



Editorial

Special issue on Photosynthesis Research for Sustainability



In the 19th century, especially after World War II, human population grew at an alarming rate, increasing dramatically the consumption of energy and food. Starting in the 1950s, the so-called “Green Revolution” became a solution. It substantially increased world cereal yields by strongly focusing on development of new agricultural varieties, machines and cultivation methods. Green revolution also dramatically accelerated photosynthesis research all over the world. In Azerbaijan, Professor Jalal A. Aliyev contributed greatly to the development of not only *Plant Physiology*, but in increasing substantially the wheat grain yield. Understanding the response of photosynthetic organisms to the changes in the environment is one of the important topics for photosynthesis research at the present time.

It is now generally accepted that the world's oil production will soon reach a peak, and we must reduce the use of fossil fuel, and focus mainly on renewable bioenergy. Since all fossil fuels are the products of ancient photosynthesis, we have no choice but to put all our efforts in the direction of finding ways to produce renewable bioenergy. Biomass derived from photosynthetic organisms is a great sustainable source of renewable energy. We must find ingenious ways to improve photosynthesis.

Photosynthesis contributes to all aspects of our life. The human life has evolved, and exists today due mainly to oxygenic

photosynthesis in the oceans as well as on the land -thanks to plants, algae and cyanobacteria for giving us oxygen, food, biomass and bioenergy. But, we must do better.

The 2013 conference “Photosynthesis Research for Sustainability-2013 in the honor of Jalal A. Aliyev” was held in Baku, Azerbaijan, during June 5–9, 2013, which had followed an earlier conference held in 2011 (chairman-James Barber and coordinator-Suleyman Allakhverdiev). The chairman of the local organizing committee was Ali Abbasov and the secretary of this meeting was Irada Huseynova. We are grateful to both of them as well as to all the members of the organizing committees. It was a great pleasure for the hosts of the 2013 conference to welcome nearly 350 participants from 32 countries in Baku (the capital city of the Azerbaijan Republic). Fig. 1 shows a group photograph of some of the participants and the organizers.

The 2013 conference was a great occasion for discussions on past, present, and future research on photosynthesis, from molecular to global aspects of this process. We express our gratitude to all the speakers, chairpersons, and poster presenters for their great participation during the Conference. This special issue of *Plant Physiology and Biochemistry* contains over 25 papers that were presented at the Conference, and highlights recent developments and applications of photosynthesis research.



Fig. 1. A group photograph of many of the participants during the 2013 international conference on photosynthesis in Baku, Azerbaijan. Jalal A. Aliyev (center, he has blue suit in wear). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

Acknowledgments

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