Honoring Pioneers

For most fields of science, there are one or two people who are essentially the originators of the field. In many very important areas, they are the people recognized by receiving a Nobel Prize or some other major prize. Fleischmann and Pons are those people in this field. Then, there are other intellectual pioneers, who have two characteristics. They were active in the early days of the field and they made major contributions. In the case of LENR, there are very roughly a dozen such people, most of them still alive. However, the scientists who pioneered the study of nuclear reactions induced by chemical effects are relatively old. Many of them were at or near retirement, when the field originated two decades ago. Some of them were recognized after their death, as is the case with Professor Guiliano Preparata, who later had a medal named after him.

The organizers of ICCF-14 were moved by the notion that it is appropriate to honor key members of the LENR community while they are still alive and contributing. But, there were and are are too many such scientists to honor within the time constraints of one conference. Hence, two particularly important leaders were singled out for recognition. They were Yoshiaki Arata from Japan and Stanislaw Szpak from the US. The form of the honor was a pair of sessions, each devoted to the work of those individuals. Commemorative plaques were presented to the two pioneers. Broad reviews of the work and results of Arata and Szpak were presented. This appendix contains the papers that resulted from the two sessions.

Talbot Chubb graciously agreed to introduce the work of Professor Arata. That introduction is summarized in the following paper. It set the stage for a presentation by Professor Arata on his recent and remarkable findings. He described the development of a “solid fusion” reactor that he invented and still studies with his long-time collaborator, Dr. Yue-Chang Zhang. Their data shows that the reactor, loaded with Pd nanoparticles coated with zirconia and pressurized with deuterium gas, produced nuclear heat for “hundreds of hours”. When operated with hydrogen gas, no heat was produced. The remarkable demonstration was accomplished with no electrical power input to the reactor during the heat-producing runs.

Frank Gordon organized the session honoring Dr. Szpak, who was unable to travel to participate in the session. His colleagues presented both what was done and what was found, while using the “co-deposition” technique, which was invented by Szpak. In that method, there is no need to acquire and characterize Pd metal for use as the cathode in electrolytic LENR experiments. Rather, the Pd is deposited from a heavy water electrolyte. Such an experiment takes less time than those in which a sheet or rod of Pd is loaded with hydrogen isotopes. The team found a wide variety of effects during the last two decades, which were systematically reviewed at ICCF-14. A paper summarizing those findings follows. The last paper in this section is a set of references to 21 papers published by Szpak’s group in refereed journals. Brief comments on each of the papers are provided in the set of references.