SAN FRANCISCO BAY AREA CHAPTER
Alumni University of Padova

An Online Spritz with…..

Lorenza Moro, phD in Physics and expert in the development of flexible displays, tells us her personal professional story, shares thoughts and opinions about the life in the Bay Area and gives meaningful advice capitalizing on her extensive experience.

Briefly tell us your story: max 5 sentences

After I graduated in Physics at the University of Padova, I worked in public research centers in Italy in the field of microelectronics materials and processes. Few years later, I caught the opportunity to move to the USA. Since then, I have been working on the development of a platform for thin film encapsulation of displays based on organic light emitting devices (OLED), a type of displays now widely used in high-end smartphones and TV. After experiences with several companies ranging from start-ups to corporations, I am now a consultant on processes and materials for flexible displays, a field in which I am considered an expert.

Please tell us about your research and which projects are you working on

I am working mainly in processes and materials for the next generation of flexible and foldable displays with a couple of Asian display makers and some US electronic material manufacturers. I have also some projects in wearable electronics, the main one for a haptic sensor. I am also looking at applications of displays in AR/VR because I find the optics associated with those applications fascinating, but this project for me is still at its infancy.

Did you end to accomplish your childhood dreams?

I think so. While I was growing up looking at books and listening to the conversation in the family, I became interested in materials and their properties. As a scholar, I studied the interaction of radiation with matter and its use for surface and material analysis, and from there I got in material processes and devices. Indeed, my background and experience with particles interaction with surfaces was crucial in identifying and solving critical issues in the OLED encapsulation.

As a child, I was playing with what I had around, including electricity, making experiments and assembling “new things”, sometimes with unexpected results. For instance, my brothers claim that I was the cause of a block blackout while vacationing at the seaside. The same excitement of doing something “new and difficult” never left me. For example, it came back bold and strong when I finally detected a molecule that we had been trying to synthesize based on some energy calculation that somebody else had done. In a different contest, I experienced similar emotions when I saw the first commercial Samsung OLED phone with flexible display using the technology we had developed for encapsulation. It felt unreal looking at the beautiful RGB display of the smartphone we were holding while thinking of the initial multiple failures on mm-size OLED pixels. Of course, hundreds of people had worked on thousands of other issues to make such a phone possible!

Which are the biggest obstacles that you have faced so far in your career?

It has always been the disappointment and paralysis that you experience when funding, or rather lack of it, gets in the way of completing a project that is scientifically and technically successful. This happened to me in both the academic/research and also in the industrial R&D environment.

One instance was when at Vitex we had been able to prove that our technology for OLED encapsulation worked, we had built and delivered the tool, but suddenly the startup was out of money and leadership. In order to meet milestones and deliver the pilot-line

prototypes, we had overcome a lot of technical difficulties and I had pushed both myself and the team that I was leading very hard. Eventually, this is a story that ended well: the technology is in Samsung, Apple and other manufacturers of phones with flexible displays, but the final success came much later, after considerable struggle and the loss of the initial team along the way. Many times, the final “happy ending” does not even happen.

I think this is the kind of experience that many of us in the Bay Area have faced. The important thing is to never give up!

Did you have a mentor in your career development? Is there a particular person who had a peculiarly strong impact on your professional choices? If yes, why?

I cannot think of “one” person, I can think of a few. I guess I am a follower of the philosophy that “it takes a village to raise a child.”

I can mention a professor and an advisor that taught me how to rigorously analyze data and be honest on what data tells or does not tell you. Both were at Padova. A post-doc advisor was an example of hard work and dedication. Later, an elderly scientist with whom I first worked at SRI, demonstrated how fascination and enthusiasm for science and experiments do not age. My late husband with whom I worked for a while and with whom for a much longer time I discussed science and technology showed me how rigorous and “out-of-the-box” thinking leads to the conquest “difficult” problems. All these persons influenced my approach to science and technology and my professional experience. I have been trying, and still try, to carry their example along.

Do you have any advice for young professionals and students who would like to work in your field? which?

I think for my field as well as others that it is vital to explore new things and to be curious and open are the best advice you can get. A University degree is only a starting point; technology evolves. You need continuous study and hard work. Follow the data and being intellectually honest and truthful to the science / technology you are pursuing is key. “Making people happy“ or “being political” does not ultimately lead to success. Of course, all this must be balanced with graciousness and kindness to people, correctness, and understanding coworkers and team members and their circumstances and needs. You cannot get to a big result alone. You are always part of a team. I do not have any doubt that human beings and their well-being have priority over science!

How do you feel about Italy, how is your relationship with Italy, what do you miss of Italy the most?

I have contradictory feelings, probably similarly to most of us living here. I am happy and proud of being Italian, of the Italian culture, history and art and of her traditions. I am also terribly angry at how huge potential and richness are wasted by many Italians being narrow-minded and provincial, self-referent and self-focused. The scientific and technical preparation that Italian students have is good, but only part of that potential is used for the best outcome. In my opinion, the main drawback that Italy and Italians have is the reluctance to accept the "discomfort" that embracing new approaches and situations may bring. "Discomfort" is part of doing and researching something new; accepting failure as outcome is sometimes unavoidable. Most Italians are "complacent". They want safety and protection while, at the same time, they envy the opportunities offered elsewhere (i. e. US/Bay Area) without understanding that uncertainty and precariousness is part of the package.

I miss family and friends who live in Italy and I do not see very much (although communications are great these days). I also miss the beauty, the history, and art that are intrinsically part of your life in Italy. I miss sarcasm, humor, and irreverence that are intrinsic qualities in most Italians. For the major part, Italians do not take themselves or others seriously, irony is quite common. From many aspects that is really liberating; to avoid a lot of the "fluff" that has become so common in the Bay Area.

Which aspects of the education you received at the University of Padova are still influencing, both positively and negatively you as a person and as a scientist?

I am grateful to the University of Padova and the professors I had there for the very good scientific and technical education joined to experimental rigor that I got there. It has been a big asset in being successful in my career. On the negative side, the spirit of intellectual adventure and exploration is something I got elsewhere. Things look a little "static" in Padova. However, I must mention that my own personal evolution may also have played a role and things may have changed since I was there.

How important has been the university of Padova for you and your career? Does coming from such an old and prestigious institution helped you anyhow?

Important. When interviewed for my first post-doc, it was made clear to me that being from Padova University was a door opener. In the US saying that my "Alma Mater" is about 800-years old and that I graduated at the presence of Galileo's collarbone is often useful to put things in perspective! 😉

What does the Bay Area/Silicon Valley/California represent for you? What are the strengths and weaknesses of the American research model and what are those of the Italian one?

When I first came, I was fascinated by the “freedom” in considering new ideas, trying and doing things, and the hands-on approach that was common everywhere and for everybody in the scientific environment. Later I realized that sometimes there was some weakness in foundations. The Italian model was the opposite. I think in our days, things have changed at both places. The focus of innovation in the Bay Area is different from what it was; startups and the huge amount of money going into some of them are making things quite different, sometimes sacrificing real creativity to “pseudo-game-changer” technologies.

What do you expect from the Alumni SF Bay Area chapter association?

I think that creating a dynamic and continuous exchange between the Bay Area and Padova could be an important role for the Association. I think to be able to talk to students and new graduates from Padova on what to expect in and from the Bay Area is also important. For the Chapter is also important to be a physical or virtual environment where some of us can exchange notes and find validations of facts / impressions or disprove them, especially for younger people who have arrived more recently.

What would you like to do to contribute to the growth of the chapter?

I am not sure, I enrolled in a while ago, but I was able to participate in only one meeting due to business traveling. I am open and if I can, I will be happy to help in whatever way I can.