Univ.-Prof. Dr. Klaus Mainzer,
president of European Academy of Sciences and Arts

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Mainzer graduated from the Landrat-Lucas-Gymnasium in Opladen and studied mathematics, physics and philosophy. In 1973, he obtained a doctorate in philosophy and mathematics fundamentals ("Mathematical Constructivism"). In 1979, Mainzer got his habilitation in philosophy with a thesis on "Space, Geometry and Continuum" at the University of Münster. In 1980, he received a Heisenberg grant. He was a professor for the basic theory and history of exact sciences at the University of Konstanz from 1981 to 1988. He was the Vice-Rector of the University of Konstanz between 1985 and 1988.

From 1988 to 2008, Klaus Mainzer was a professor of the philosophy of science and director of the Institute for Philosophy. Since 1998, he is the founding director of the Interdisciplinary Institute for Computer Science at the University of Augsburg. Between 2008 and 2016, he held the chair for philosophy and philosophy of science at the Technical University of Munich (TUM). Mainzer was appointed director of the Carl von Linde Academy. He was the Munich Center for Technology in Society (MCTS) founding director at the Technical University of Munich (TUM) between 2012 and 2016. Since 2016, Mainzer has been "TUM Emeritus of Excellence." Since 2019, Mainzer has been Senior Professor at the Faculty of Mathematics and Natural Sciences and the Tübingen Center for Advanced Studies (TüCAS) at the Eberhard Karls University of Tübingen.

He was a member of the Advisory Board of the TUM Institute for Advanced Study (IAS) (2009-2016), Principal Investigator (PI) of the TUM Cluster of Excellence Cognition in Technical Systems (CoTeSys) (2009-2014) and a member of the Editorial Board of the International Journal of Bifurcation and Chaos in Applied Sciences and Engineering (2005-2015). He is a member of the Research Center for Education and Information (Beijing University), the Academia Europaea (London), the European Academy of Sciences and Arts (Salzburg) and there Dean of the Class for Natural Sciences 2018–2019, member of the German Academy of Science and Engineering (acatech), there spokesman for the work project "Responsibility" 2018–2019 and since 2018 spokesman for the working group "Basic Questions." Mainzer was a member of the Board of Trustees of the Daimler and Benz Foundation (Ladenburg) (1998–2008) and has been Deputy Chairman of the Board of Trustees

of the Udo Keller Foundation Forum Humanum (Hamburg) since 2014,

He gave guest lectures or carried out visiting professorships in Brazil, China, India, Japan, South Korea, USA and Russia. He was a visiting scientist at the Euler International Mathematical Institute (St. Petersburg), the Hausdorff Research Institute for Mathematics (Bonn) and the Leibniz Center for Informatics at Schloss Dagstuhl.

Klaus Mainzer initially published on the concept of a number, the fundamentals of geometry, space, time, symmetry and quantum mechanics. He became known as a fundamental theorist of complex systems and artificial intelligence (AI), who considers their social consequences in the age of digitization. He was the first who examined mathematical models of complex systems (e.g., cellular automatons and neural networks) that organize themselves in nature - from molecular and cellular systems to organisms and brains. With Leon O. Chua of University of California, Berkeley, he pointed out that the non-linearity and instability are insufficient to explain new structures (emergence). The prerequisite is the principle of local activity, which mathematically explains the emergence of complex structures on the edge of chaos.

In basic mathematical research, he began studying constructive mathematics against the background of Kant's philosophy. Based on degrees of predictability and constructiveness, he researched the extent to which mathematical proofs - and thus human thinking - can be reduced to algorithms and computers. The world's calculation leads again to complex systems and the question of the degree to which they can be digitized (e.g., as quantum information systems).

In the technical sciences, Mainzer advocates increased basic research into verification programs to overcome the blind spots of statistical learning algorithms (machine learning) in AI. Complex Systems in the Internet of Things (e.g., Smart Mobility, Industry 4.0) lead to a data explosion (Big Data), which raises security and responsibility issues. In addition to program verification, Mainzer demands technology design that takes social, ecological, ethical and legal aspects into account in the innovation from the outset. In the global competition of world systems, he calls for the European innovation area to reflect on its legacy of individual human rights and to develop artificial intelligence as a service system further.

In November 2020, the European Academy of Sciences and Arts elected Mainzer as its new president. He succeeded Felix Unger, who had served as president for three decades.