



Xiaodan Sun  
School of Materials Science and Engineering  
Tsinghua University  
Beijing, P.R.China, 100084

November 19, 2021

To whom it may concern:

This is Xiaodan Sun, Associate Professor in School of Materials Science and Engineering, Tsinghua University. With great pleasure I'm writing this letter of recommendation for Mr. Li Shangsong who registered one of my courses for the sophomore undergraduates *Fundamentals of Materials Science* in the fall semester, 2019, and then worked for a year in my laboratory.

My design of the courses covered a lot of literature reading and analysis, seminar discussion, presentation and calculation tasks. Shangsong Li impressed me with the leading part he took in the discussion and presentation. He always took the lead in class to deliver his analytic and insightful thoughts which very often touched upon heated discussion among students and in turn, he absorbed inspiring ideas from others. His group members all spoke highly of his contributions to the team work. From the quality of his assignments and his course performance of the final A, I observed his English proficiency, ability of theoretical research, quality of academic potential and critical thinking which enabled him to stand out among all his classmates. That was also why, by the end of the fall semester, when invited, I agreed to instruct the research team organized by him to further their presentation topic "Whether fullerenes resists oxidation" into a research project.

As his instructor and adviser, I had more opportunities to communicate with him, exchanging ideas related to his exploration and research. I noticed his great passion for scientific research, especially his strong interest in biomaterials and nanomaterials. Such strong drive of exploration and a kind of inbuilt sensitivity to the new scientific possibilities made him eager to strengthen his disciplinary foundation and in the meanwhile to expand his research horizon, so he organized the research team (all the members being first-year or second-year undergraduates) working on the research topic of "the antioxidant properties of fullerenes and their applications in cosmetics". His team signed up for Students Research Training Project as well as Academic Research Promotion Plan for Tsinghua Undergraduates (two different programs).

However, the project did not advance as smoothly as he thought. They experienced the difficulties of not being able to return to campus for experiment at the beginning of the project due to the COVID-19. However, he did not give up the project. Instead, he chose to lead the team members to conduct more in-depth literature research and academic discussion online to further optimize the original experimental protocol, from which they found out new innovation points. Notably, he organized team



discussion online every week continuously like group meetings for graduates (I was invited), with task allocation in advance, which demonstrated his outstanding organizational management ability and leadership, definitely contributing to his future research regarding teamwork. When the students could come back to the laboratories, he led the team members to carry out experiments as soon and diligently as they can, so that they won the 1st place in the final presentation of Academic Research Promotion Plan for Tsinghua Undergraduates. Also, he got an A in the final evaluation for the Students Research Training Project rated by myself.

During his research period, he not only paid attention to the scientific problems, but also cast his eyes at materials entrepreneurship related to fullerenes in cosmetics. In this respect, he led his team to sign up for the 12th "Challenge Cup" Entrepreneurship Plan Competition for Chinese College Students with the topic of "a comprehensive characterization system for anti-aging performance of skin care products", and finally got the third prize. In this competition, he showed the spirit of innovation and the idea of practicality as well as commercialization, which is quite rare and advanced as a sophomore.

Based on my observation, I think Shangsong Li is qualified and has the potential of a PhD candidate. He is a very proactive student with a holistic view, long-term vision as well as perfect leadership, which is very valuable among undergraduates and even graduates. Since my students rarely reach the level to apply for MIT, he is one of the best students in my teaching career. Compared with other hardworking students qualified for top universities like MIT, his vision and leadership can make him stand out. I have faith in his future performance in academic research, and with proper market opportunities, he will also become an excellent entrepreneur supported by innovation of materials science and engineering. Therefore I shall greatly appreciate if you can favorably consider his application for admission. Please feel free to contact me if I can be of any further help.

Sincerely yours

Xiaodan Sun

Associate Professor

School of Materials Science and Engineering

Tsinghua University

Member of Regenerative Medical Materials Branch, Chinese Society for Biomaterials

Member of Youth Committee, Chinese Society for Biomaterials

E-mail: [sunxiaodan@mail.tsinghua.edu.cn](mailto:sunxiaodan@mail.tsinghua.edu.cn)