



BioTechDelft
POSTGRADUATE EDUCATION

Year report 2017

BioTech Delft
Foundation Biotechnology Academy Delft



Advanced Course Environmental Biotechnology
13-23 June 2017

Preface

We look back to a successful year as Biotech Delft. Our new name is getting familiar to ourselves and to the people in our network. Also the new Applied Sciences building at the Van der Maasweg in Delft has become our new home for the courses. In order to still bring our course participants in contact with the rich Delft historic tradition of the Delft School of Microbiology we have included a historic tour to the Beyerinck museum in the city of Delft in some courses which is highly appreciated.

In 2017 we welcomed a new member in our board: dr. Dennis Claessen, Associate professor in molecular microbiology from Leiden University. Dennis is the successor of prof. Gilles P. van Wezel and we are very glad that through his presence we can maintain the strong and historic biotechnology link between Delft and Leiden. We look forward to a fruitful collaboration. At this occasion we would also like to thank Gilles van Wezel for his committed membership over the past seven years.

In 2017 we made significant incremental improvements to our website and



visibility. E.g. the updated preparatory material – which includes videos - can now be accessed on-line by the participants via our website. We see this as part of our continuing quest for professionalization. We also awarded a course-grant to the winner of the 3rd edition of the TU Delft Massive Open Online-Course on Industrial Biotechnology. The winner was Juan Eduardo Sacre Ravera from Chile. Juan had just finished his MSc degree in Biotechnology Engineering (Universidad Andrés Bello, Chile) at

the beginning of the course and is now working as a junior process engineer at Phage Technologies in Chile. He was very happy to participate in the AC Downstream Processing.

Finally, I would like to thank Vincent Renken and Claudia Westhoff for their professional guidance and support for BioTech Delft in 2017.

Prof. Dr. Isabel Arends

Content

Preface..... - 3 -

Content - 5 -

1. Summary..... - 7 -

2. BioTech Delft in 2017 - 8 -

 2.1 General - 9 -

 2.2 Strategy and goals..... - 9 -

 2.3 Organisational changes - 10 -

3. Results 2017 - 10 -

 3.1 Advanced Courses - 11 -

 3.2 Quality of the Advanced Courses - 14 -

 3.3 Promotion of the Advanced Courses..... - 14 -

 3.4 Synergy with the department of Biotechnology..... - 17 -

4. Organisation - 18 -

 4.1 Employees of Foundation BioTech Delft - 18 -

 4.2 Board of BioTech Delft - 18 -

 4.3 Advisory Council - 18 -

 4.4 Contact information - 18 -

1. Summary

This year we have organised 3 courses, with an average of 27 participants per course. In 2016 this was 27.3 over the same 3 courses, and in 2015 28.6.

MPFT was not organised this year due to workload in the department. A lot of effort was put into the organisation of MPFT next year, which will be the 30th edition of the course.

Claudia Westhoff started in February 2017, and with the coming of a new secretary we picked up streamlining of the registration process. Furthermore we progressed in changing all materials to the new visual identity, further developed parts of the programs of Multiscale Computation Methods in Bioprocesses and Industrial Crystallization, optimised usage of the digital course books and put effort in better marketing and website.

The quality of the courses is - despite the difficulties during the move of the department to the new building (see pictures on the cover) - still as high as ever (avg. 4.3 out of 5).

We are looking forward to a very busy and successful 2018 with 7 or 8 courses.

We thank our partner (Wageningen University & Research), all lecturers and participants for this cooperative and successful year!



Prize winning team during AC BD



Prize winning team during AC EB



Last course books at AC BD



Kronigzaal (centre top) in the new building



Digital course books at AC DP



Farewell drink at AC EB



Advanced Course Bioprocess Design
27-31 March 2017

2. BioTech Delft in 2017

2.1 General

The foundation “Biotechnology Academy Delft” (short: BioTech Delft) manages the outreach program of the department of Biotechnology at the Delft University of Technology. Our aim is to stimulate high-end education activities. Our target group are scientists and engineers from universities and industries.

In our courses we invite a wide variety of influential lecturers from universities and industries speak about their vision on the biotechnology. Our Advanced Courses are short in-depth courses, which are full-time and given in one or two weeks.

Our current portfolio consists of seven advanced courses. Four of them are principally organised yearly, three every other year:

Yearly:

- Bioprocess Design (in partnership with Wageningen University & Research)
- Downstream Processing
- Environmental Biotechnology
- Microbial Physiology and Fermentation Technology

Every other year:

- Biocatalysis and Protein Engineering
- Genomics in Industrial Biotechnology
- Metabolomics for Microbial Systems (in partnership with Forschungszentrum Jülich)

In 2017 Bioprocess Design, Downstream Processing and Environmental Biotechnology were organised.

2.2 Strategy and goals

BioTech Delft has a strong portfolio and the courses have a well-known reputation. Besides organising our courses, effort goes into the continuous maintenance and improvements of the courses. We will shortly discuss the results of the goals set in 2017.

- Development of the new courses

At the end of 2018 we expect to organise two new courses which have largely been set up this year: Multiscale Computation Methods in Bioprocesses and Industrial Crystallization.

- Changing new brochures and other materials (e.g. powerpoint slides etc.) according to the new corporate identity

Many presentations of the three courses organised this year have been changed to the new corporate identity. Furthermore, all brochures were printed in the new layout.

- Optimizing digital course books

Effort has been put in optimizing the usage of the Surfaces and other hardware. The computers now have new mouses and keyboards that improve usability. We also increased the number of computers to 39. Furthermore, we started to use GoogleForms for the evaluations and decided to make paper workbooks with exercises which give participants a better overview.

- Improved effectivity of our marketing

We have been:

1. gathering data on how participants found us by changing the registration form,
2. more actively involved participants in promotion by asking to help during the evaluation,
3. used LinkedIn more intensive by creating groups and made shareable banners for LinkedIn and as signature for email.

Further research and more ways of promotion are being looked into.

- Renewing and adding new media to preparatory materials

We have been renewing the preparatory materials of the courses organized and extended some of them with movies from the MOOC Industrial Biotechnology.

- Change to online financial registration system has been made

We went from "EXact" to "EXact online", improving the accessibility and backup of our administration.

For 2018 we will focus on the start of the new courses, more targeted and timed advertisement, improvements in the registration process (more automatized) and explore possibilities for online education.

2.3 Organisational changes

This year started with a vacancy for the secretary position. We are very happy to have found a strong and capable new secretary: Claudia Westhoff! She has started in February.

Furthermore, after 7 years of commitment as board member, prof. Gilles van Wezel was succeeded by dr. Dennis Claessen. With Dr. Claessen (researcher at Leiden University) we will keep our connection to the University of Leiden.

3. Results 2017

In total we had 81 participants this year in 3 courses. On average, 27 participants per course. Normally, we would have organised 4 courses, but due to a heavy workload for the course staff MPFT was not organised this year. There has been a lot of effort put into changing the program for this course in 2018.

As every year, the organisation of the Bioprocess Design was in cooperation with Wageningen University & Research. This year the course was held in Delft. In 2018 it will be held in Wageningen again.

3.1 Advanced Courses

A short overview of the advanced courses is given in 2017 is shown in table 1.

Table 1: Courses in 2016

Advanced Course	Times organised (since)	Length (weeks)	Participants (Industry / PhD / PDEng)
Bioprocess Design 27-31 March	4 (2014)	1	33 (12/6/15)
Environmental Biotechnology 13 – 23 June	22 (1993)	2	25 (6/12/7)
Downstream Processing 3-7 July	28 (1989)	1	23 (11/10/2)

In the graphs on the next page, the number of participants of the last six years is shown. Three groups are visualised: PDEng (Professional Doctorate in Engineering), PhD's and participants from industries.

Our courses have an very good international reputation, but continuous promotion remains an important topic. Due to better registration of how participants found us, we can start improving the available methods of promotion (online, brochure, LinkedIn, etc) next year.

We aim for a balanced distribution between industrial and PhD participants. This stays an important discussion point with all course boards.

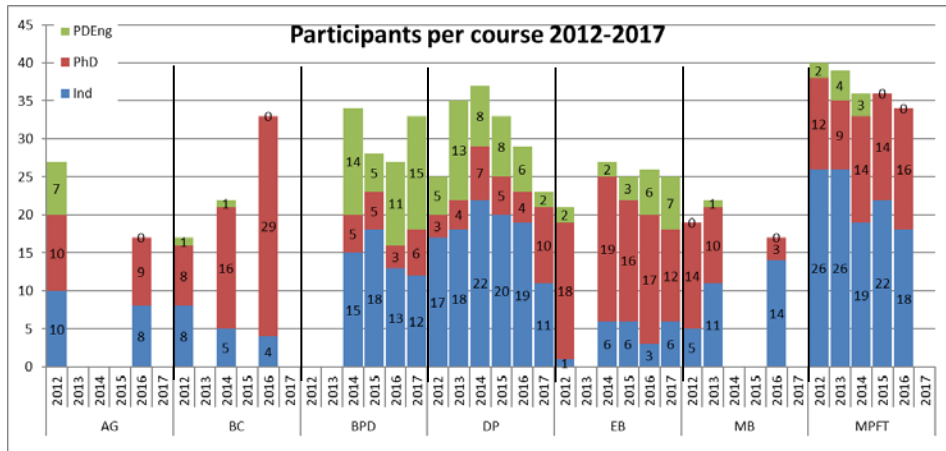


Figure 1: participants sorted per course over the last 5 years.

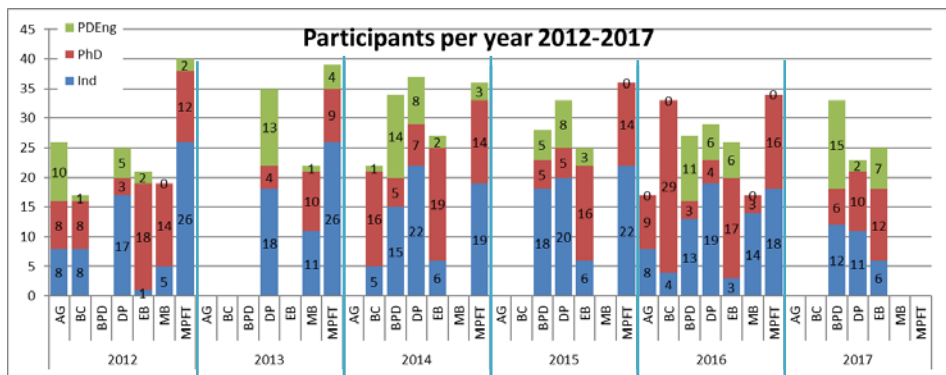


Figure 2: Participants sorted per year.

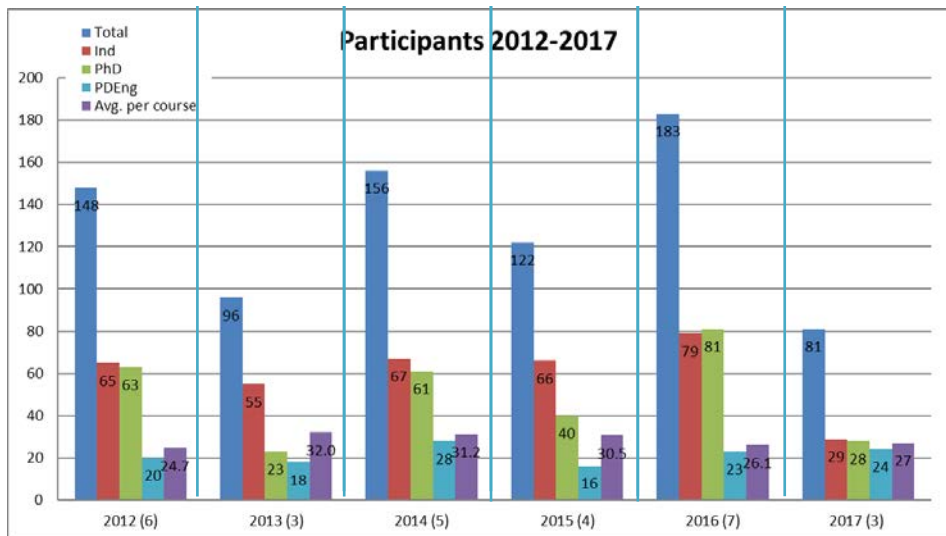
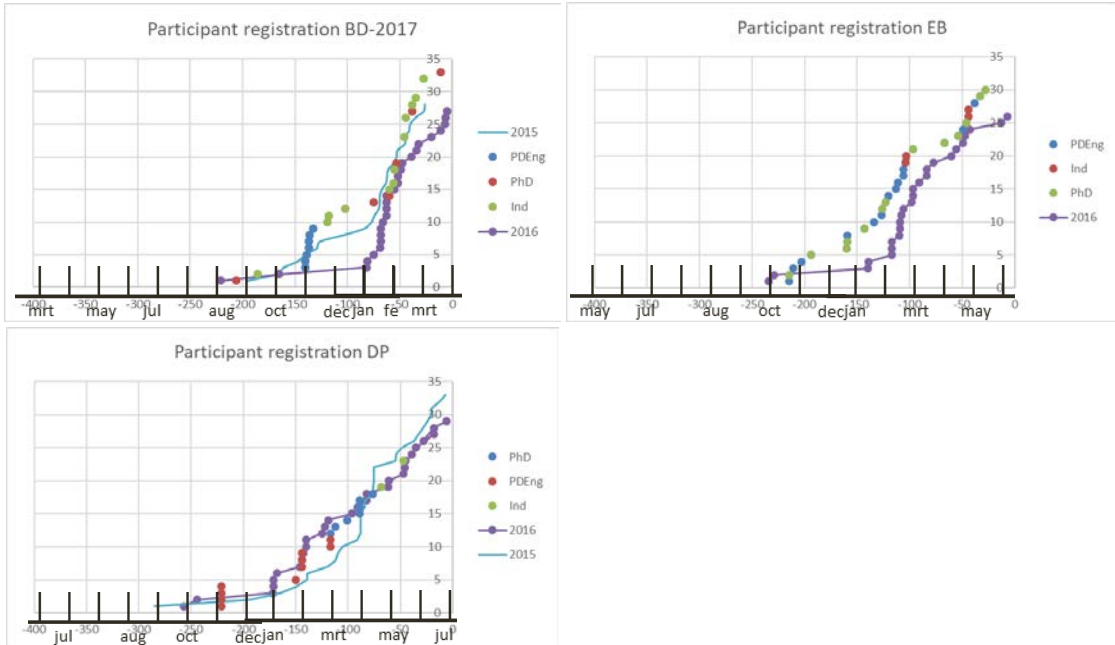


Figure 3: Participants totals per year in three groups. Below: year (number of courses)



Graph 4: Registration of participants in time. 3 categories of participants are visualised (dots) and the data of last years (line)

Most participants register between 4-7 months before the start of course. Because of that we have changed the policy of registration, so participants can now register all year round.

We do see that this year people start registering earlier than previously, as was noticed for the BD and EB courses.

In our experience LinkedIn is a useful tool for promoting our courses. However, we were unable to underscore this with traceable data. Coming year we will invest more time in these actions to keep track of promotional activities.

3.2 Quality of the Advanced Courses

To ensure the quality of the Advanced Courses, all courses are evaluated and discussed yearly with the course boards. The evaluation gives insight in the relevance and didactic qualities of all presentations and lecturers. Furthermore the organisational part the course is evaluated.

The average numbers are given in table 2. The scoring is given from 1-5.

Table 2: results of evaluation Advanced Courses 2017

Advanced Course	2017 Content / org.	2016 (previous course) Content / org.	Historical avg. (10yrs)
Bioprocess Design	4,4/4,5	4,3 / 4,5	4,2
Environmental Biotechnology	4,1/4,3	4,5 / 4,6	4,4
Downstream Processing	4,1/4,3	4,1 / 4,5	3,9 / 4,0

We see a little drop for the content and organizational aspects of the courses. Moving to the new building (air conditioning, curtains, etc. were not optimal yet) and testing the computers could be part of the explanation. Still the marks are very high and above the historical average for BD and DP. We are very proud of these good results.

3.3 Promotion of the Advanced Courses

We have made incremental improvements to our website and visibility. We now use the website to share the preparatory materials for example. This way we can more easily share the variety of materials (e.g. video's and text) and it improves the traffic on our website.

To show to visitors the liveliness of the website, small banners were added when registration of the course was nearly or fully booked.



Figure 5: home page pictures with banners, indicating availability of the course

The MPFT 2018 course was more than fully booked this year (6 participants in the waiting list of which 3 registered for next year). Other courses were not fully booked. We hope to see the results of our promotion next year and keep improving it.

Flyers have been improved this year. Dates have been omitted, so we can keep using them throughout the year. Also LinkedIn banners have been made to be used for LinkedIn and as banner under the email (See pictures on the next page).

The newly improved website of the TU Delft has given BioTech Delft the opportunity to make a new page with new text. The link to this website is viewed under the picture below (figure 8).

Within the TU Delft the PDEng students have set up a group: DIDEA. The aim of DIDEA is to improve visibility of the PDEng-program and because of that they have a lot of contacts with companies. Starting next year, they will also promote us during their visits at companies.

Finally, we have used our department colleagues to make promotion for all our courses at different events which the department organized and/or visited as speakers.



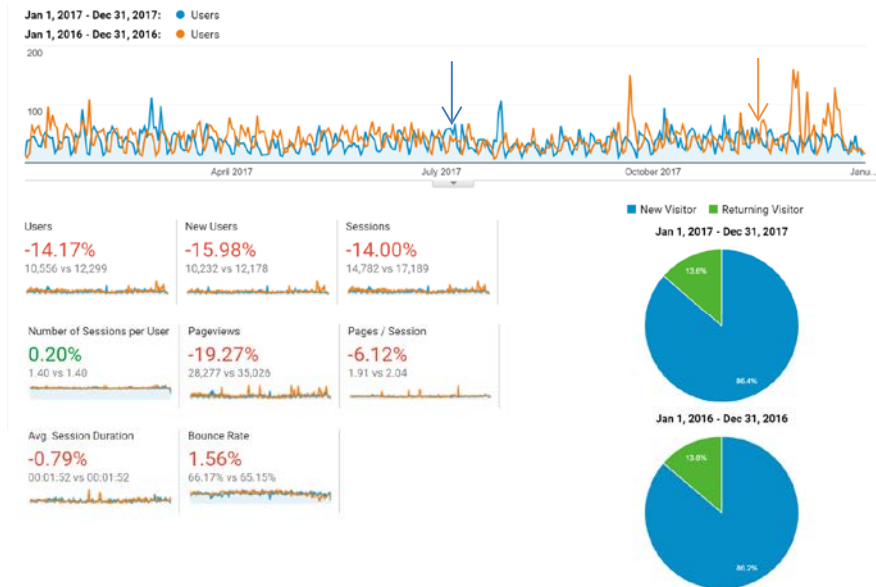
Figure 6: Banner for on LinkedIn and under email and advertising AC BD for 2018



Figure 7: backside of the flyer 2017



Figure 8: New website of BioTech Delft on the TU Delft website:
<https://www.tudelft.nl/en/faculty-of-applied-sciences/about-faculty/departments/biotechnology/education/biotech-delft/>



Graph 9: a comparison between the amount of visitors on our website of the last two years. Arrows indicate a promotional activity (the course calendar send to our email list (2628 addresses))

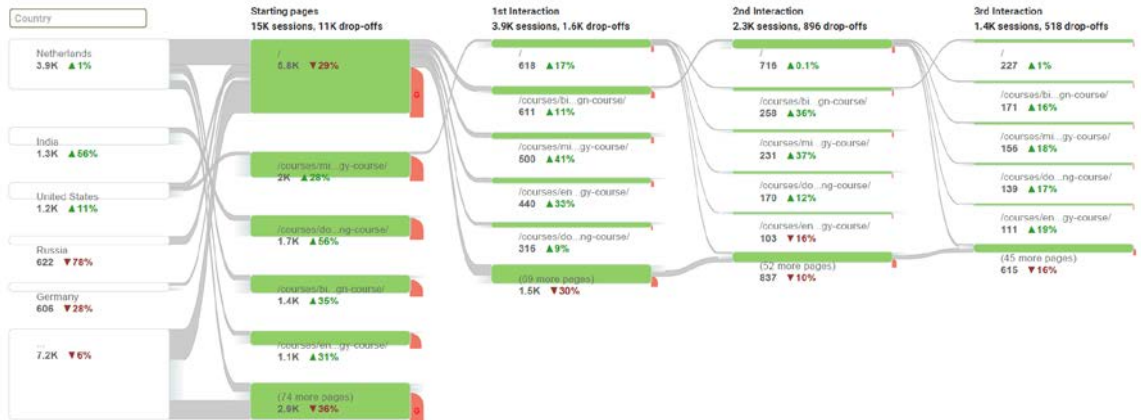


Figure 10: Looking at the influx and out flux of different pages of the website. % indicate increase or decrease compared to 2016

Overall looking, we see a decrease in visitors of our website. This could be due to less courses organised, so less promotion has been made (promoting 7 courses will result in more traffic than promoting 3 courses).

Next year we should look at 2016 to compare results. The website had been in use since July 2014, so no comparison with 2013 (also 3 courses) could be made. Looking at averages per day per year, we see the following:

- 2015: 36,3
- 2016: 33,7
- 2017: 28,9

Arrows indicate when course calendars were sent. Probably due to the date (close to holidays) there were not a lot of views resulting immediately from the mail. If looked at the total response, it is improving (see figure 11). In 2015 it were 71, in 2017 140.

Month	Subject	Status	Opens	Clicks
July, 2017 (1)	BioTech Delft Course Announcement 2018 Regular - BioTech Delft full list Sent Fri, July 7th, 2017 3:09 PM to 2K recipients	Sent	27.1%	5.7%
November, 2016 (1)	BioTech Delft Course announcement Regular - BioTech Delft full list Sent Wed, November 16th, 2016 4:21 PM to 2K recipients	Sent	25.5%	4.8%
December, 2015 (1)	Newsletter concept 2016-11 Regular - BTD Mailinglist Sent Tue, December 22nd, 2015 2:06 PM to 2K recipients	Sent	22.8%	3.5%
January, 2015 (1)	First mailing 2015-01 Regular - BTD Mailinglist Sent Tue, February 3rd, 2015 8:30 AM to 3K recipients	Sent	23.9%	2.8%

Figure 11: results from mailing the course calendar. Respectively the clicks are (starting at 2015): 71, 85, 114, 140.

3.4 Synergy with the department of Biotechnology

The Advanced Courses offer staff members the opportunity to keep, and get, in contact with industries via invited lecturers as well as via participants. The reputation of the Advanced Courses is strong and has a positive effect on the branding of our department. Also all BT-employees are invited to follow the guest lectures, which is often made use of.

Furthermore, the courses form an important part of the PDEng students' education as well as PhDs from the department and campus. The opportunity to let PhD and PDEng students work side by side with industrial participants is appreciated by all. Promotion was made during the advanced courses regarding the aims and possibilities of the PDEng-educational program to all participants.

4. Organisation

4.1 Employees of Foundation BioTech Delft

Program Director

V.L.J. Renken, MSc MSc(Ed)

Office Manager

Claudia Westhoff (started February 2017)

Financial Administration

I.G.M. van Kersbergen (Kersenbentjes BV)

4.2 Board of BioTech Delft

Chair: Dr. Ir. J.M.A. Geertman, Sr. Manager product & process research, Heineken, Zoeterwoude

Vice-chair: Prof. Dr. I.W.C.E. Arends, Head of the department of Biotechnology and professor in Biocatalysis and Organic Chemistry, TU Delft

Treasurer: Prof. Dr. P. Osseweijer, professor in Biotechnology and Society, TU Delft

Board member: Dr. A. Wahl, Assistant Professor Cell Systems Engineering, TU Delft

Board member: Dr. D. Claessen, Associate Professor Institute of Biology Leiden, Leiden University

4.3 Advisory Council

Dr. E.C. Roos, (voorzitter), Eric Roos Consulting/Koninklijke Nederlandse Chemie Vereniging, Delft

Dr. R. Bos, TIFood & Nutrition, FrieslandCampina, Deventer

Prof. Dr. Ir. C.J.N. Buisman, WETSUS, Leeuwarden / Universiteit Wageningen

Dr. Ir. C.B. de Gooijer, Food & Nutrition Delta, Wageningen

Dr. P.C.A.M. van Helvoort, Royal HaskoningDHV, Amersfoort

Prof. Dr. Ir. J.F.T. Keurentjes, TNO, Delft

Drs. A.C.A.J. van de Leur, Synthon Biopharmaceuticals, Nijmegen

Dr. B. Marthi, Unilever Research Laboratorium, Vlaardingen

Dr. Ir. F.J. Nagel, Janssen Biologics BV, Leiden

Dr. W. van Waesberghe, Heineken Supply Chain, Zoeterwoude

Dr. Ir. R.J. Zoetemeyer, Corbion Purac, Gorinchem

4.4 Contact information

Stichting Biotechnology Academy Delft

Van der Maasweg 9

2629 HZ Delft

T: 015-2781922

E: biotechdelft@tudelft.nl

W: www.biotechnologycourses.nl

5. Acknowledgment

Our courses could not be organised without the effort of a large part of the Department of Biotechnology. We would like to thank all staff and lectures of our courses.

Special thanks go to prof. Gilles van Wezel for his 7 years of commitment to the board.