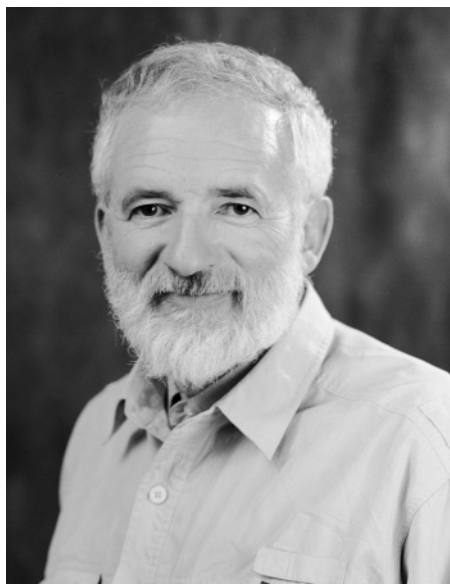


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Tribute to Arthur J. Nozik

We are pleased to be the Guest Editors for this special issue in honor of Arthur J. Nozik on the occasion of his 70th birthday. Not only does the issue represent a tribute to Art and the many important scientific contributions that he has made—and is making—but it is timely as well, since many of the included reports describe research that will help us to address the daunting clean energy challenges facing humanity. We thank the Editors and staff of the *Journal of Physical Chemistry B* as well as the many researchers and staff from laboratories around the world who have made this special issue possible.

For the past 25+ years, a general theme in Art's career has been to find ways to squeeze more efficiency out of solar energy conversion schemes. Pioneering the application of nanoscience principles to enhance solar conversion efficiency, he has focused on considering how unthermalized charge carriers might be harvested from photoelectrochemical cells, superlattices, and quantum dots. Recently, he developed alternative strategies based on inverse Auger recombination and singlet fission processes providing new, promising routes to enhance energy conversion efficiencies. His dedication to this mission has led him to important contributions in many different areas. A brief review of Art's CV shows work in a wide array of fields including ultrafast spectroscopies, quantum dot synthesis by chemical and organometallic chemical vapor deposition methods, photoelectrochemistry, and the theoretical understanding and modeling of the attainable efficiencies of photoconversion approaches.

Since 1978 when Art, together with Ferd Williams, proposed the utilization of photogenerated hot electron injection at semiconductor–molecule interfaces, clean energy has been a constant focus of his interest. Fortunately, now that society and the scientific research community have developed a consensus around the need to rapidly pursue CO₂-free energy strategies, we can turn to and build on the body of Art's work. The fact that society is moving ahead with vigor to understand and advance solar energy solutions is in part due to Art's persistence and his ability to, as he always says, “focus on the science”.

Art has frequently addressed research problems through highly collaborative efforts, resulting in a substantial and diverse portfolio of scientific achievements. His many remarkable research successes attest to his ability to work with a wide variety of people. Beyond his research contributions, Art has contributed to the scientific community by educating and mentoring numerous young scientists and by working to promote the importance of solar energy at a policy level. Everyone who knows him appreciates his friendly and even-keeled disposition, sense of humor, curiosity, scientific insight, and genuine concern for the environment and humanity. This is especially true for those of us who have had the honor of working with him. Art's continuing efforts afford a great gift to the research community wrestling to understand the science of solar photoconversion.

Randy J. Ellingson and Michael J. Heben

Guest Editors