

Kurt Binder Biography

December 24, 2020. Patrick Charbonneau

Kurt Binder (February 10, 1944-), was born in Austria, the son of Eduard Binder, a technical engineer, and Anna Binder, née Eppel. He spent his childhood in Vienna, where he attended public schools.

Binder studied technical physics at Technical University of Vienna (1962-1969), obtaining a Diploma in Physics in 1967, and a PhD in Technical Sciences in 1969, for a thesis entitled “Berechnung der Spinkorrelationsfunktionen von Ferromagnetika” (Calculation of the spin correlation functions in ferromagnets), under the supervision of Helmut Rauch. He was then staff scientist at the Technical University of Munich (1969-1974), taking leaves of absence for an IBM postdoctoral fellowship at the IBM Zürich Research Laboratory (1972-1973), and for a six-month visit of Pierre Hohenberg at Bell Laboratories, in New Jersey (1974). Binder then became Professor of Theoretical Physics at the University of Saarland in Saarbrücken (1974-1977). He subsequently took a Full Professor position at the University of Cologne with a joint appointment at the Kernforschungsanlage (KFA) Jülich (1977-1983), and then a Full Professor of Theoretical Physics position at the Johannes Gutenberg-University in Mainz, where he became emeritus in 2012.

From his initial introduction of Monte Carlo simulations to the study of critical phenomena, during his PhD thesis, Binder became a leader developing and applying computer simulations to various problems in condensed matter and soft matter physics. Starting in the mid-’70s, this effort included the study of disordered systems, such as spin glasses, quadrupolar glasses, and structural glasses. His early computational studies of the Edwards-Anderson model, in particular, seeded a numerical effort that is ongoing to this day, and eventually led him to co-author (with Peter Young) a seminal review on spin glasses for *Review of Modern Physics* (1986). His role as spokesperson for a DFG-funded collaboration on structural glasses (1987-2001), further led him to co-author (with Walter Kob) a survey book, entitled “Glassy Materials and Disordered Solids” (2005).

Binder was appointed as Corresponding Member of the Austrian Academy of Sciences (1991), as External Member of the Bulgarian Academy of Sciences (2005), and as member of the German Academy of Sciences (2011). He notably received the Max Planck Medal of the German Physical Society (1993), the Berni J. Alder CECAM Prize (2001), the American Physical Society Polymer Physics Prize (2020), and the Boltzmann Medal of the International Union of Pure and Applied Physics (2007) “for his leading role in developing computer simulation methods, in particular the Monte Carlo method, into a reliable and quantitative tool of statistical physics and for his many central contributions to statistical physics in this context.”