

**Name, Date of birth:** Mats Halvarsson, 7<sup>th</sup> of June 1965

**Affiliation:** Materials Microstructure  
Department of Physics  
Chalmers University of Technology  
Gothenburg, Sweden



**Education and degrees**

- Professor in Physics, July 2013
- Docent in Physics, December 1999
- PhD in Physics, September 1994
- Thesis title: The microstructure and stability of CVD alumina coatings
- Supervisor: Prof. Hans Nordén
- M. Sc degree in Engineering Physics, Chalmers, 1990

**Current and previous positions**

- 2016 – Professor, Dept. of Physics, Chalmers University of Technology
- 2015 – Head of Division of Materials Microstructure
- 2013 – 2015 Professor, Dept. of Applied Physics, Chalmers University of Technology
- 2010 – 2013 Bitr. Professor, Dept. of Applied Physics, Chalmers University of Technology
- 2009 – 2010 Docenttjänst, Dept. of Applied Physics, Chalmers University of Technology
- 2005 – 2008 Forskare, Dept. of Applied Physics, Chalmers University of Technology
- 1999 – 2005 Forskare, Dept. of Experimental Physics, Chalmers University of Technology
- 1995 – 1999 Forskarassistent, Dept. of Experimental Physics, Chalmers University of Technology and Göteborg University
- 1990 – 1995 Ph.D. student position in Physics, Chalmers University of Technology, and Göteborg University

**National and international assignments of importance**

- Evaluator of research proposals for VR Materials Science, 2016.
- Licentiate opponent twice
- PhD opponent twice
- Member of PhD graduation committees 14 times
- Evaluator “lektorat” for Uppsala University and Linköping University
- Referee for international scientific journals, such as Journal of the American Ceramic Society, Surface and Coatings Technology, Journal of Alloys and Compounds and Applied Surface Science
- Key note lecturer at international conferences, including the Gordon Research Conference on High temperature corrosion twice
- Member of the external advisory board for Microscopy of Oxidation conference
- Member of the scientific management board for HTC, the Swedish high temperature corrosion centre

**Current external funding**

Topic	Funding agency/source	Period	Total (kSEK)
In-situ high temp. corrosion	VR	2015-2018	3200
CVD TiAlN	Walter AG	2013-2018	3000
CVD alumina	Sandvik Coromant	2016-2017	1000
3D-printing nano-structures	AoA nano	2016-2017	1000 (of 2000)
High temperature corrosion	The Swedish energy agency	2014-2017	3000
CVD 2.0	SSF	2016-2021	10455 (of 30028)
CVD degradation	SSF/Sandvik	2017-2020	4000
High temperature corrosion and mech. properties	VR	2018-2021	4537

### **Collaboration, innovation and outreach activities**

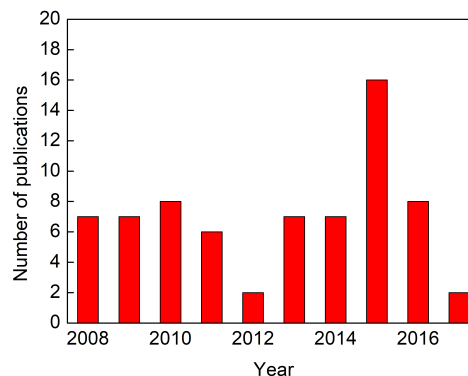
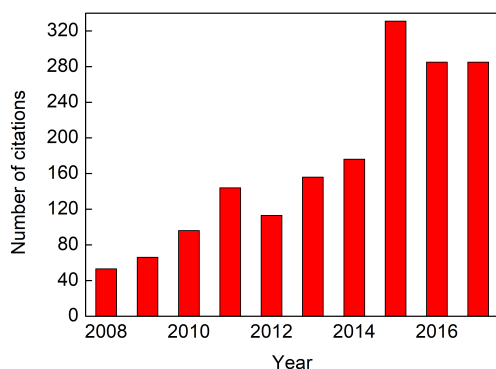
Halvarsson has a well-established international research network with strong links with partners around the world, such as: Jülich Forschungszentrum (GER), Osnabrück University of Applied Sciences (GER), Åbo Akademi (FIN), University of Gothenburg, Royal Institute of Technology (KTH), Jönköping University, Linköping University, Centro Sviluppo Materiali (CSM, ITA), Tubacex (SPA), DONG Energy (DK), University of Cassino (ITA), Technical University of Denmark (DTU, DK), VTT (FIN), NPL (UK), Cogne Acciai Speciali (ITA), Fortum, Vattenfall, Valmet, Siemens Industrial Turbomachinery, Outokumpo, Sandvik Heating Technology, Sandvik Materials Technology. Organiser (together with Lena Falk) of the Chalmers Microscopy School courses 1998-2016. The courses have had around 40 participants each year, coming from companies and universities in the Nordic countries.

### **Selected publications**

1. M. Halvarsson and S. Vuorinen, Microstructural investigation of CVD TiN /  $\kappa$  Al<sub>2</sub>O<sub>3</sub> multilayer coatings on cemented carbides, *Journal of Refractory Metals & Hard Materials*, 15 (1997), 169 - 178
2. Y. Yourdshahyan, C. Ruberto, M. Halvarsson, L. Bengtsson, V. Langer, B. Lundqvist, S. Rупpi and U. Rolander, Theoretical structure determination of a complex material:  $\kappa$ -Al<sub>2</sub>O<sub>3</sub>, *Journal of the American Ceramic Society* 82 [6] (1999), 1365-1380
3. M. Halvarsson, A. Larsson and S. Rупpi, Study of the interfacial structure and chemistry of CVD  $\kappa$ - Al<sub>2</sub>O<sub>3</sub>/TiC multilayer coatings, *Micron* 32 (2001), 807 - 815
4. M. Halvarsson, J. E. Tang, H. Asteman, J.-E. Svensson and L.-G. Johansson, Microstructural investigation of the breakdown of the protective oxide scale on a 304 steel in the presence of oxygen and water vapour at 600°C, *Corrosion Science*, 48 (2006), 2014-2035
5. T. Jonsson, A. Järnäs, J.-E. Svensson, L.-G. Johansson and M. Halvarsson, The effect of traces of SO<sub>2</sub> on iron oxidation: A microstructural study, *Oxidation of Metals*, 67 (2007), 193-213
6. S. Canovic, S. Rупpi, A. Vojvodic, J. Rohrer, C. Ruberto, P. Hyldgaard and M. Halvarsson, TEM and DFT investigation of CVD TiN/ $\kappa$ -Al<sub>2</sub>O<sub>3</sub> multilayer coatings, *Surface and Coatings Technology* 202 (2007), 522–531
7. B. Pujilaksono, T. Jonsson, M. Halvarsson, I. Panas, J.-E. Svensson and L.-G. Johansson, Paralinear oxidation of chromium in O<sub>2</sub>+H<sub>2</sub>O environment at 600-700°C, *Oxidation of Metals* 70 (2008), 163–188
8. M. Halvarsson, T. Jonsson, L. Ingemarsson, M. Sundberg, J.-E. Svensson and L.-G. Johansson, Microstructural investigation of the initial oxidation at 1450°C and 1500°C of a Mo(Si,Al)<sub>2</sub>-based composite, *Materials at High Temperature*, 26 [2] (2009), 137-143
9. S. Canovic, B. Ljungberg and M. Halvarsson, CVD TiC/alumina multilayer coatings grown on sapphire single crystals, *Micron*, 42 (2011), 808 – 818
10. A. Chyrkin, S.N. Mortazavi, M. Halvarsson et al., Effect of thermal cycling on protective properties of alumina scale grown on thin Haynes 214 foil, *Corrosion Science*. 98 (2015), 688-698.

### **Citation analysis**

Number of publications in peer reviewed journals	132
Total number of citations <sup>1</sup>	1926
<i>h</i> -index <sup>1</sup>	23



<sup>1</sup>Source: Google Scholar (accessed on January 7, 2018)