

### Never Lose Your Nerve

The Nobel Prize in Chemistry of the year 2000 was awarded in equal parts to Alan J. Heeger, Alan MacDiarmid, and Hideki Shirakawa. The research team was cited “for the discovery and development of conductive polymers”. The Stockholm committee mentions in their comments that the work of the trio was closely connected to the rapid progress in the development of the field of “molecular electronics”.

One of them—Alan J. Heeger—presents now his memoirs under the title *Never Lose Your Nerve*. He writes on his biography, describes experiences and motivations in his academic career and environments, on successes and failures in his attempts to become an entrepreneur bringing his scientific insights to economic success, and he speaks about his own philosophical convictions. The book of 21 chapters, a prologue written by the author, and an epilogue that contains among others a list of his former students and coworkers comprises 271 pages. An index assists in allocating names and other vocabulary. 18 color photographs and 5 graphs serve to illustrate this autobiographical text.

Autobiographies are considered as a branch of literature of its own right. They are sources of studies in the history of the sciences. The question of the balance between facts and fiction belongs to the basic elements of a critical evaluation of such texts. This is not the place for such a critical deconstruction, but a caveat has to be issued to the reader of this otherwise quite amusing book: Modesty is certainly not the second name of the author and not all his claims for his scientific breakthroughs have stood the “test of time”, even if they were received with enthusiasm by the scientific community at the time of their first publication. A great researcher and important scientist—like the author of this book—is allowed to make mistakes or present false interpretations of experimental findings given that these are so clever as to trigger a wave of very good and productive research. Eventually it is the splendid idea which counts in the academic world and the clarity of the thought which causes admiration even if the facts find later interpretations other than assumed initially.

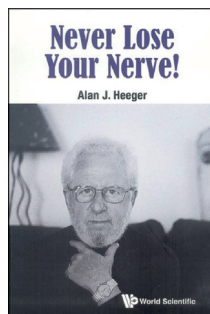
The plot of this book follows the cliché of the “American Dream” (“From rags to riches”). Alan J. Heeger was born in the year of 1936 as the first son of a poor immigrant from southern Russia. His father runs a general store in the small backwater village of Akron/Iowa. Born into humble conditions he spends his first years there. Contacts to the wide world consist in occasional

visits to nearby Sioux City/Iowa or Omaha/Nebraska. He earns his first money as a bagboy in the store of his uncle and later as a salesman of ladies shoes in a nearby shop. His mother pushes the initially unwilling youngster to go to college. He realizes his liking for mathematics and physics only in the second year of his college education at the University of Nebraska.

He is accepted as a graduate student at Cornell University but cannot afford to stay longer than a year for lack of financial support. Accepting a part-time job in the research lab of Lookheed in Palo Alto/California which pays enough to support him and his growing family, he succeeds to register with the Physics Department of UCLA-Berkeley where he gains a Ph.D. in solid-state physics. He receives an offer from the University of Pennsylvania/Philadelphia to join the Physics Department as an Assistant Professor which he accepts gladly. In need of defining his own research field he decides to investigate the electrical and electronic properties of organic solids, expecting that he would be able to rapidly create publishable results in this area. In fact, the results of his research find great attention in the academic scene such that he is soon promoted to Full Professor of Physics at the University of Pennsylvania.

Why and when it came to the cooperation with Alan MacDiarmid and Hideki Shirakawa with the consequence of the Nobel-prize worthy discovery of metal-like electrical conductivity in iodine-doped poly(acetylene) is documented extensively in chapter 12 of this book. The Nobel Prize in the year 2000 did not come as a surprise to Heeger. He had expected this award since long as he admits. But he was somewhat disappointed that it was “only” the Prize in Chemistry and not that in Physics which he had hoped to receive for his work on metal–insulator transitions in one-dimensional systems and further contributions to the solid-state physics of organic materials. However—as he writes—he finds himself in the same league as Albert Einstein whom the Stockholm committee did not cite for the greatest of his works in theoretical physics as well as Ernest Rutherford—an outstanding experimental physicist—who also had received “only” the Prize in Chemistry. Heeger emphasizes that the contribution of the two other awardees to prize-worthy findings were significant but that the ideas and concepts leading to these experiments were entirely his. He sees himself as the founding father of the fields known as “Organic Electronics” and “Conductive Polymers”.

The first 11 chapters of this book are to be understood as a prelude to the Nobel Prize, while the chapters 12–19 serve to deliberate upon his attempts to exploit his scientific insights for industrial and commercial purposes. His explanations for failures in these attempts need not to be com-



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mented here. In any case he finds public applause as an entrepreneur and his name is cited in the same breath as that of Bill Gates (Chapter 16). Heeger also talks about his love for the performing arts; he is the patron of a local drama theatre and occasionally even performs proudly on stage—greatly applauded by his audience (Chapter 17).

There exists a narrow line in autobiographical texts between the amusing story and the trivial report. In other words, it is a matter of taste what the author wishes to convey to his own family and descendants and what he wants to share with the scientific community and the rest of the world: What is necessary information and important in

order to comprehend the lifetime achievement of the author and his motivations and what is just gossip. The reader of this book ought to judge by himself whether the proverb holds true for sections of the text: “Silence is golden”—as golden as the Nobel Prize medal.

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