, and attracted Bachelor, Master and PhD students from three SPE regions: Russia, North Sea, and South, Central, and East Europe. The congress was sponsored by Halliburton, Schlumberger, ENI, Aurelian, PHNiG, Cameron, Naseer Bashar, and also Maersk Oil, who was represented by two MITAS engineers.

The technical level of the congress was highly satisfactory, and e.g. featured the presentation “Drilling Optimization Simulation Reduces Drilling Costs” by the distinguished lecturer Geir Hareland from the University of Calgary. The students participated in the poster and the paper contest, along with the student debate entitled Conventional and Unconventional Gas: Way to Choose. The SPE Student Chapters presented their activities from the latest year, and this served as a great source of inspiration. The Congress was a unique opportunity to create an international network with upcoming professionals within the field of petroleum engineering. The Congress also gave the student chapters a chance to share experiences and ideas on events that could make new students join the SPE and increase students’ awareness of the many challenges and career opportunities in petroleum engineering.

The successive Student Congress is scheduled to reoccur next year, and so we look forward to be back in the old streets of Kraków around the same time in a year. ◀

Bjørn Maribo-Mogensen,
SPE Student Chapter Chairman, bmm@kt.dtu.dk

**SOCIETY OF PETROLEUM ENGINEERS
SECTION FINANCIAL STATEMENT FOR FISCAL YEAR
1 April 2010 to 31 March 2011**

Section Name: _____

USD Exchange Rate: 5.29262

TOTAL RESOURCES April 1, 2010

		DKK	
Cash, checking, and savings accounts	L.C.	117,587.60	22,217.28
Bonds, securities, and other	L.C.	0.00	0.00
TOTAL—CASH & INVESTMENTS	L.C.	117,587.60 (A) U.S.	22,217.28

INCOME

			4.10
1 April 2010 to 31 March 2011	L.C.	21.71	
Interest and dividends earned	L.C.	11,000.00	2,078.37
Social events	L.C.	0.00	0.00
Meetings and special technical events	L.C.	0.00	0.00
Educational courses, symposia	L.C.	0.00	0.00
Scholarship support from SPE Americas Office	L.C.	0.00	734.79
Rebates from the SPE Americas Office	L.C.	3,888.96	0.00
Local dues collected	L.C.	0.00	51,014.43
Advertising Income	L.C.	270,000.00	0.00
Print Advertising	L.C.	0.00	0.00
Section Website Advertising	L.C.	0.00	0.00
Other	L.C.	0.00	0.00
TOTAL—INCOME		284,910.67 (B) U.S.	53,831.69

EXPENSES

			25,780.47
1 April 2010 to 31 March 2011	L.C.	136,446.25	
Meetings (notices, meals, rentals)	L.C.	0.00	0.00
Educational courses, symposia	L.C.	12,000.00	2,267.31
Scholarships	L.C.	0.00	0.00
Donations - Industry related	L.C.	0.00	0.00
Donations - Non-industry related	L.C.	0.00	312.70
Operating expenses (stationery, supplies, postage, etc.)	L.C.	1,655.00	10,004.50
Social events	L.C.	52,950.00	18.14
Other	L.C.	96.00	0.00
TOTAL EXPENSES		203,147.25 (C) U.S.	38,383.12

TOTAL RESOURCES March 31, 2011

Cash, checking, and savings accounts	L.C.	199,351.02	37,665.85
Bonds, securities, and other	L.C.	0.00	0.00
TOTAL—CASH & INVESTMENTS	L.C.	199,351.02 (D) U.S.	37,665.85

Cash + Income - Expenses = Ending Resources 199,351.02 37,665.85

Calculation Check (Should equal 0) 0.00 0.00

No local bank account. Any assets are on account with SPE for use by the section
 Newly established section. Not in operation during most of this fiscal year; therefore, no financial reports available at this time

Section Treasurer, *M. Skov*
 Date 27 April 2011

Submitted by:

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 SPE Section Office: SPE Copenhagen Section
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[Signature]

[Signature]

ANNUAL GENERAL MEETING

May 17th 2011

Moltkes Palæ
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