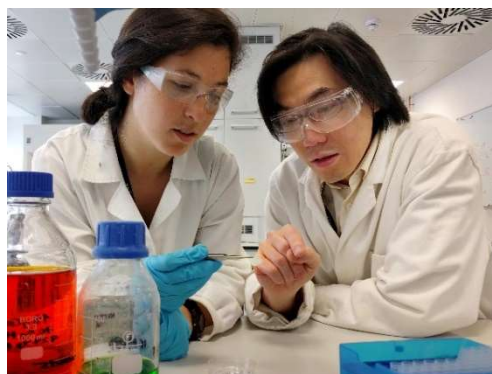


## ChemDiverse Career Profile

# Aaron Lau 劉勁行 博士

*Senior Lecturer in Materials and Bionano Chemistry,  
University of Strathclyde.*

**Aaron's parents were secondary school teachers.  
He is one of the few academics of Chinese descent  
at the University of Strathclyde**



### Why did you decide on a career in science?

In school, I enjoyed science and had decent, but far from perfect, grades. At university, I enrolled in biomedical engineering, thinking that I would make biomedical devices. However, I instead rediscovered my early love for construction sets and I concentrated on materials science and engineering. This is the application of basic physical and chemical principles to combine and arrange atoms and molecules on the atomic and nano scales. This is needed to engineer everything we depend on from non-stick cooking pans and almost unbreakable wind turbine blades to semiconductors, batteries, and biomedical implants.



### When did you decide on a career in science?

In my second job as a junior research engineer at a national research institute in Singapore, I was tasked to explore using molecules to “build” nanostructures. That’s when I began to perform research with other PhD's and career scientists in chemistry, and I decided that I wanted to have my supervisor's job as an (academic) research scientist.

### What qualifications and experience do you have?

Apart from my Bachelor and Master of Science in Materials Engineering, I learned a lot of chemistry on the job during three years of my research in Singapore. This prepared me for my PhD studies (in physical chemistry, in Germany), which took 3½ years. Although in principle one could go straight from undergraduate to PhD studies, many like me try other jobs first before deciding on further studies. Afterward my PhD, I obtained a “postdoctoral” position in a university research group (in the US) and spent 4 years investigating a topic related but different to my PhD. During this time, I began looking for my current position and ended up at the University of Strathclyde. When I started at Strathclyde, I also completed a postgraduate certificate in “Academic Practice”.

### What does your typical day involve?

There is no typical day! That is one exciting thing about being a “research heavy” member of academic staff. We typically have three parts to our jobs—research, teaching, and service/administration. To pioneer state-of-the art research, I obtain funding and supervise the research of my group, which currently has 5 full-time PhDs and a few MChem project students. I teach 3 modules in chemistry, with class sizes ranging from 25 to 120 students. For my service responsibilities, I coordinate delivery of disability and wellbeing teaching adjustments for my department. Also, as a research-heavy academic, I spend a lot of time traveling to conferences and other research institutions, around once a month (pre-COVID), to promote my research to the international scientific community as well as to learn the latest developments in my field of research.



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## Do you work mostly on your own or as part of team?

Roughly half of my responsibilities are supervisory. In this capacity, I am working as part of a team but I am at the same time working “on my own” because that is the nature of leading a group of people. One has to lead by example as part of a team, but also make decisions and act with (some) authority based on experience and the facts. The remainder of my time I work on my own, reading the scientific literature, writing reports, proposals, scientific papers, etc., and preparing for teaching.



## What is it like socially where you work?

Most staff members have their own offices so staff work separately, except when they gather for committee meetings, or when they visit each other for specific discussions or to get some administrative things done. Once in a while particular groups of staff go out for some drinks or social events, and once every couple of months, I take my research students for a group meal together.

## What challenges have you faced to get to where you are now?

There were times when I had almost no money in the bank as a PhD student and as a postdoctoral researcher. The stipend/living allowance as a PhD student is similar to minimum-wage and the compensation as a postdoctoral researcher is not really enough to support a family (at least not in the US where I was; better in UK/Europe). Finding my present position and maintaining internationally leading research are also challenging. Research is globalized—obviously we need to stay ahead internationally, which means we as a nation have to recruit the most talented people from all over the world for our academic positions too. It's been estimated that only one in nine PhDs will ever obtain a continuing contract (“permanent”) academic position. Being creative in research and working hard are the only ways to maintain internationally excellent research. In terms of social interactions, once in a rare while, I have wondered if remarks I got from students was because of my minority status or my “foreign” accent. Also, because I did not “grow up” in the UK university system, I had to learn the norms and expectations.

## What possibilities are there for your career in the future?

My research projects sit at the interface of synthetic materials and the biological environment, so applications can bring both medically and environmentally important impact. Over the very long term, one may also move across institutions and even different countries to pursue a career.

## What do you think are the most important skills for someone in your role to have?

To have a strong vision or conviction of what kind of research needs to be developed. Self-discipline and the ability to multitask are also important to find funding for the research, implement it with your research group, as well as maintain excellent teaching and deal with the administrative tasks of the job.

Be scientifically curious—take up challenges in working at something new. Work towards what you believe in.

