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Solid State Pharma Inc.



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1. You were associated with industries even before you started as a graduate student. Through your PhD also you were part of an industrial venture. How do you look back at that?

Industry wasn't anything foreign to me because I had worked in industry for 3 years and had excelled there even before starting as a grad student. When I came to Canada for my PhD, I was lucky enough to be associated with a professor who was consulting with companies. He had a project with Apotex and therefore my research was specifically focused with them. Throughout the tenure, I had an industrial supervisor alongside my university PI. As a PhD, that was an excellent opportunity to work with hi-tech industrial facilities alongside developing my own research.

2. There was a short tenure when you served as adjunct professor at McGill University after you PhD. What made you choose industry over academia in the due course? After PhD, I was actually working with a pharma company which overlapped with my McGill tenure (which was something on the side). So, my main job was something else, again with industry.

Going for the good ones first, both industry and academia are lucrative and interesting. Either have their specifications. In academia, you can go in depth about science and things take longer; but it would have a long-term impact. Whereas industry



is more immediate application and you can witness the impact on society much faster. To me, industry is more applied means of value addition to the community. Being an engineer, my interest has always been in applied science and I wanted to see ideas physically coming out of the white board.

3. As research progress, it expands in multidimensional space where it tends to grow in an interdisciplinary manner. Changing area of focus is a common thing in science. How would you comment upon that?

With PhD, I moved from a bioengineering background to a world of chemicals. Even though I liked bio at that time, life took me in a new direction which I never regret. It doesn't matter which direction you go as long as you excel in that direction.

4. Starting from PhD onwards, you have been consistently focused on improving your expertise in the same field of crystallization and solid-state materials. The field of crystallization doesn't sound that easy an area. Still what made you very passionate about the same?

When you talk about the organic/ inorganic compounds, crystallization is like any other characterization technique. But from the pharmaceutical point of view, it's a very different story all together. 75% of all drugs are in in solid form - either tablet or capsules. Only the other 25% is in the intra-venous (IV) form. In spite of that, last synthetic step is crystallization for 95% of drug. And these crystals are dissolved in appropriate media for administration in the form of IVs. Crystallization controls a lot of down-stream processes (e.g. purity, particle size distribution and flowability). Crystallization seems very easy, but to obtain certain crystals of size distribution and morphology is where the expertise comes into play. That seemed interesting and challenging to me and even now I feel the same.

5. Having been associated with industries throughout you career, had you ever thought of transforming to an employer from an employee at some point?



During my undergrad itself I was thinking of having my own business which my family was also supportive of. But it was one of my professors who channeled my thoughts to something different. He, who owned multiple hi-tech biotech companies, advised me to work for others and learn about the different aspects involved in running a company than to collapse as a novice entrepreneur. At the age of 20, that was the best advice I could ever get. And now with that intellectual backing in terms of running business we have been doing well. And it has been a fantastic team that makes everything possible for me.

6. Starting from scientists to managerial positions and now with your own venture, you have held distinctive capacities throughout your journey. Having played different roles at various companies, how would you look at the industrial workspace, roles and responsibilities with respect to an academic set up?

Irrespective of the set-up, its entirely up to you to make use of the opportunity and become visible. Whether its academia or industry, you can learn. As you make progress in an industrial set-up, titles are not given, they are earned (unless it's a corrupt system). You don't wait for titles to take up managerial and supervisory roles. When you excel in your own role, you automatically start playing additional roles within a team.

Unlike industry that has a system for itself, in university you have to rely on yourself; it's more of a shared responsibility over a short tenure. Regardless of where you go, you can learn depending on your motivation.

7. Being in business and having moved into science with the idea of business in mind, how do you maintain a balance between science and business?

I would say that depends on the person himself. Science and business independently have very different outlooks, each focusing on different things. But when business comes into science it's a different scenario all together. That's what SSPI is all about – for us business is not just money, but to bring value to the communities. Our main objective is to use projects as a means to develop our scientists, not scientists to



develop high-value projects. This is something intrinsic and I don't personally push myself in terms of monetary values.

8. Being a highly successful company in its initial years, what about the plans to expand in the future? What kind of projects are being looked upon in that regard?

Our main focus will still be largely on solid-state. We are looking forward to advance within the concept of crystallization using new technologies - areas which are not yet explored and applied in pharma industries, thus to bring down the cost and improve the quality. Also, we are starting academic collaborations to get deeper into other lesser explored dimensions as well.

We have had multiple acquisition requests which we are not interested in. We are planning to move into a much larger water from facility this year and we need to hire about 20 new employees, mainly with PhD or MSc degrees within the next five years.

9. With most of your clients being outside of NS and Canada, why was Halifax chosen as the hub?

With our biggest market being in Boston, this felt like the most convenient spot. Most of our clients are from the US, Japan, Germany, Denmark, India etc. with only a handful being here in Montreal, Toronto and Vancouver. After all it is a small world in today's global economy! Being in a bigger city would have provided a bigger pool of talent, but overall things have been good from here as well. There are good funding agencies and couple of universities here as well in terms of money and talent. NS was chosen just for family reasons.

10. Being someone who have successfully completed 24 years in the field of science and who is still continuing this journey, what do you have to say for grad students who are just starting their journey?

Depending on your interest and what you want to do, choices are to be made personally. Academia has its own beauty – you can explore science in depth. There are more things like teaching, mentoring etc. Seeing people grow is a wonderful experience



by itself. But getting grants and funding seem to be a really tough job at times. It could be a really stressful tenure of 5 years. At the same time there is a lot of academic freedom. Whereas in industry, depending on your role, you may not have that much of a scientific freedom. There are established norms which you have to follow, and you work on projects assigned to you. Financially, I think, industry is better than academia. For the amount of education that one person might have, getting into academia is not that easy. You need post-doc experience(s), good papers and good science to continue. It doesn't matter which direction you go as long as you excel in that direction.