

## Overview of doctoral theses on Atomic Layer Deposition collected in the Virtual Project on the History of ALD

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The volunteer-based Virtual Project on the History of ALD (VPHA) Open Science project has been set up to clarify the early days of Atomic Layer Deposition (ALD), especially related to the two independent discoveries. In VPHA, early ALD publications are overviewed up to 1986; 4 scientific journal articles have already resulted [1-4]. In this work, we collect and analyse worldwide trends in doctoral theses reporting on ALD up year 2018. At the time of writing the abstract, the collection contains 477 entries. More entries are welcome.

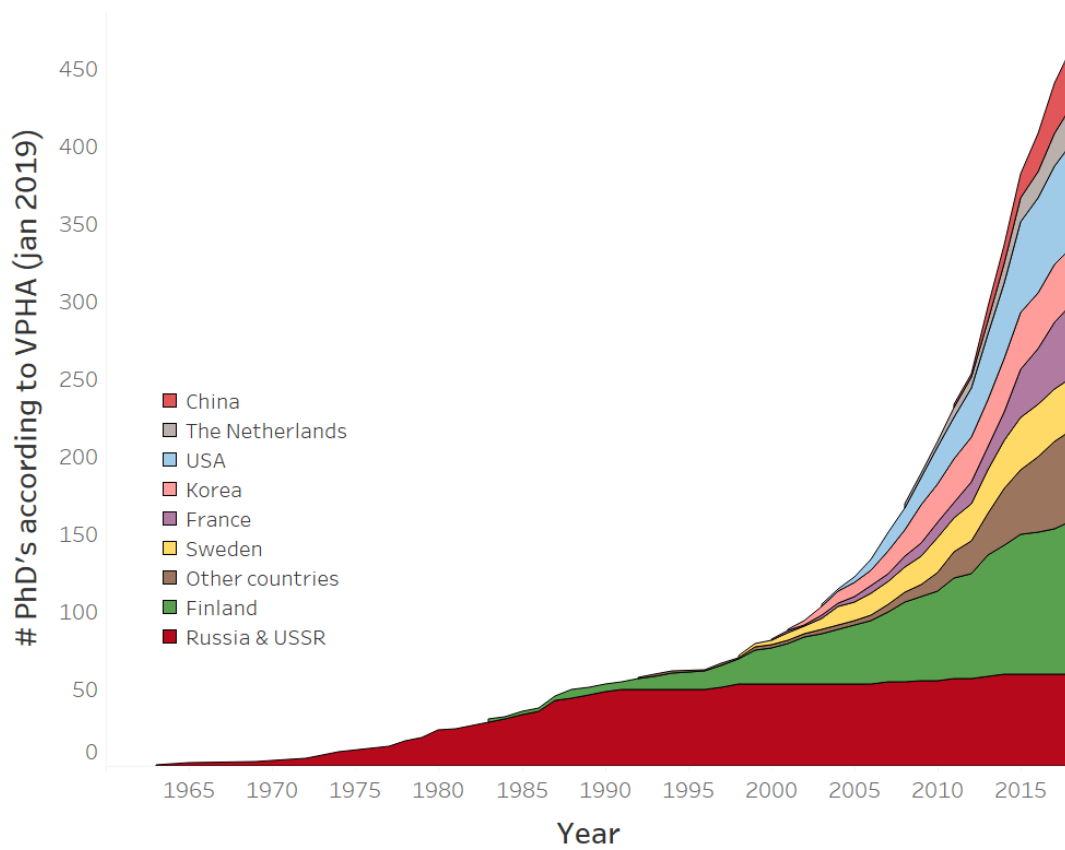
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[1] R. L. Puurunen, *Chemical Vapor Deposition*, 20, (2014) 332–344

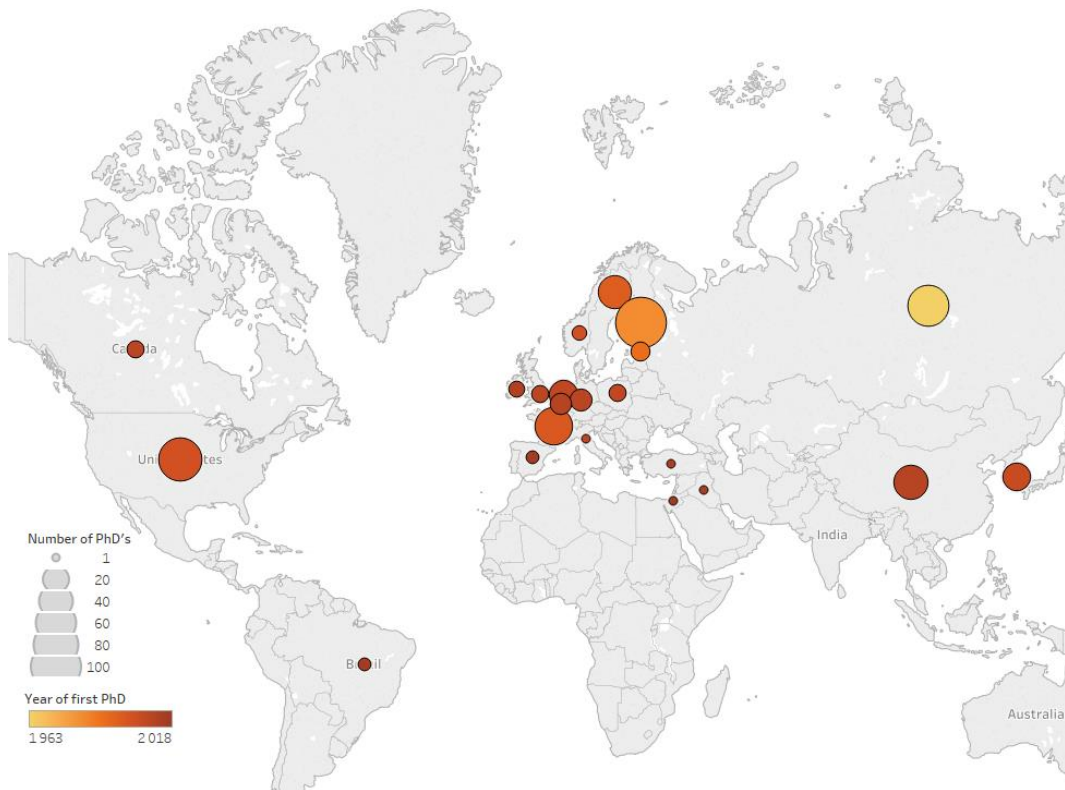
[2] A. A. Malygin, V. E. Drozd, A. A. Malkov, and V. M. Smirnov, *Chemical Vapor Deposition*, 21, (2015) 216–240

[3] E. Ahvenniemi et al., *Journal of Vacuum Science & Technology A*, 35, (2017) 010801

[4] R. L. Puurunen, *ECS Transactions*, 86, (2018) 3–17



**Figure 1.** Cumulative plot of doctoral theses on ALD-related topics collected in the VPHA, up to January 2019.



**Figure 2.** A world distribution plot of doctoral theses on ALD-related topics collected in the VPHA, up to January 2019. The size of the spheres represents the number of records, while the colour represents the first thesis originating from that location.