

July 17, 2023

To whom it may concern:

Re: Expertise for the establishment of an IEEE Milestone in Leipzig, Germany

Regarding the proposal to honor Ferdinand Braun for his role in the discovery of the rectifier effect in a metal-semiconductor junction at the Thomas School in Leipzig, Germany. I believe that it is highly appropriate to establish this IEEE Milestone. The proposed citation is:

“In the physics laboratory of the Thomas School in Leipzig in November 1874, Ferdinand Braun reported the observation that the electrical resistance of an arrangement of a wire electrode pressed by a spring against a metal sulfide crystal was dependent on direction, intensity and duration of the electrical current. This discovery of the rectifying action of a semiconductor barrier marks the beginning of solid state electronics.”

In light of the reference materials cited by the nominators, this text is accurate. It gives an accurate picture of the situation leading to the discovery. It is a fair representation of Prof. Braun’s personal involvement and interactions with other workers in the field at the time. Although the Milestone superficially honors the place of the discovery, it is appropriate to name Braun as an individual because it was his experiments that would lead to eventual development of the theory explaining the phenomenon. He performed the discovery experiments himself, and published the work before other workers recognized the significance of the effect. His work would lead to the truly revolutionary applications of modern semiconductor technology we live with today.

The primary references cited are from the time period when the experiments were performed. They clearly show Prof. Braun’s priority. The biographical references are from a wide range of sources, including professional scientific and engineering societies in Germany and other countries. They show that a significant amount of effort applied to evaluation of his work has made his personal involvement in the field clear.

I believe the proposed citation is accurate.

The references cited by the nominators have more than adequately proven the merit of the nomination. And the historical evidence is clear that this is a significant technical achievement, deserving of an IEEE Milestone.

In summary, I support the establishment of an IEEE Milestone in Leipzig, Germany, honoring both the location of the discovery and the man behind it.



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