

Overview of Early Publications on Atomic Layer Deposition

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Atomic layer deposition (ALD) is a technique that has been instrumental in enabling the semiconductor industry to maintain its adherence to Moore's Law, and is becoming a game-changer in several other fields. A worldwide open collaborative initiative called the "Virtual Project on the History of ALD" (VPHA) was launched in summer 2013 to explore how the ALD concept was developed; which were the first ALD experiments; when, where, why and by whom they were made. This poster lists the early ALD publications up to 1986, and provides individual comments on the significance and contents of the publications. ALD was invented independently (at least) twice, under the names "molecular layering" and "atomic layer epitaxy". It is seen, for example, that TiO₂ has been grown by ALD from TiCl₄ and H₂O on silica particles in 1965 and that ALD in fluidized bed has been modelled in 1979. This overview should raise awareness of the early ALD work that was carried out in countries such as Bulgaria, Estonia, Finland, France, Germany, Japan, the Soviet Union, and the United States. This will help today's growing global ALD community to put their research into context.

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