

# Lars HULTMAN

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Lars Hultman received his PhD 1988 and became Professor/Head of Division in Thin Film Physics at Linköping Univ. in 1998 (ongoing). Since 2024, he is Visiting Professor at MCUT, New Taipei City. He is also CEO of the Swedish Foundation for Strategic Research (from 2013) and Chamberlain to King Carl XVI Gustaf of Sweden (from 2022).

Lars' research concerns materials science and nano technology. He has made breakthrough achievements on innovative experimental and structural modelling studies to understand, from an atomistic standpoint, fundamental relationships between plasma film deposition parameters and film structure. He discovered (reported in 2040) *Goldene* (two-dimensional atomic sheets of gold). He has authored close to 1000 papers, including Science and Nature for a h-index of 105. His innovations have resulted in patents on vapor deposition processes, wear-resistant cutting tools, low-friction coatings on components, diffusion barriers in microelectronics, B<sub>4</sub>C thin film neutron detectors, and catalytic *goldene*. Another example is high-quality GaN layers based on a discovery of transmorphic epitaxial AlN layers on SiC wafers made together with Taiwanese entrepreneurs in the Swedish company SweGaN.

Lars has created a world-class research environment at Linköping University in materials and surface science. He founded the Industry-Academia Consortium for Functional Materials Research (FunMat), where companies pool resources to discover solutions to technological problems. "Application-inspired basic research" underpins his research philosophy. He is a recognized educator with over 50 graduate students and 20 postdocs, all now leaders in science and industry. He is also an ardent proponent for interdisciplinary research, industrial participation, and international exchange and undertook a sabbatical at University of Illinois, Urbana from 2004-2006. Lars is an elected member of both Royal Swedish Academies of Science (KVA) and Engineering Sciences (IVA), as well as Fellow of the American Vacuum Society (AVS). Other recognitions include European ERC Advanced Grant, Wallenberg Scholar, Akzo Nobel Sweden Science Award, R.F. Bunshah Award and Honorary ICMCTF Lecture, and AVS John A. Thornton Memorial Award and Lecture. He is Board Member of the Sweden-Japan Foundation and Chair Advisory Committee for the Swedish Wallenberg Initiative Materials Science for Sustainability (WISE).

