



THE INNOVATION DEGREE

Professional Doctorate in Engineering (PDEng)

PDEng Graduation Ceremony

By Renée Aggenbach

On 25 November, 2013, the Delft Product & Process Design Institute had the pleasure to congratulate 12 young professionals with their Professional Doctorate in Engineering (PDEng) degree. During the joint Graduation Ceremony the achievements of the PDEng graduates of Bioprocess Engineering, BioProduct Design and Process and Equipment Design programme were celebrated. Prof.dr. E.J.R. Sudhölter was chairman of the ceremony.

The November 2013 PDEng graduates:

Bioprocess Engineering

Yasmin Abdollah Aslani
Weiwei Li

BioProduct Design

Xavi Ribes Calvo
Phuong Vo

Process & Equipment Design

Jorge Andres Moncada
Herib Blanco Reano
Peng Zhao
Jeroen van der Graaf
Sara Garcia Frutos
Eka Khrisnawati
Kareemulla Dudekula
Mohit Hans

Companies and supervisors from industry:

Bird Engineering B.V.

Ir. M.J.A. van Lankveld

Photanol B.V.

Prof.dr. M.J. Teixeira de Mattos, Ir. V.M.P.J. de Bruijn MBA

Janssen Biologics B.V.

Dr.ir. M. Flikweert, Dr.ir. F. Nagel, Dr. A. Westerbeek

Andritz Separations - GMF Gouda

Ir. R. van Heijningen, Ir. M. Maingay

Shell Global Solutions International B.V.

Dr.Ir. W. Balk, Dr.ir. M. van Hardeveld

SABIC Petrochemicals B.V.

Dr.ir. T. Housmans, Dr.ir. M. Kuipers

Fresenius Kabi A.B.

Prof.dr. T. Wörnheim, Dr. A. Niemi

FrieslandCampina Domo B.V.

Ir. R. Tijsma

DSM Research B.V.

Dr. T. van der Does

TU Delft supervisors:

Prof.dr.ir. H.E.A. van den Akker, Ir.drs. G. Bierman PDEng,
Prof. dr. J.H. van Esch, Ing. Y.M. van Gameren MBA,
Dr. W.M. van Gulik. Prof. dr.ir. P.M. Herder, Prof. dr. F. Kapteijn,
Drs. J.A. Kiers, Dr.ir. H.J.M. Kramer, Ir. M.W. Lambrichts,
Dr.ir. R.G.J.M. van der Lans, Dr.ir. M. Ottens PDEng,
Ir. P.L.J. Swinkels, Prof.dr. G.J. Witkamp, Dr. S.A. Wahl

Sara Garcia Frutos

Currently evaluating opportunities



I was in Russia when I got to know the PDEng programme. I still think to myself the odds of leaving to Moscow and soon discovering that my professional future was, after all, closer to my home country than I thought, in the Netherlands. The idea of a postmaster study that would allow a boost to my engineering knowledge while working in a multicultural environment was exciting since the first moment I heard about it.

During the first year, in addition to attending advanced courses and exams, the skilled trainees work on innovative projects in order to create solutions to the challenges facing our world. As a part of a team, we deliver practical, feasible and high-impact project results for a broad set of companies ranging from basic chemicals, oil and gas, health or food industry. Hard work, restless effort and courage become part of a PDEng's DNA.

Cultural diversity is really valued in the programme. Being PDEng means being flexible and adaptable. Nowadays I truly value the presence in my team of people with different backgrounds, experiences and interests. I was taught that it is this interaction what helps breed revolutionary ideas.

In the second year, we fully develop a project in an industrial environment. Challenging tasks with real responsibilities are offered to us. Here is when we can really boost our potential as engineers. We bring innovative ideas for companies, try to optimize the profitability or energy efficiency of a process, or even work on the possibilities to reduce the environmental footprint of a plant.

With this programme one not only gains technical knowledge, but also learns how to apply it; how to think. I am still surprised how this programme let my creativity flourish. Now I try to approach problems from another perspective; I became an out-of-the-box/lateral thinker with a 'can do' attitude, armed with the tools to overcome any obstacle.

I like to think that we combine a high level engineer education, having worked close to experienced people mixed with fresh ideas of young engineers eager for success. Who knows, perhaps one of us will bring to the world a revolutionary idea that one day will have the potential to drastically impact the future. At least we can say that we are now closer to achieve it!

As a recent PDEng graduate in Process and Equipment Design at TU Delft, I can summarize by saying that this programme is an unique opportunity to delineate the career path that best suits your interests and to create a strong network that will help you to grow both professionally and personally. The future of

engineering is greater than its past. There are many more complex human and developmental challenges and paradigms that have to be redefined. Is it not an awesome opportunity to be in the space that will define the future?

Jorge Andres Moncada Escudero

Currently PhD researcher at TU Delft – TPM –Energy & Industry



After I finished my master in Chemical Engineering (Reaction-Separation Process Design) I became passionate about design, specifically: Process Design. I wanted to make a difference and I thought I could make it through design. So, I started looking for opportunities where I could apply all the knowledge I had gained in a real technological problem. It was then when I came across with the PDEng programme on Process and Equipment Design. And as in most cases where big decisions are to be taken I just followed my heart and I applied to the PDEng programme.

Looking back at 2011 when I was a first year PDEng trainee full of expectations and eager to learn, I can clearly see the transformation which PDEng brought in me. During these 2 years of PDEng programme, I have learned how to approach and solve real design problems using the Engineering method (heuristics) and I have gained self-confidence in my abilities as an engineer. In the first year of PDEng I took numerous advanced courses offered by OSPT and universities to broaden and deepen my technical knowledge as well as management skills. However, what I value the most during the first year was the opportunity to work with an international team in an industrial assignment. That experience has been an important milestone in my professional career.

During my second year I was working in the design and scale up of a paddle dryer. Again, I had the opportunity to work with experienced people from academia and industry who helped me to develop a critical and creative approach to solve problems. What I value the most in this phase of my training as a PDEng was the regular feedback from my design coach and mentor. Their relevant remarks and comments kept me challenged and motivated.

In short, The PDEng programme not only offered me the opportunity of applying state-of-the-art background in Chemical Engineering to real technological problem, but also it offered me the opportunity of learning from people with different cultural background and who, in general, think in a different way. Therefore, I would definitely recommend the PDEng programme!!!

Weiwei Li

Currently PhD researcher at TU Delft – 3mE - Process & Energy



It was summer and it was 2009. I was working in a quiet office on the ground floor of the Biotechnology building, trying to finish my master thesis in time. After a four-hour exhausting writing, I stretched my legs and looked around, then I saw the office next to mine, where Yvonne and Mahsa, my future coordinators were sitting. So I talked to them and got to know the programme of Bioprocess Design. One thing led to another, I decided to enrol myself in. By that time, I did not realize that this was the beginning of a beautiful journey for me. A journey of two years, as a PDEng trainee.

What can I say about PDEng? Well, the first word that pops out is 'fun'. Yes, fun. You find it everywhere. We had boat dinner, we had 'love trip' to Denmark, we had Christmas parties and we had coffee breaks. We also had pleasant brainstorming during GDP (group design project), group competition for who had the most sustainable process designed, and of course, the endless yet refreshing arguments on the discussion board of APPD (advanced process and product design) course. It was all this fun that carried me through all the exhausting moments, either in courses or in projects. In the end, this is something the programme taught me: it is a tough life as an engineer, and you need to enjoy what you are doing, to survive.

Then there is another word following 'fun' and it is 'confident'. Industry is a totally different world from university and what PDEng programme offers is a better preparation for this transient. If you look at the structure of PDEng, you will find how gradually it pushes the trainees out of their comfort zone: first courses, then solving problems for companies in a group, and finally, facing the industrial world alone. During this process, you will overcome obstacles one by one, with the backup from TU Delft. In this way your experiences grow and so does your self-confidence. The day when you step out of the programme, you will not fear what the industry is going to challenge you with, because you have been there and done that.

Now I have finished this journey of mine and I really appreciate the joy and confidence PDEng has given me. If you want to know whether or not you can survive in the industry and how to thrive there, PDEng is a place to find your answer.

Mohit Hans

Currently Process Engineer at FrieslandCampina Innovation



Before enrolling in PDEng, I researched process design related options available post masters and their relevance to my interest and found that Delft has a similar programme to offer. Further exploring about this programme revealed a long history of success and name in industry. The programme is spread over two years, with first year focused on deepening technical knowledge complemented by economics, safety and sustainability courses. What fascinated me the most was the design template which describes a methodological way in which conceptual design projects are accomplished. The second year gives freedom to apply knowledge on a live industrial project to come up with unique process solutions.

I found that the various lessons were extremely content focused and taught you advanced design principles which could be applied to most projects and are often overlooked. The industry experienced teachers pointed out common design pitfalls and were easily approachable if you had difficulty understanding a concept. Personally, the structured hours allowed me to plan out what I wanted to study that specific period while the continuous assessments kept me on my toes. Being surrounded by motivated, like-minded people was beneficial as it drove me to work harder and achieve what I wanted to achieve.

This programme in my view has the keys to fast track career in process industry by helping candidates get the choice of skills that they would not be able to get in regular schools. I went into PDEng programme feeling anxious but found the staff to be very friendly and helpful. The programme has a strict policy of not accepting people that are not motivated to explore unfamiliar process industry challenges.

General Information

The PDEng traineeship programmes have shown to be effective in different settings. There is a rising demand from as well the industries as trainees for PDEng programmes in more areas related to technological design. The PDEng traineeships offered are fulltime, salaried, take two years, and are the bridge from academy to the industry.

For more information about the TU Delft PDEng programmes:
www.pdeng.tudelft.nl
www.facebook.com/DPPDI