
Working group I

Nanotechnology and its effects on skill needs/occupational profiles

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Working Group I

Jan Voves, Czech Technical University in Prague

“Trends and skill needs in the field of Nanotechnology
the state of affairs in the Czech Republic in the European
context”

Grit Petzholdt- Gühne, Schott Germany

“Qualification for NanoOptics – practice example by SCHOTT AG
Evaluation of qualification requirements”

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Questions:

- **What are the trends in the sector of nanotechnology?**
- **How do these trends affect skill needs and occupational profiles?**
- **Effects on other sectors / Conclusions**

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Questions:

What are the trends in the sector of nanotechnology?

What makes Nano more attractive than other expanding sectors?

- Fast progress in science
- quantum mechanics
- Expectations regarding products (smaller costs, better products, multifunctional devices, interfaces etc.)
- Broad application fields / Combinations
- therefore high growth rates are expected

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Questions:

What are the most important sectors effected?

Main priorities:

- ICT
- Medicine / Health
- others: automotive, electronics, optics, life sciences, environment, intelligent devices...

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Questions: How do these trends affect skill needs and occupational profiles?

- main focus on university level
- 3 to 5 years later also focus on below university level

skill needs (professional competences are obligatory):

- interdisciplinarity / common language,
- team work
- intercultural skills
- communication (English)
- self management
- analytical / critical thinking

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Questions:

Where should employees learn these skills?

At best: early in primary and secondary school (change ways of teaching)

At the workplace:

- **mostly informal learning in teams**
- **shift from traditional instruction to constructivistic ways of learning in working situations / learning by problem solving**
- **parts of apprenticeship in English or abroad**
- **job rotation / soft skill training within apprenticeship**

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Effects on other sectors / Conclusions

- Research on skill needs below university level is needed
- Early dialog structures with the public are needed
- Research on general risks is needed
- Research on social impacts is needed
- Ethical questions should be discussed
- Legal questions should be discussed
- If we expect a job boom within the nano sector, what happens to other fields (net effects)?

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