

Tanya Hutter

Women in Chemistry

Tanya Hutter completed her PhD in 2013 under the supervision of Professor Stephen Elliott. Three years on, Dr Hutter is a Henslow Research Fellow at Darwin College, a postdoctoral researcher in the department, and director and co-founder of her own company, SensorHut. Tanya recently returned to work after having her second child, at the head of a major clinical sensor development project. Tanya is this issue's Woman in Chemistry.

Tanya Hutter arrived in Cambridge, with a BSc in chemical engineering from Ben-Gurion University and an MSc in Materials Science & Engineering from Tel Aviv University, specialising in optical sensing, during which time she published four papers, filed one patent and graduated top in her class with distinction. "Succeeding in my Masters gave me the confidence to continue in academic research, because two years earlier I could not have imagined doing a PhD or studying in Cambridge. Securing a competitive scholarship from Trinity College allowed me to come to Cambridge for a PhD, and when I arrived I was overwhelmed and excited by the prospect of being able to work on a variety of different subjects such as optical waveguides, plasmonics, nanotechnology, microfluidics and chemical sensors – it all seemed like so much fun," said Tanya.

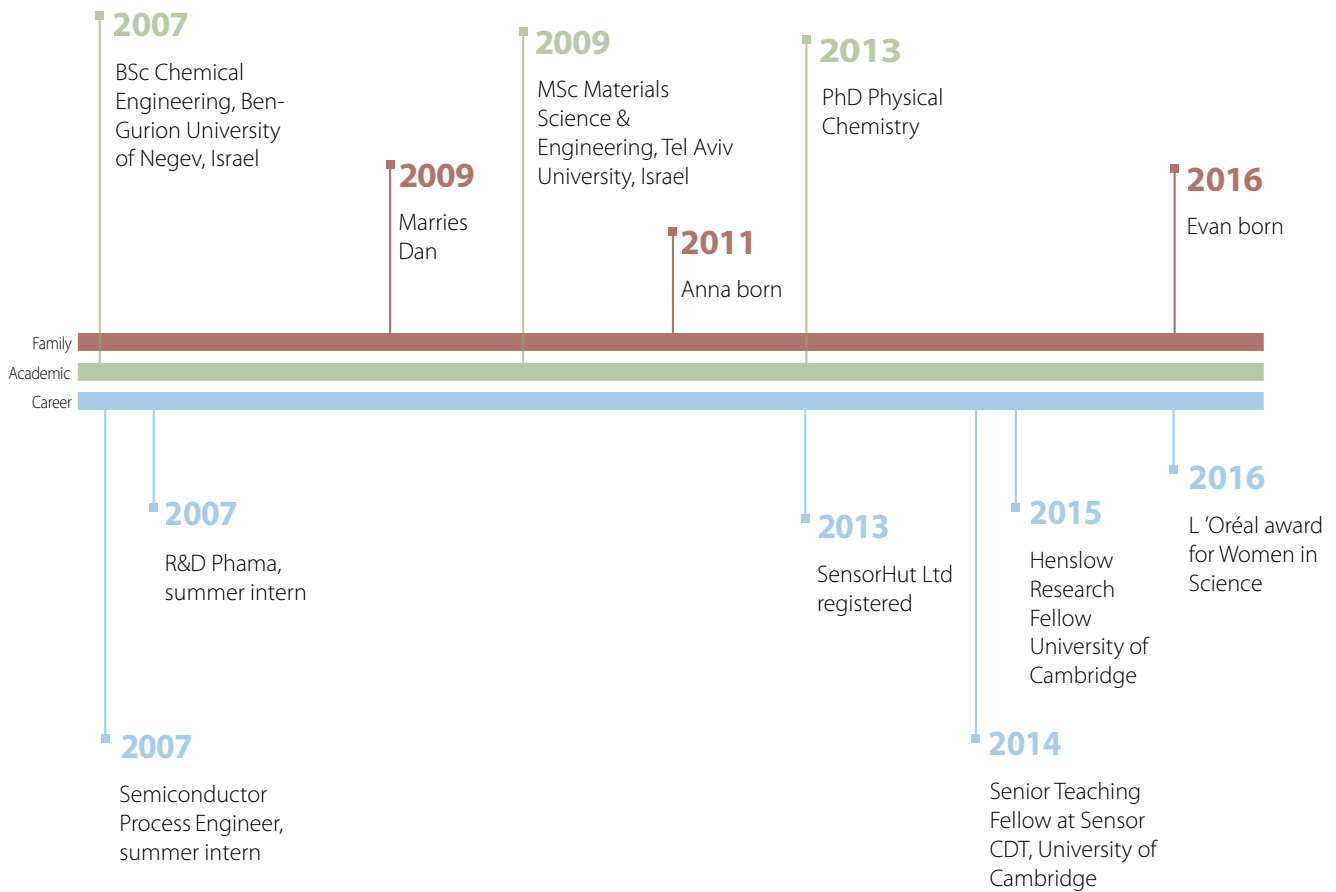
Tanya joined Professor Stephen Elliott's group in 2009 but took six months out of her research to have her first child, Anna. By the end of her PhD (which was completed in the designated three year period) Tanya published an astonishing 14 papers and conceived the concept for SensorHut.

"I was really excited by the ideas that were beginning to develop in the back of my mind about SensorHut,

but I did not want my PhD research to be distracted until the thesis was done and dusted". With the PhD complete and support from her husband Dan, Tanya turned her attention to the start-up. "I decided to remain in Cambridge to develop my research, collaborate with colleagues, explore the business potential of my start-up idea, and provide a stable and supportive environment for my young daughter. I also joined the Accelerate Cambridge programme at the Judge Business School where I gained the skills in commercialisation and business development."

SensorHut was founded in late 2013 in order to commercialise a new chemical sensing technique based on the principles of optical absorption. The company's aim is to provide more accurate measurement of volatile organic compounds in applications ranging from the monitoring of industrial processes to medical diagnostics.

Tanya's new project in the department has secured transitional funding from NIHR (National Institute for Health Research), with the aim of developing a real-time online sensor which can measure molecular changes of acute head injury patients. "I really enjoy doing science and the idea of translating fundamental research into products that improve the lives of users. In my current research



I am exploring the overlap between the fields of microfluidics, optics, materials and surface chemistry. Being based in a chemistry department doesn't mean that I only do chemistry - this is what's great about multidisciplinary science. I am particularly excited when someone comes to me with a challenging problem that can only be addressed by exploiting a number of disciplines. I want to bridge the gap between commerce and academia."

Motherhood

Balancing the demands of motherhood with a successful career has not been straightforward, and the challenges Tanya has experience are not uncommon amongst early career female researchers. However, being one of five recipients (from hundreds of applicants) for the prestigious L'Oréal-UNESCO for Women in Science Award in 2016 gave Tanya much needed support at a key time in her career when she had her second child. "I cannot thank L'Oréal enough. Not only did the award recognise my scientific achievements, but the prize helped with childcare and my return from maternity leave."

Tanya has been grateful for the support of family and friends during her research career, but she

did encounter some people in Cambridge who were surprised by the timing and the impact of motherhood on her career. "On reflection I wish I'd had both my children during my PhD as the structures are better developed to intermit and successfully complete a research project in a timely manner. In my current role I am juggling several collaborative projects, which rely on my specialist input, so the option of taking a break is not straightforward. My concern is that taking time out of my research may compromise everything I have worked so hard to achieve."

"I am determined to enjoy motherhood and at the same time progress my career. Some may say that this is a tough ask, but I have worked hard and invested a great deal of energy and thought into everything I do. The department's Athena SWAN Silver Award is tackling many of the obstacles encountered by early career female scientist, but there is still a great deal to be done to overcome the perception that in a competitive academic environment the demands of parenthood are not adequately accommodated. I have done all I can to be as productive and innovative as anyone at this stage in my career, so while I probably won't know the effects of motherhood on my career for years to come, I am determined to have my cake and eat it."