

Aschaffenburg University and its laboratory for coating technology

Prof. Dr. Manfred Stollenwerk



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university of applied sciences



Location of Aschaffenburg





Structure of German University Landscape

Universities

Classical Universities

- Focus on Theory
- Mainly fundamental research
- Lectures with scientific Background

Universities of Applied Sciences

- Focus on Teaching
- Focus on Applied Sciences
- Research for Industrial Applications
- Lecturers with industrial Background

Facts and figures

May 1994:	Foundation
October 1995:	Start of lectures
October 2000:	Independence
current:	more than 3.300 students 2 faculties 13 Bachelor's programmes 6 Master's programmes



Historical campus in Aschaffenburg



Campus Overview





Historical and modern campus





Historical and modern campus





Modern lecture rooms





Small groups – target-oriented studying



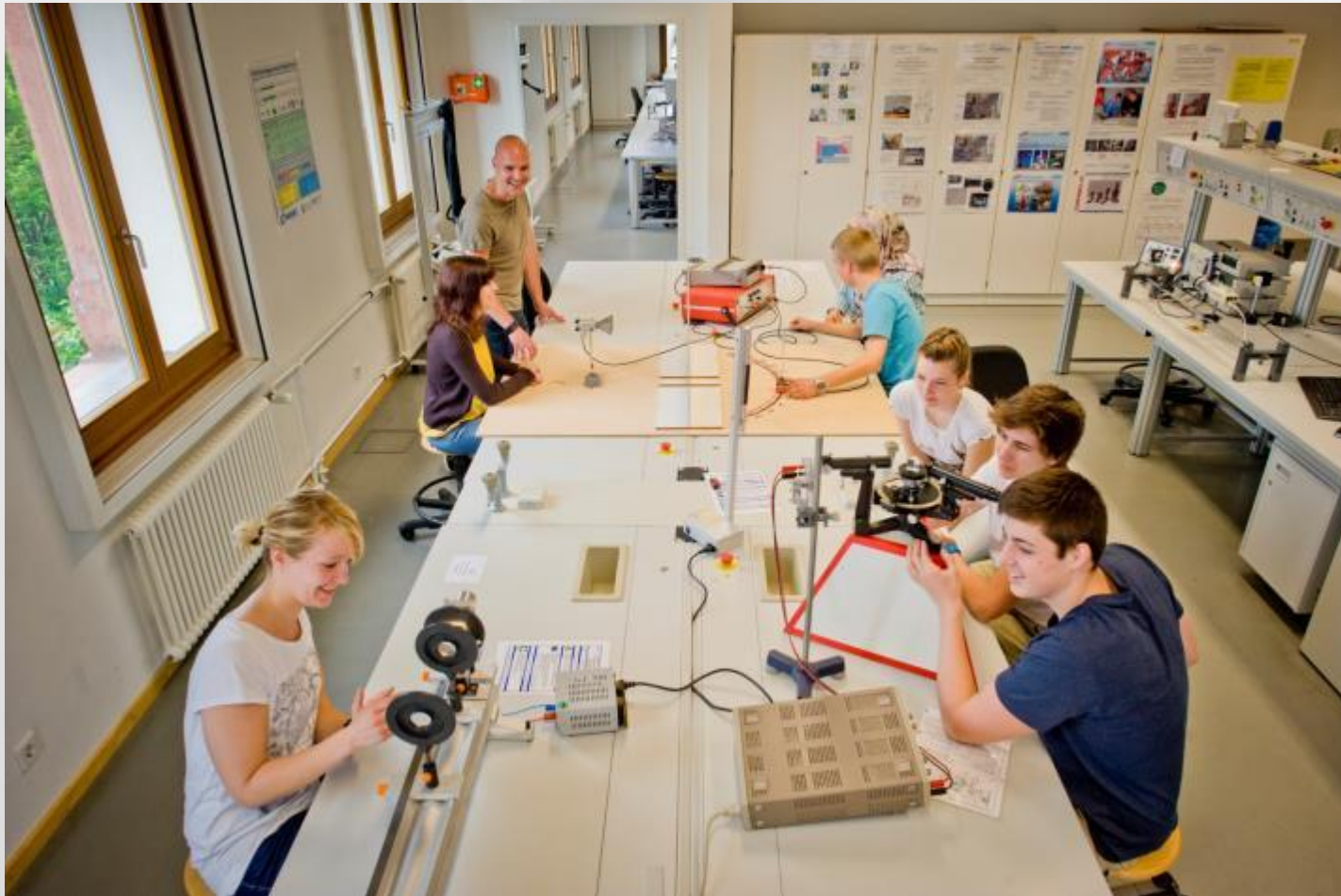


State-of-the-art laboratory equipment





Conceptual learning by laboratory tests





Library

- Large selection of up-to-date publications in the respective fields of study
- Access to all international academic literature via inter-library loan
- Wide range of e-books available





Language Center



- Multimedia Language Laboratory for group teaching as well as individual training
- Wide selection of language software
- English, Spanish, French, Italian, Chinese, Russian, Japanese, German as a Foreign Language



Bachelor's programmes

Faculty of Engineering

- Electrical Engineering and IT
(full-time and career-integrated studies)
- Industrial Engineering
(full-time and career-integrated studies)
- Industrial Engineering
(WIMAT)
- International Technical Sales
Management
- Mechatronics
- Multimedia Communication and
Documentation
- Renewable Energies and Energy
Management

Faculty of Business

- Business Administration
- Business Administration and Law
- International Real Estate Management



Master's programmes

- Electrical Engineering and IT
(full-time studies)
- Electrical Engineering
(correspondence course in cooperation
with Darmstadt University of Applied
Sciences and ZFH)
- Industrial Engineering



Facts and figures



- **9 Bachelor's programmes**
- **3 Master's programmes**
- **approx 2000 students**
- **50 professors**
- **ca. 60 assistant lecturer**
- **ca. 50 lab**

Course structure

Bachelor

10	
9	
8	
7	Advanced Studies
6	Advanced Studies
5	Practical Training
4	Basic Studies
3	Basic Studies
2	Basic Studies
1	Basic Studies

Master

Master Studies
Master Studies
Master Studies

TOP-Rankings



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2016	„Die Zeit“-CHE-Ranking „Internetforum „MeinProf.de“	Ergebnisse im Mai 2016 Platz 3	
2015	„Die Zeit“-CHE-Ranking „Internetforum „MeinProf.de“	Platz 4	
2014	„Die Zeit“-CHE-Ranking „Internetforum „MeinProf.de“	Spitzengruppe BW, BWR Platz 1	
2013	„Die Zeit“-CHE-Ranking „Internetforum „MeinProf.de“	Spitzengruppe ET und ME Platz 1	
2012	„Die Zeit“-CHE-Ranking „Internetforum „MeinProf.de“	<i>Keine Studiengänge der HS AB gerankt</i> Platz 1	
2011	„Die Zeit“-CHE-Ranking „Internetforum „MeinProf.de“	mit „sehr gut“ bewertet in den 3 gerankten Studiengängen BW, BWR, WI Platz 1	
2010	„Die Zeit“-CHE-Ranking „Internetforum „MeinProf.de“	Platz 1 für Elektro- u. Informationstechnik, Platz 2 für Mechatronik Platz 1	
2009	„Die Zeit“-CHE-Ranking Internetforum „MeinProf.de“	<i>keine Studiengänge der HS AB gerankt</i> Platz 1	
2008	„Die Zeit“-CHE-Ranking Internetforum „MeinProf.de“	Platz 1 für Betriebswirtschaft und Recht, Spitzengruppe BW und WI Platz 1	
2007	„Karriere“: „Die Zeit“-CHE-Ranking Internetforum „MeinProf.de“	Platz 4 Wirtschaft, Platz 2 Ingenieurwissenschaften Platz 1 für die Studiensituation in ET u. ME Platz 1	

Laboratory for coating technology

Prof. Dr. Manfred Stollenwerk
Johannes Stadtmüller, B. Eng.



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Overview



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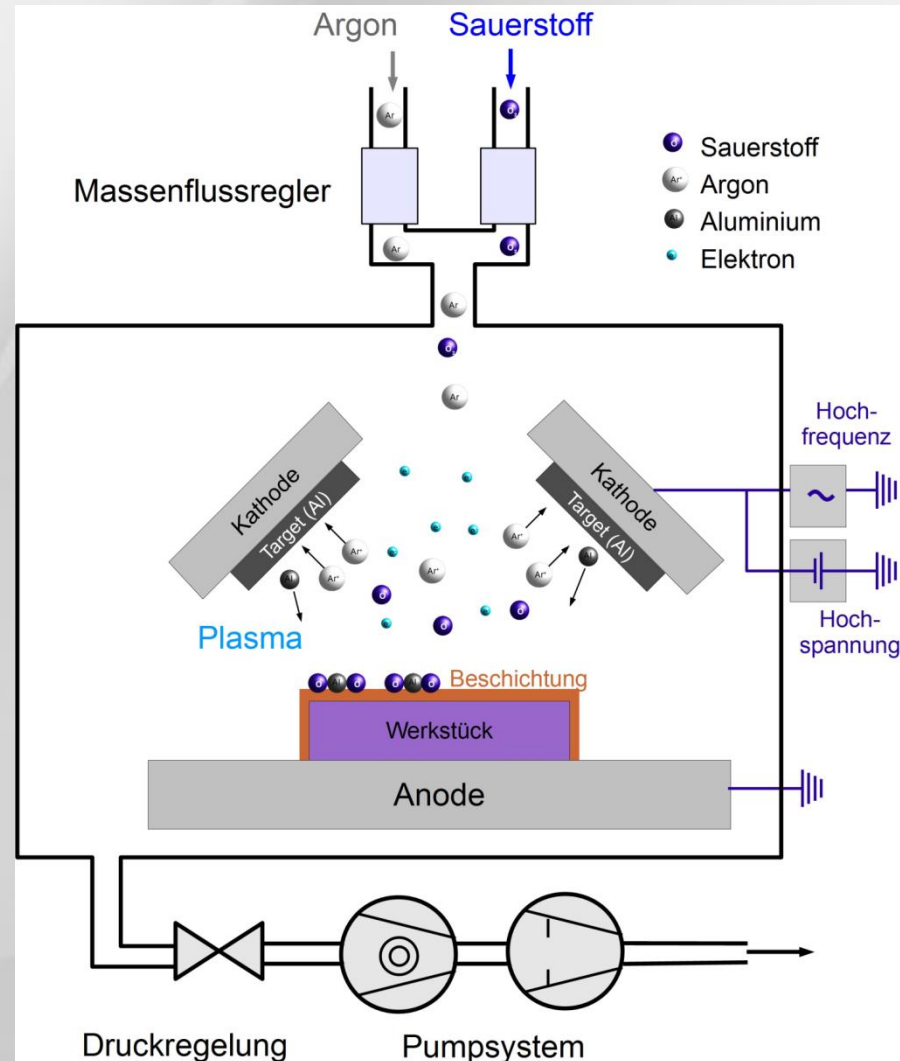
Sputter & Dektak



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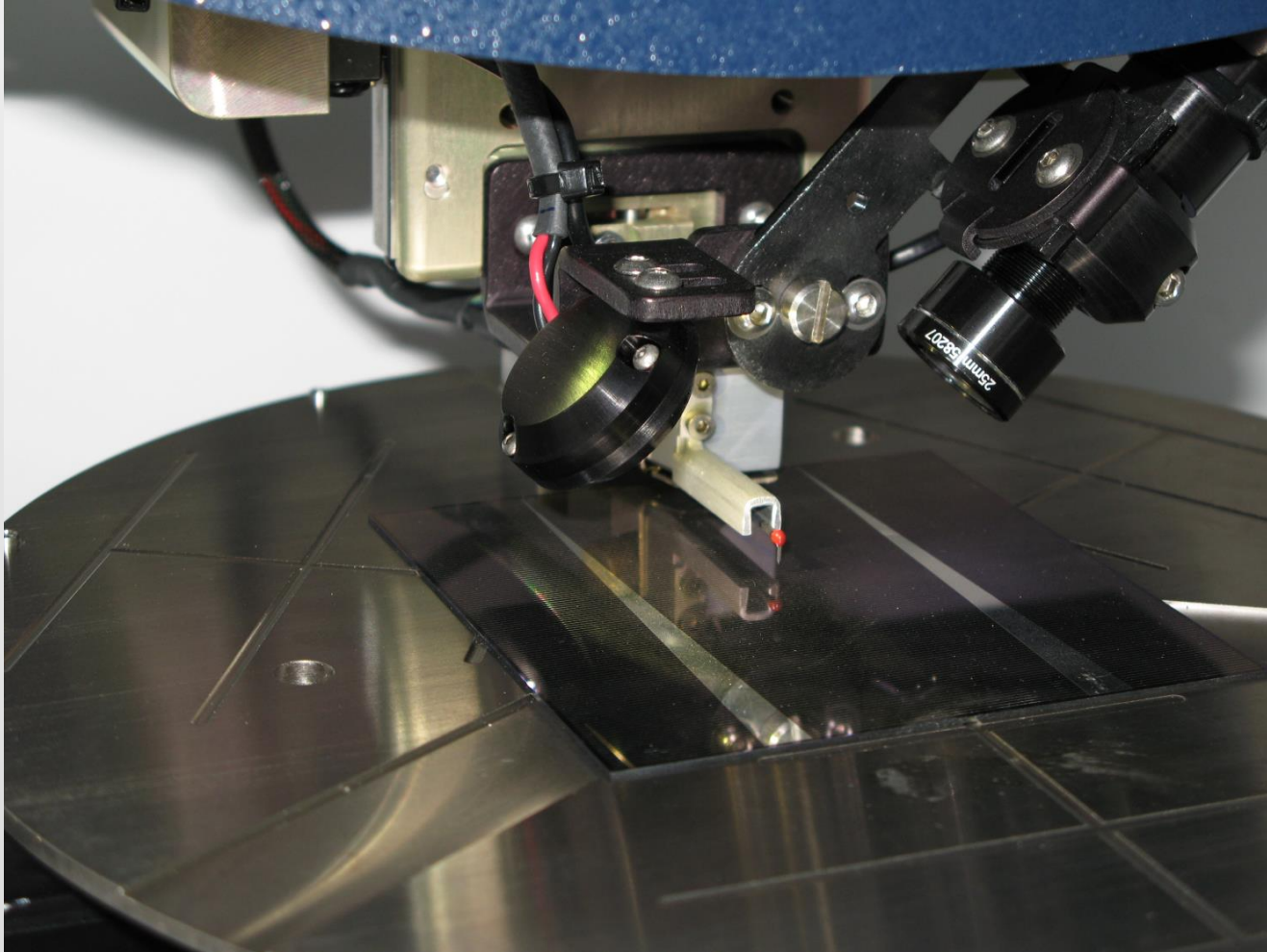
Sputter Process



Profilometer



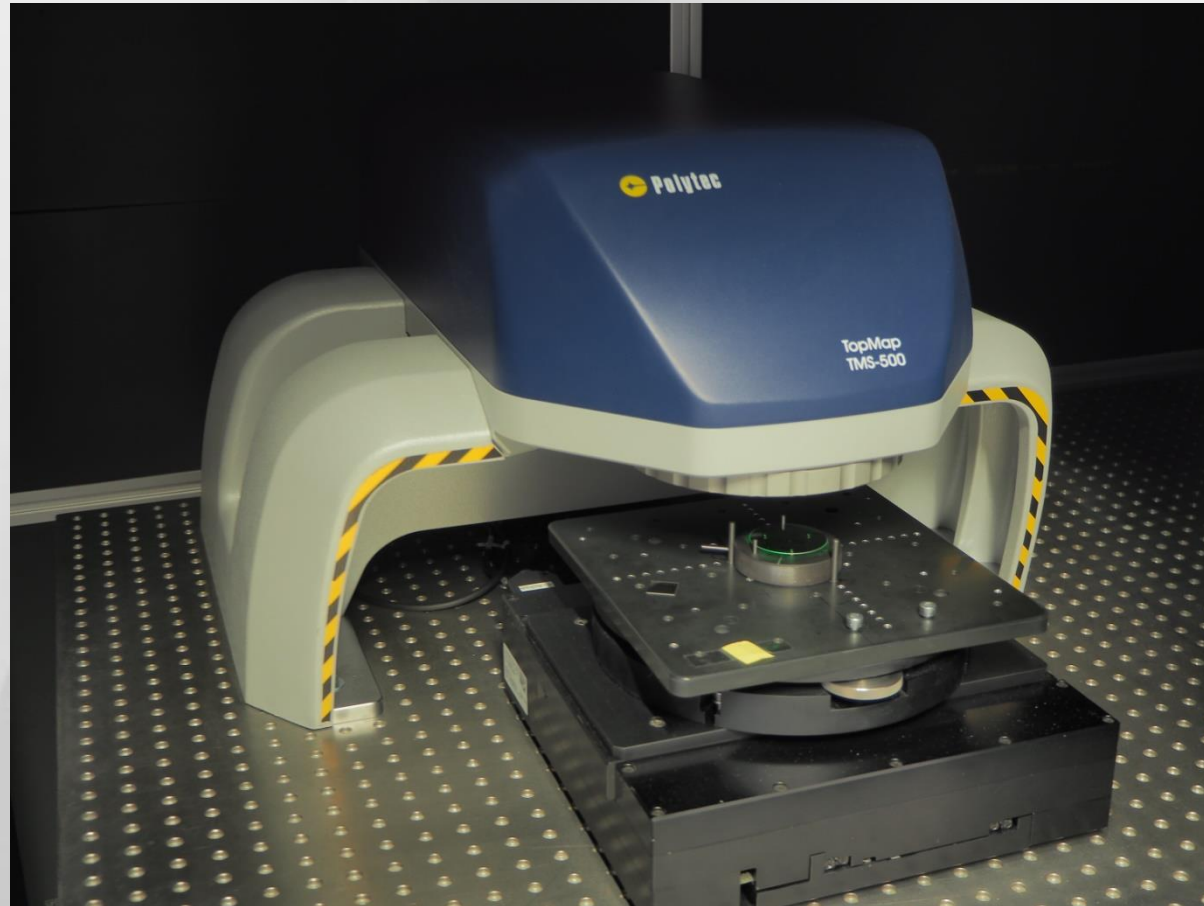
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Interferometer



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Electrical Measurement Equipment



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Experiments Vacuum Technology



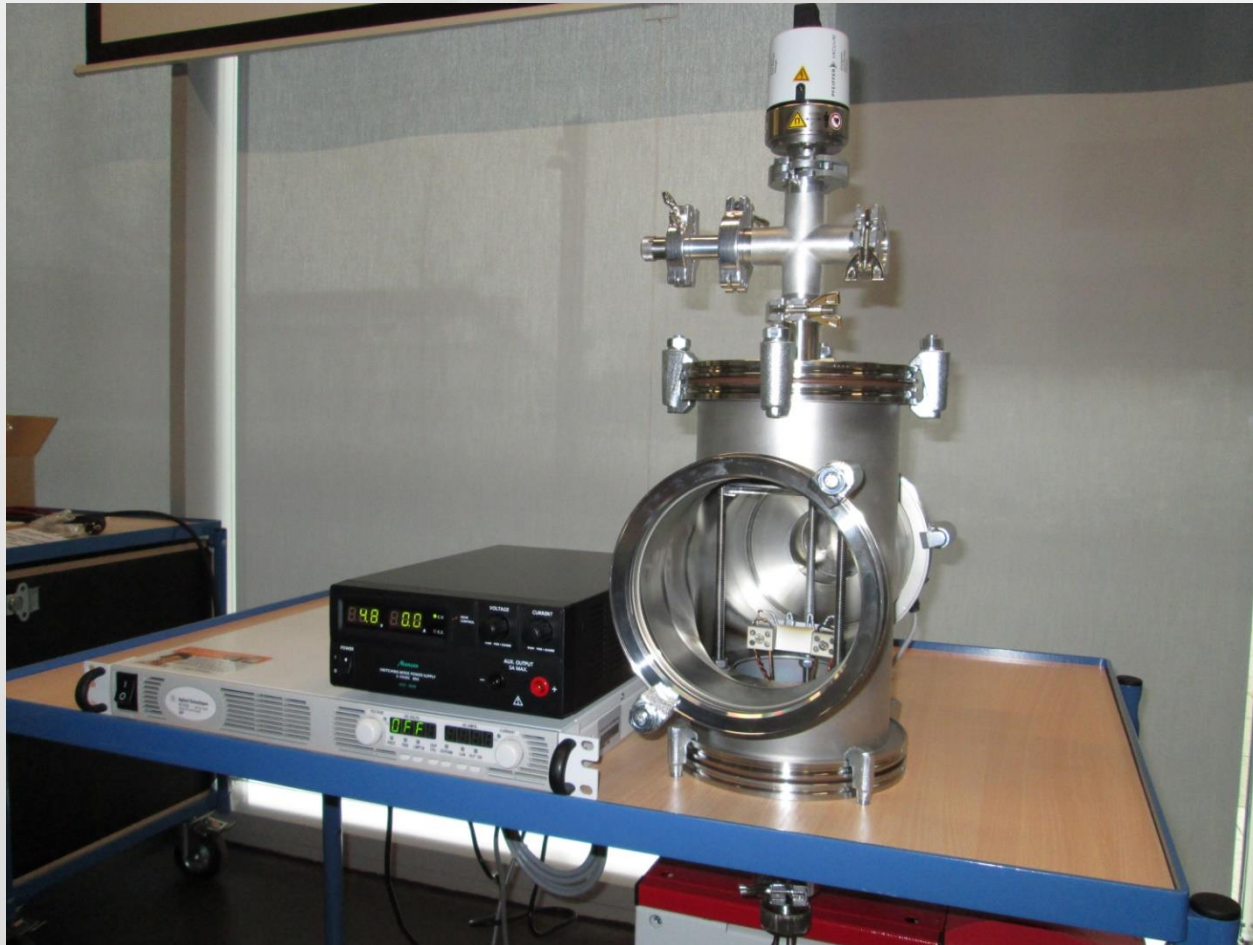
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Experiments Coating Technology

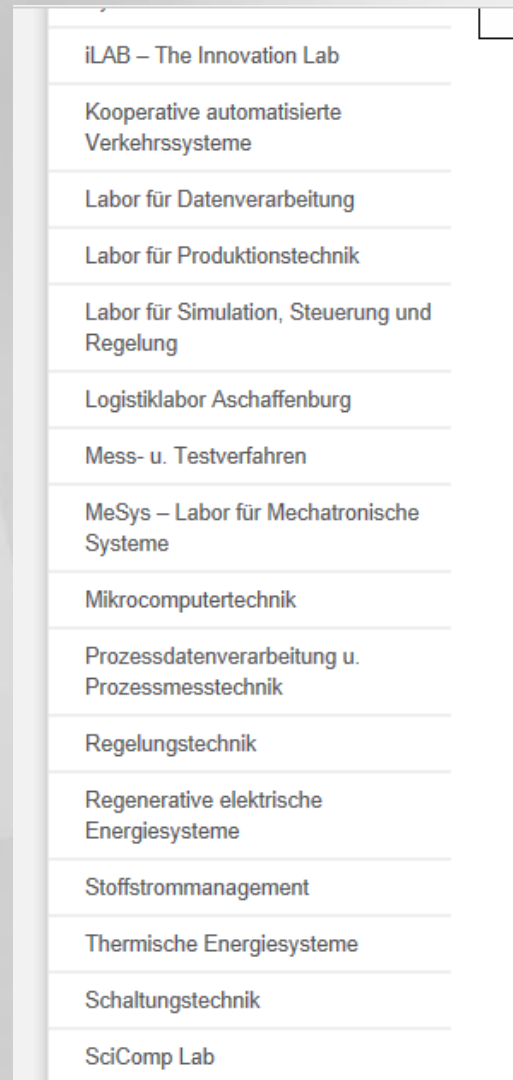
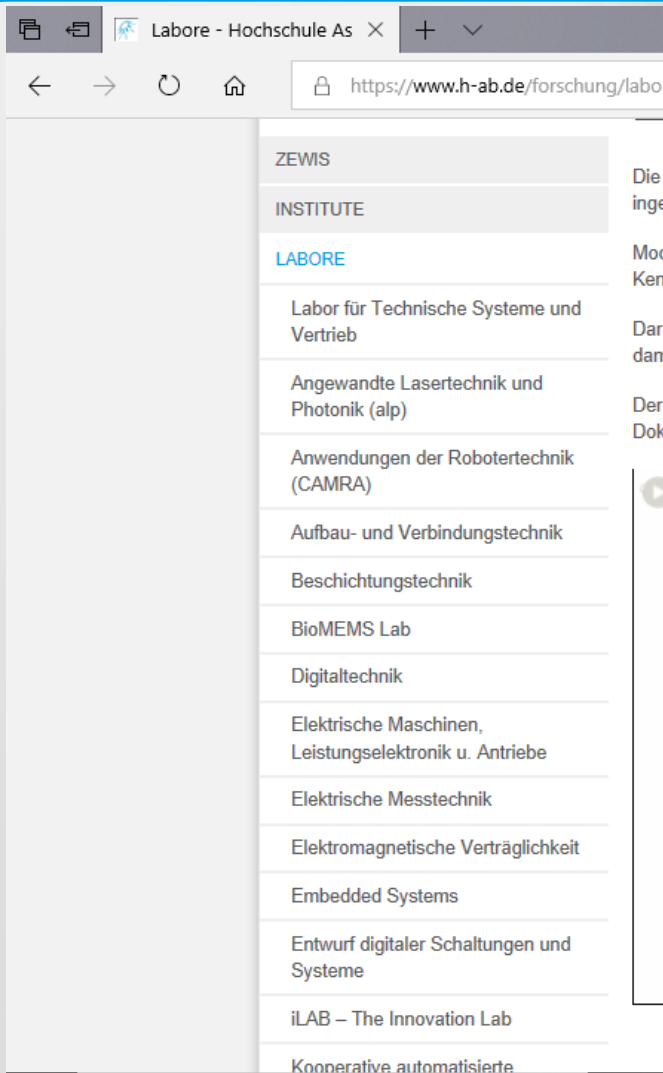


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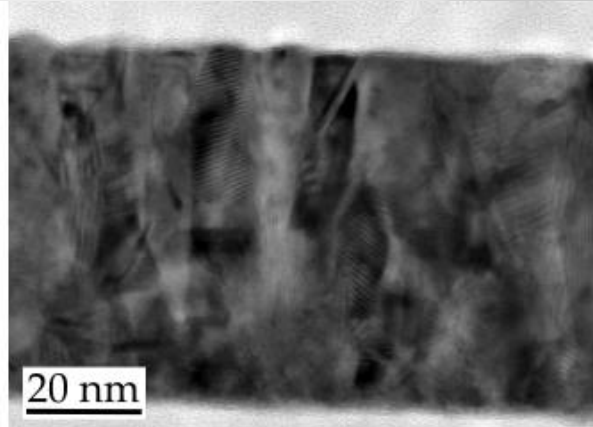




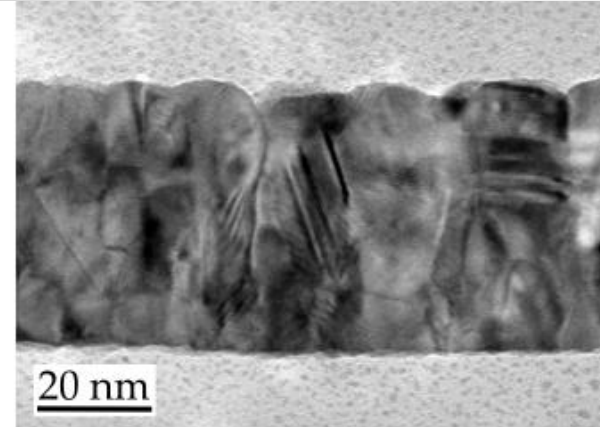
Additional Resources: 50 Labs with different equipment



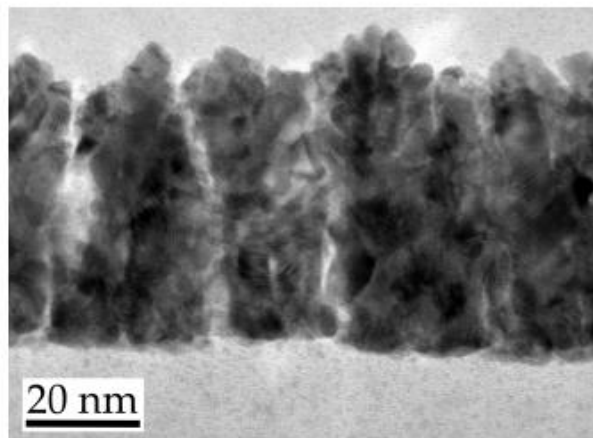
Adaption to application's requirements: Process optimization of sputter parameters



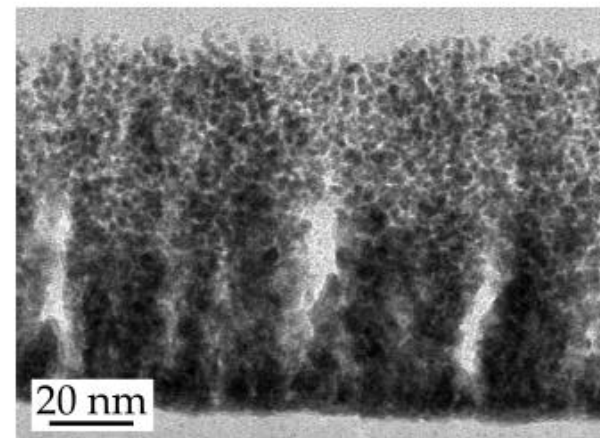
(a) $2.5 \cdot 10^{-3}$ hPa, $d_{Ir} = 64$ nm



(b) $5.0 \cdot 10^{-3}$ hPa, $d_{Ir} = 50$ nm



(c) $3.0 \cdot 10^{-2}$ hPa, $d_{Ir} = 53$ nm



(d) $8.0 \cdot 10^{-2}$ hPa, $d_{Ir} = 91$ nm