

Biography of Hans Joachim Specht

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Having known Hans for nearly two decades—sharing countless in-depth discussions on physics and science policy, and exchanging hundreds of emails and phone calls (always beginning with his unmistakable “Specht here”)—I thought I had a fairly complete picture of the man. But after reading this exceptional biography of Hans Joachim Specht, published by Springer, I realized just how much more there was to discover about his remarkable life and scientific contributions.

This biography offers a rich, comprehensive account of a physicist whose career has been driven by an insatiable curiosity—not only to advance fundamental physics but also to bring those advances to practical applications. Hans once told me that his work on hadron cancer therapy was his most important legacy to humanity, a statement that underscores the deep purpose behind his research.

Born in 1936 in Unna, Germany, Hans began his academic journey at the Ludwig Maximilian University of Munich and ETH Zurich, earning his doctorate in 1964 under the supervision of Heinz Maier-Leibnitz. The book traces sixty years of groundbreaking physics work, a true tour de force through multiple disciplines—from Atomic and Nuclear Physics to Ultra-Relativistic Heavy-Ion Physics and Medical Physics, much of it conducted at major accelerator facilities.

Among his many achievements, Hans discovered shape isomerism in heavy nuclei—demonstrating that nuclei can exist in a deformed, cigar-shaped state before undergoing fission—a major contribution to nuclear structure physics. In the early 1980s, he pivoted to high-energy physics at CERN, becoming the spokesperson for the HELIOS/NA34-2 experiment in 1984, and later founder and spokesperson of CERES/NA45, and a key figure in the NA60 experiment. His work in these collaborations significantly deepened our understanding of the quark-gluon plasma.

Hans’s foundational contribution to ALICE, particularly in developing the conceptual design for a dedicated LHC heavy-ion experiment, was instrumental in transforming the idea of heavy-ion physics at the LHC into reality. His leadership within ECFA and his strong advocacy for institutional support from Germany were critical in shaping ALICE into one of CERN’s flagship experiments.

Equally impactful, however, has been Hans’ leadership in science policy and research infrastructure. As Scientific Managing Director of GSI Darmstadt (1992–1999), he played a key role in initiating tumor therapy with carbon ions, an effort that eventually led to the establishment of the Heidelberg Ion-Beam Therapy Center (HIT)—Europe’s first facility of its kind. During his tenure, the groundwork for the future FAIR (Facility for Antiproton and Ion Research) was also laid, as discussed in this biography.

Hans’s passion for music, combined with his polymath nature, fueled his curiosity about the intersection of physics, music, and

neuroscience—investigating early processing in the brain related to music perception. His lectures on these topics, delivered around the world, along with publications in *Nature*, remain both memorable and impactful. This interdisciplinary spirit was emblematic of his drive to bridge diverse scientific domains.

What makes this biography particularly compelling is how it intertwines Hans’ scientific achievements with personal anecdotes and reflections from colleagues, collaborators, and friends. These nearly 30 personal notes provide a well-rounded and deeply human portrait of Hans—as a scientist, a leader, and a friend.

I wholeheartedly recommend this book to anyone who knew Hans or who is interested in the broader story of scientific progress through the lens of one of its most dedicated and visionary contributors. ■

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