

Harnessing Sunlight: A Villager's Dream



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I was born and grew up during the final years of the Vietnam War. I remembered bullets lighting up the sky at night and running to a bomb shelter every time I heard a siren. Our house was burned down during the war and my family lost everything. After 1975, my father went to prison for 5.5 years due to his involvement with the old Vietnam government, and my family was not allowed to live in the city so we moved to a remote village. My mother was struggled to raise 5 kids alone. I and my siblings grew up without electricity for 16 years and we lacked of basic needs such as food, clothes, drinking water, etc. We lived in a small house made from bamboo cot walls and tin roof and the floor was just sand. Without electricity, we went to bed at sundown. I often dreamt of capturing sunlight in a little jar so that I could study or read book at night.

In 1991, my family immigrated to the United States of America (USA) through the Humanization Organization program with 3 sets of clothes, a few hundred dollars, and a few words of English. I was 21 years old. At that time, I did not even know what research was and my main goal was to learn English so that I could communicate with people. I learned English as a Second Language for two years before I took courses at Santa Monica College. I worked part-time at a restaurant, a nail salon, and library throughout college. The very first time I took a lab course was a general chemistry lab. I immediately fell in love with the chemicals, the glassware, and all the apparatus, and was always the last student leaving the lab because I wanted to learn more and do more experiments. In 1995, I then transferred to the University of California Los Angeles (UCLA). I asked a dozen of professors to do undergraduate research, but they told me research was not for everyone and I was told that I should focus on classes and learning English. It was not until the winter quarter of my senior year that Professor Benjamin Schwartz invited me to join his group meeting and encouraged me to apply to

graduate school. I did and joined his research team. I am forever grateful for his guidance and support.

Many times I was looked down upon for being a poor refugee who did not speaking English well. The more challenges I faced, the harder I tried. I used it as a motivation. 10 years after arriving to the USA with a few words of English, I received a Ph.D. from UCLA in Physical Chemistry. However, I did not do research on harnessing sunlight until I started my own research group at the University of California, Santa Barbara in 2004. I received the Office of Naval Research Young Investigator Award to study organic solar cells, *devices that convert sunlight into electricity*. Many years later, the dream of my younger self has become true. My current research interests are organic semiconductors, sustainability, bioelectronics, device physics of organic solar cells, ratchets, transistors, and photodetectors. Recognition for my research includes 2015-2019 World's Most Influential Scientific Minds - Top 1% Highly Cited Researchers in Materials Science by Thomson Reuters and Clarivate Analytics, Elected Member of the United States National Academy of Engineering, Fellow of the United States National Academy of Inventors, Fellow of the European Academy of Sciences, Fellow of the American Association for the Advancement of Science, Alexander von Humboldt Senior Research Award, Fellow of the Royal Society of Chemistry (RSC), Wilhelm Exner Medal, de Gennes Prize in Materials Chemistry from the RSC, French National Centre for Scientific Research (CNRS) Ambassador in Chemical Sciences, Henry H. Storch Award in Energy Chemistry from the American Chemical Society, and many more.

My advice for young people is not letting anyone stop you from achieving your dreams, having a positive attitude, walking away from your 'comfort zone' to learn new things and be opened-minded, especially in research. Knowledge is power and nobody can take it away from you. I was raised to be a daughter, a wife, and a mother and never a career person, basically, just "shut up, listen, and obey." If I can do, you can do it too.