Road Accident As a Life-Changing Experience: Personal Statement

Personally I am a very stubborn type of person and being stubborn comes with both merits and demerits. On the merit side, it makes me very confident at the same time it helps me to learn how to make things a reality. I would not say that I have made very careful choices throughout my life, but whenever I have chosen something I have never let it be a letdown in my life. When I was in my high school, I joined the debating club and discovered that I cannot deliver my speech confidently and fluently like many of my fellow debaters. I never let my disappointment take over my courage. As a result, by the end of my senior years in high school, I had won almost all of the national level championships and the success continued until my senior years in college as well where I participated in the international platforms like Worlds Universities Debate Championship (WUDC KOC'09) and Asian Universities Debate Competition (AUDC'09) – an anecdote that certainly speaks for my determination toward my chosen goals. Right now, I have decided to pursue a Ph.D. degree in Materials Science and Engineering and my areas of interests include nanotechnology and bioengineering. To help you understand my current rofessional goal and research skill, I would like to explain my personal and education experience up to this point.

Why a Graduate Degree: Often people think that changing the outlook towards life on the basis of one single event is nothing but a cliché. But for me that cliché turns out to be real! My uncle, one of the most inspiring persons of my life, had a road accident few months back, his spinal cord injured severely and became quadriplegic. This horrific incident has become a life changing experience for me as I started my search for the latest possible treatments of spinal cord injured patients. I have found many promising research projects that will soon make the dream of going back to the normal life after the injury, a reality. This incident motivated me to choose a career in committed research where I can engage my academic background as well as can make original scientific contribution to my preferred field and to mankind in general. Clearly, graduate studies will give me the chances to attend advance courses and be the facilitator to my intended career in research.

Areas of Research Interest: My areas of interest include nanotechnology, biomedical application of materials and materials used for energy and environmental application. As I am from Materials Science background I would be able to focus in any of these fields quite extensively. I believe my background knowledge in materials properties; application of advance materials, polymers and composites and undergraduate research experience involving nanotechnology and alternate energy will be helpful during my research in any of these fields. Research Experience: Exploring the vast field of research has always been of earnest interest to me. So from the get-go of my senior year I have engaged myself in different research works. I have worked as an assistant of Dr. Khurshid Jahan on her research on "Hypertension and end stage renal disease in women with past history of pregnancy induced hypertension" under the Department of Biochemistry and Cell biology, Bangladesh Institute of Health Science (BIHS).

My job was to collect the history of the research population and monitor the test results of the collected blood samples. This research work was presented in 46th annual conference of European Association for the Study of Diabetes (EASD), Stockholm, Sweden.

My undergraduate thesis work is to develop Magnesia and Yttria (nano particle) doped Alumina based ceramic cutting to. The objectives of this study are to improve the mechanical properties and to reveal the effects of various parameters such as density, grain size and MgO & Yttria doping on the micro indentation behavior, wear performance and cutting test of alumina cutting tool. The specimens of different compositions (using nano-powder) are being prepared by uni-axial pressing and then sintered at different sintering temperature. We are performing XRD, SEM to determine the micro-structural properties. My thesis work has been accepted for 10th International Symposium on Ceramic Materials and Components for Energy and Environmental Application- (10th CMCEE), Dresden, Germany- which will take place from May 20-23, 2012

Currently, I am also working on a project of alternative energy solution that is Bio Cylinder from solid food waste. In our country bio gas is currently available through pipelines in very few regions and most of the people use LPG cylinder. Our main focus is on the three stage compression mechanism to bottle the gas in cylinders; so that commercially Bio cylinder can be available as an alternative of LPG cylinder.

This project plan has been presented in the poster presentation in International Conference of Chemical Engineering (ICChE), Dhaka, 29-30 December, 2011.

Other Qualifications: I have strong background in teaching. I have been appointed as a substitute teacher during my term-breaks in Holy Cross Girls High School, where I took physics, chemistry, mathematics and biology classes of 9 and 10 grade students. I believe my extracurricular activities have immense contribution on my social presence. It excelled in the form of leadership when I was elected as the first female president of the most popular club of my university namely BUET Debating Club. This is certainly one of the leadership experiences I really enjoyed and proud of.

Conclusion:

“Knowledge is power but enthusiasm pulls the switch” – and that certainly driving me to choose my career path. Along with my personal life changing experience, my general knack for accepting challenges and experience on exploring the vast field of research are working as key motivations to pursue a Ph.D. degree in Materials Science and Engineering at Stony Brook University. The different areas of ongoing research under the supervision of such qualified faculties seem to me the right ambience to nurture my research interests and work toward my goal. As I am currently pursuing my undergraduate degree in Materials Science, I believe I can significantly contribute to the field during my Ph.D. and beyond if I get the opportunity of exploiting my keen interest, complemented by my research background, work experience and other qualities