
LIGHTWEIGHT PROFESSIONAL MAKE YOUR FUTURE LIGHTER

Fraunhofer Institute for Manufacturing Technology and Advanced Materials
IFAM



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Dr. Èric Hernández Edo
1st April 2019

Hannover Messe

The Fraunhofer-Gesellschaft

Fraunhofer-Gesellschaft

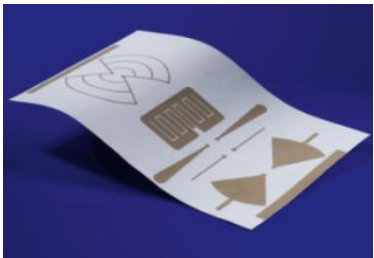
- Founded in 1949
- 72 institutes
- 26.600 employees
- R&D volume
2.5 billion Euro



Fraunhofer IFAM

- Founded in 1968, Fraunhofer institute since 1974
- **Bremen**
Locations in Dresden, Oldenburg, Stade, Wolfsburg and Braunschweig, as well as a test center for maritime technologies on Helgoland
- 684 employees
- Total budget in 2018
52.3 Mio. Euro

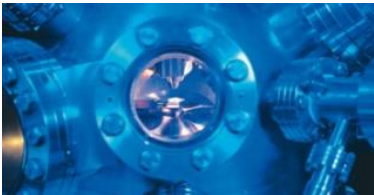
Fraunhofer IFAM – Adhesive Bonding Technology and Surfaces



Professional training courses

Focus on:

- Adhesive Bonding Technology
- Fiber Reinforced Plastics (FRP) Technology
- In-house courses
- Consulting



Fiber Reinforced Plastic - Professional Training Courses



Source: Fraunhofer IFAM

Professional training courses: Adhesive bonding technology and fiber reinforced composites

Target group	Welding technology	Adhesive bonding technology	Fiber-reinforced material technology
Decision-making level	Welding Engineer (IWE) Guideline DVS®-IIW/EFW 1170 (IAB 252r1-11)	Adhesive Bonding Engineer (EAE) Guideline DVS®/EFW 3309 and EWF 517	Composite Engineer Fraunhofer PersZert DIN17024
Technical management and supervision level	Welding Specialist (IWS) Guideline DVS®-IIW/EFW 1170 (IAB 252r1-11)	Adhesive Bonding Specialist (EAS) Guideline DVS®/EFW 3301 and EWF 516	Fiber Reinforced Plastic Specialist Fraunhofer PersZert DIN17024
Performing level	Welding Practitioner (IWP) Guideline DVS®-IIW/EFW 1170 (IAB 252r1-11)	Adhesive Bonder (EAB) Guideline DVS®/EFW 3305 und EWF 515	Fiber Reinforced Plastic Manufacturer Fiber Reinforced Plastic Remanufacturer Fraunhofer PersZert DIN17024

Source: Fraunhofer IFAM

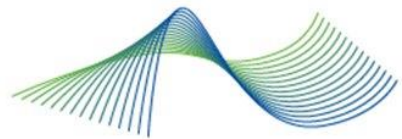
Fiber reinforced materials is only a part of the lightweight concept



Other pictures: Adobe Stock

Need of more knowledge about „lightweight concepts“

Lightweight **Materials**: how to treat them right (LightRight)



Need of more knowledge about „lightweight concepts“

Lightweight **Materials**: how to treat them right (Light**Right**)



“It intends to respond to these circumstances by developing effective training modules for professionals which provide them with relevant material knowledge for lightweight design”

Professional training courses based on the needs of the industry

How was it done?

Awareness Workshops

- 4 European countries
 - Germany, Belgium, Italy and Spain
- 130 companies
- 18 countries
- 5 profiles
- 4 groups
- 4 questions
- 1 result



Source: Fraunhofer IFAM

Awareness workshops

4 main questions

Questions

- Why do we need lightweight?
- Which technical challenges do you see “in applying” lightweight?
- Which educational obstacles do you see “in applying” lightweight?
- Which format of possible courses would you prefer?

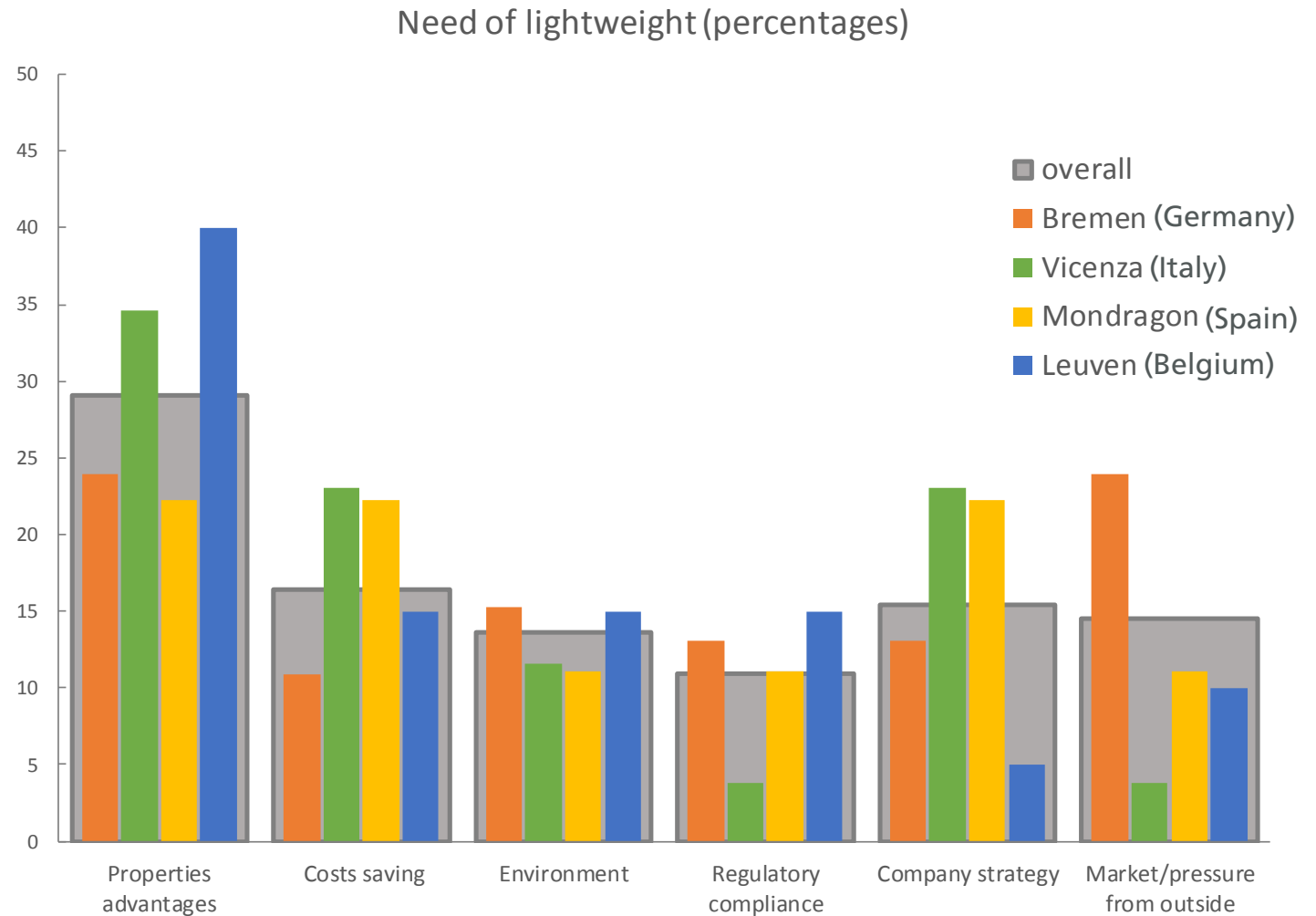


Source: Fraunhofer IFAM

Why do we need lightweight?

Answers

- Advantages of the material properties
- Cost saving
- Environment
- Regulatory compliance
- Company strategy
- Market / pressure from outside

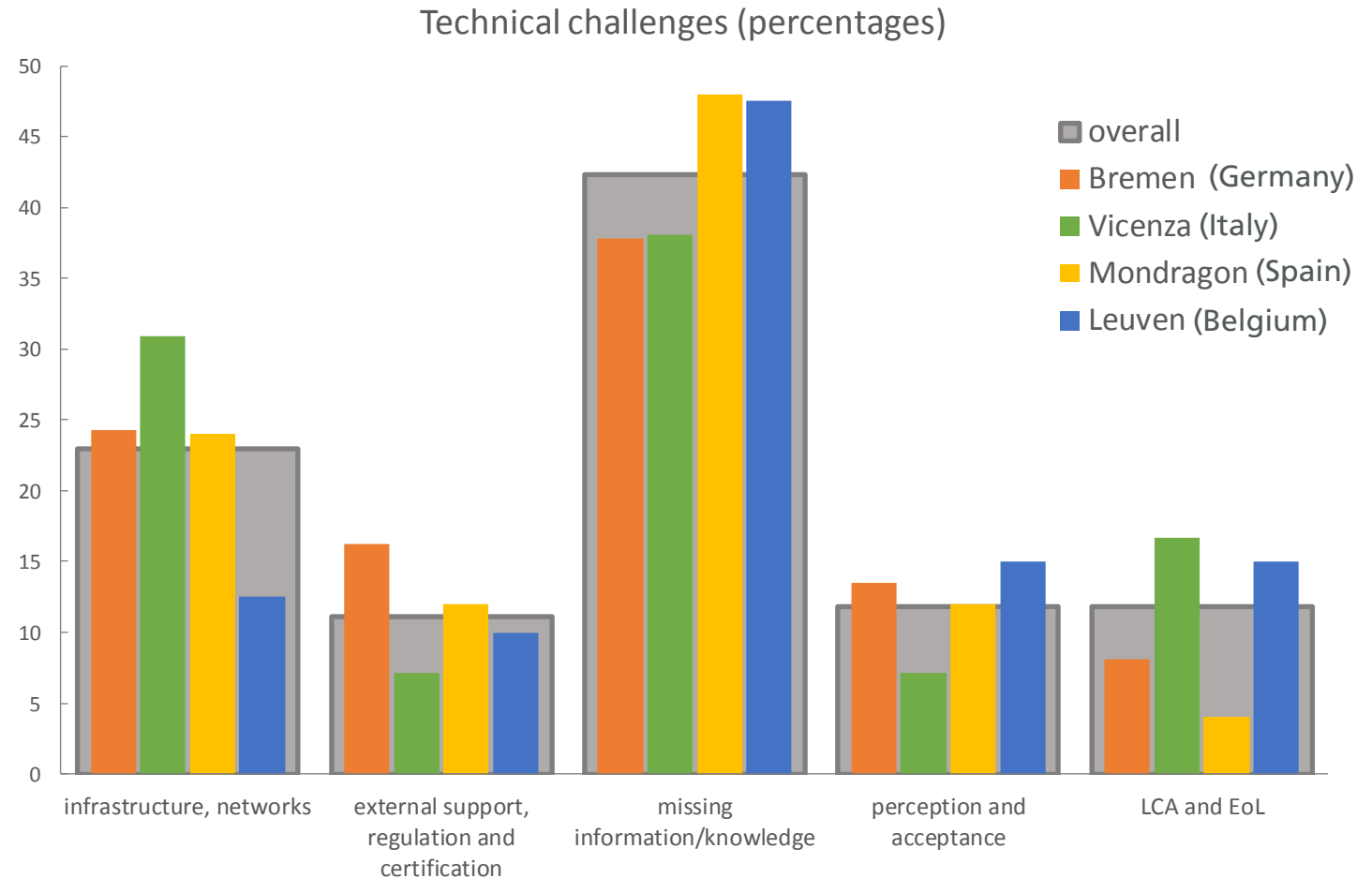


Source: LightRight project

Which technical challenges do you see “in applying” lightweight?

Answers

- Infrastructure, networks
- External support, regulation and certification
- Missing information / knowledge
- Perception and acceptance
- Life Cycle Assessment (LCA) and End of Life (EoL)

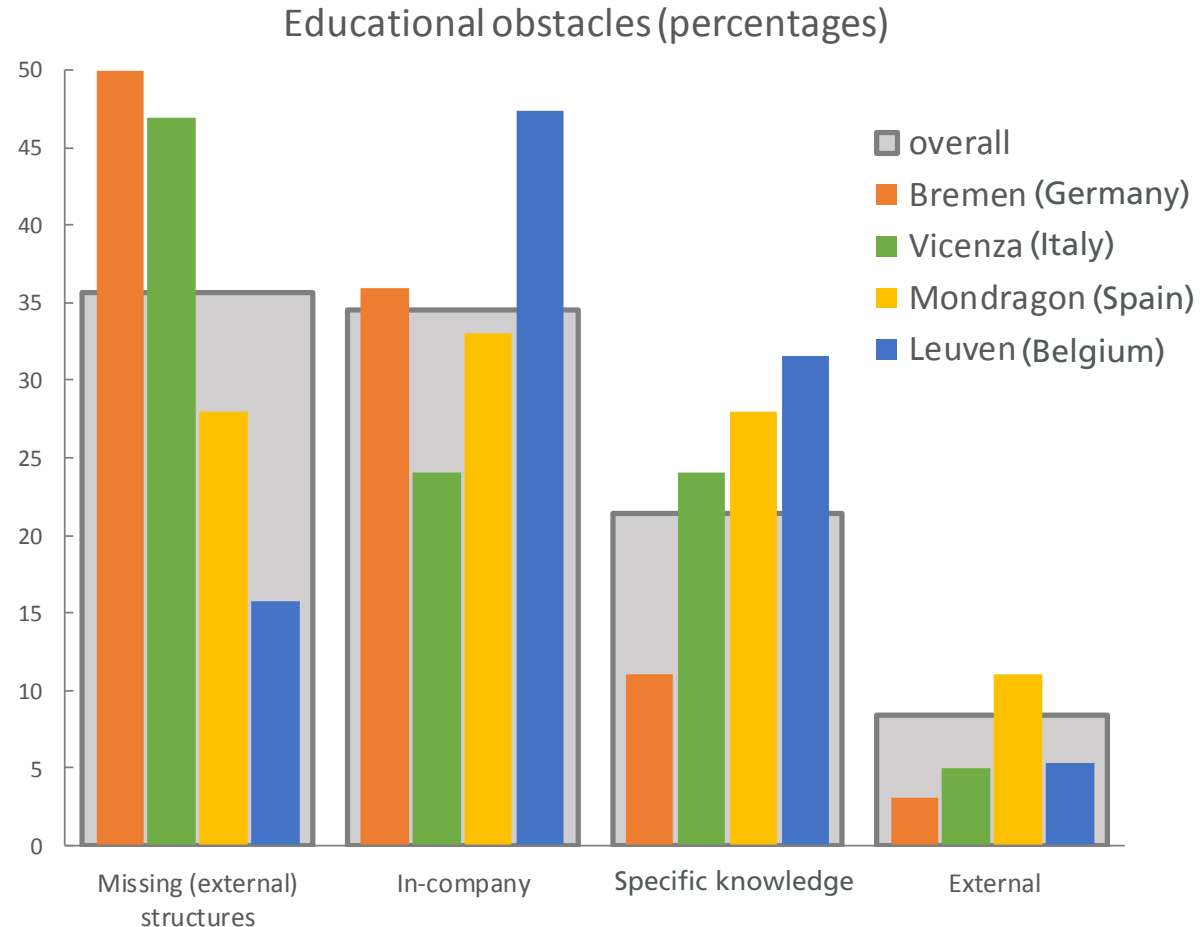


Source: LightRight project

Which educational obstacles do you see “in applying” lightweight?

Answers

- Missing (external) structures
- In-company
- Concrete knowledge
- External

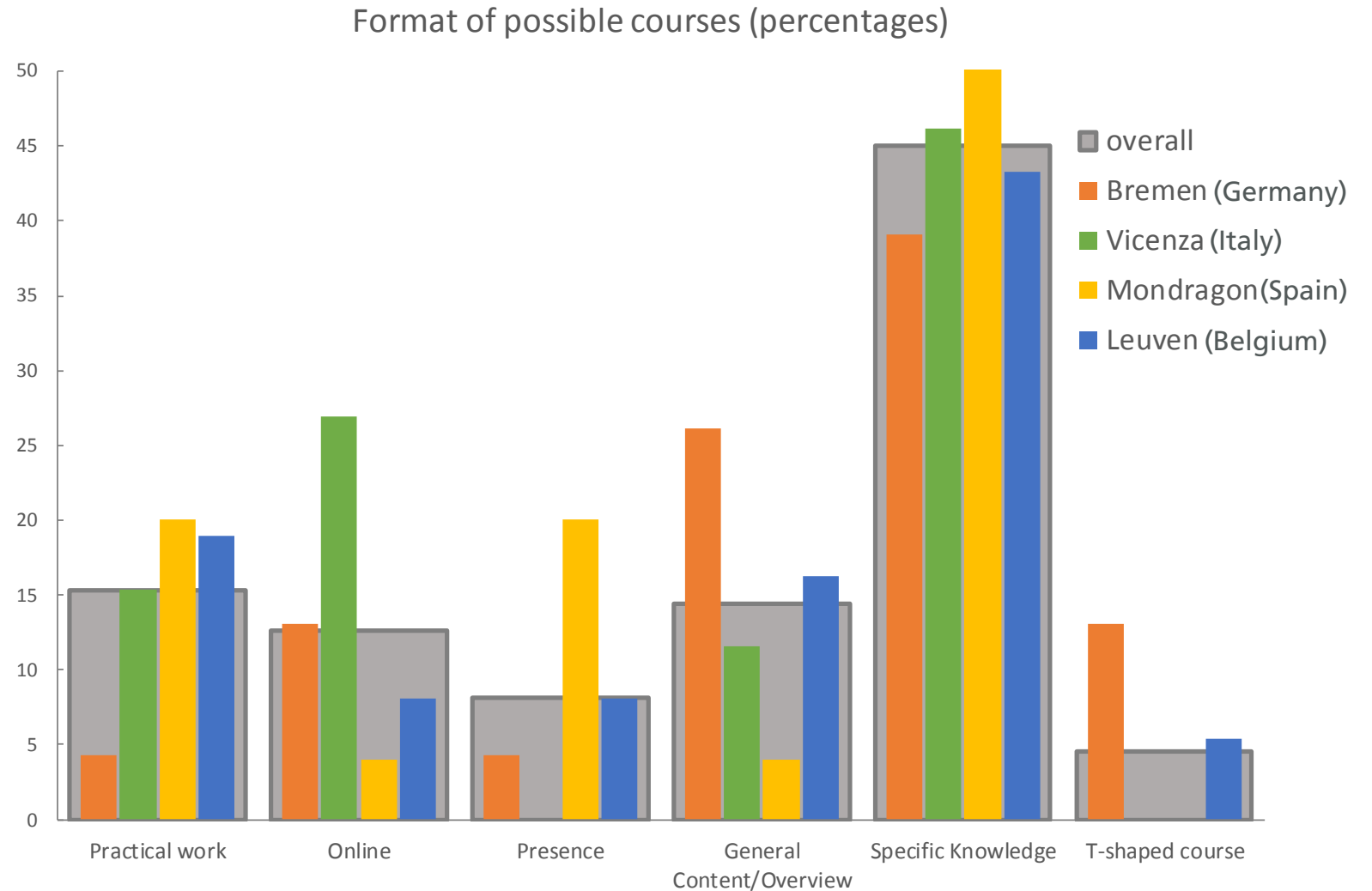


Source: LightRight project

Which format of possible courses would you prefer?

Answers

- Practical work
- Online
- Presence
- General content/overview
- Specific knowledge
- T-shaped course



Source: LightRight project

The Lightweight Professional is a T-shaped professional training

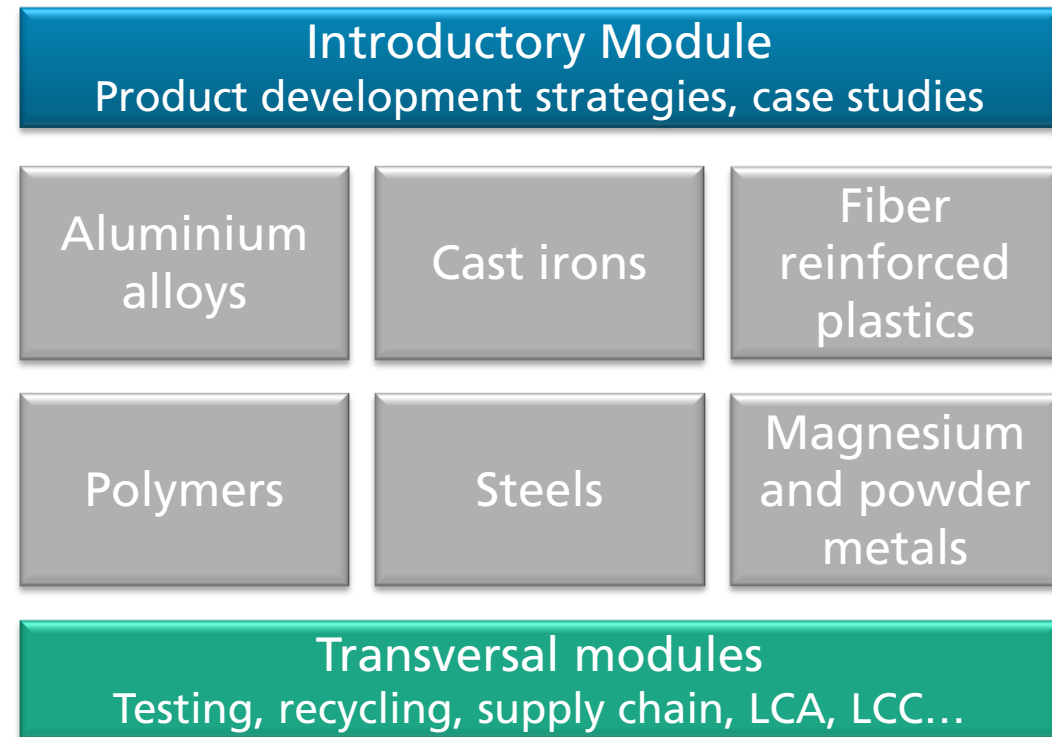
Lightweight Professional Structure			Level	Target group	Objective	Certification
Introductory Module Product development strategies, case studies			Basic level	Managers / technical staff	Overview	First level
Aluminium alloys	Cast irons	Fiber reinforced plastics	Advanced level	Technical staff	Specific material knowledge	Second level
Polymers	Steels	Magnesium and powder metals				
Transversal modules Testing, recycling, supply chain, LCA, LCC...			Expert level	Technical staff	Transversal knowledge	Third level

The Lightweight Professional Course is modular

Lightweight Professional

- In English
- Modular
 - E-Learning + 2,5 classroom days
- Certified according to DIN 17024
 - Basic, advanced and expert levels
 - Examination
 - Requirements
- Modules are bookable individually

Lightweight Professional Structure



The first Lightweight Introductory Modules will take place in September 2019

Target group

- Managers and technical staff

Duration

- 2,5 days e-learning
- 2,5 days classroom course

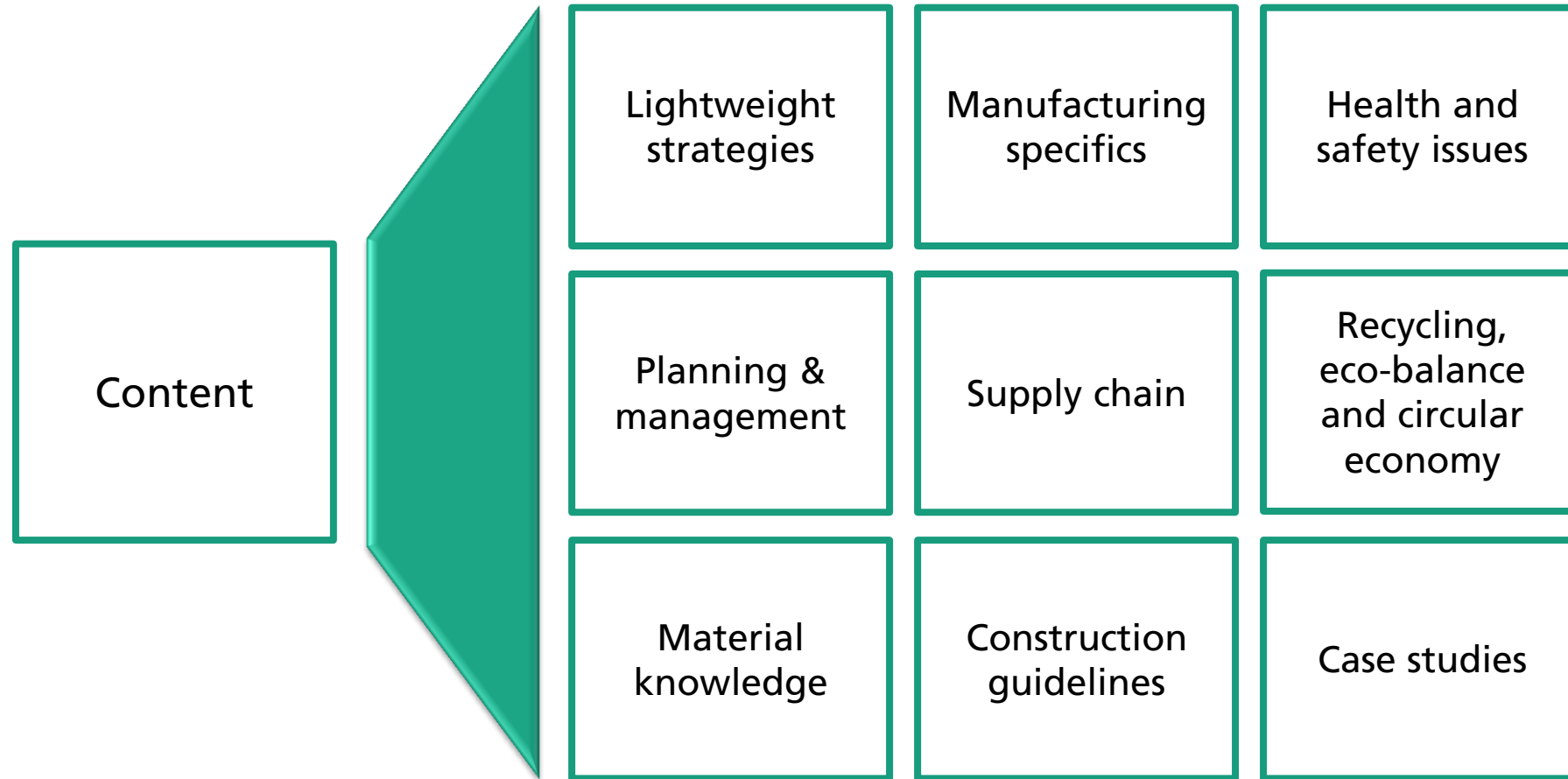
Cost

- 1200 € + examination fee for certification

Location / date / language

Munich, Germany	September 3rd – 5th, 2019 in German
Leuven, Belgium	September 17th – 19th, 2019 in English
Bilbao, Spain	October 8th – 10th, 2019 in Spanish
Vicenza, Italy	October / November 2019 In Italian

Content required by the industry

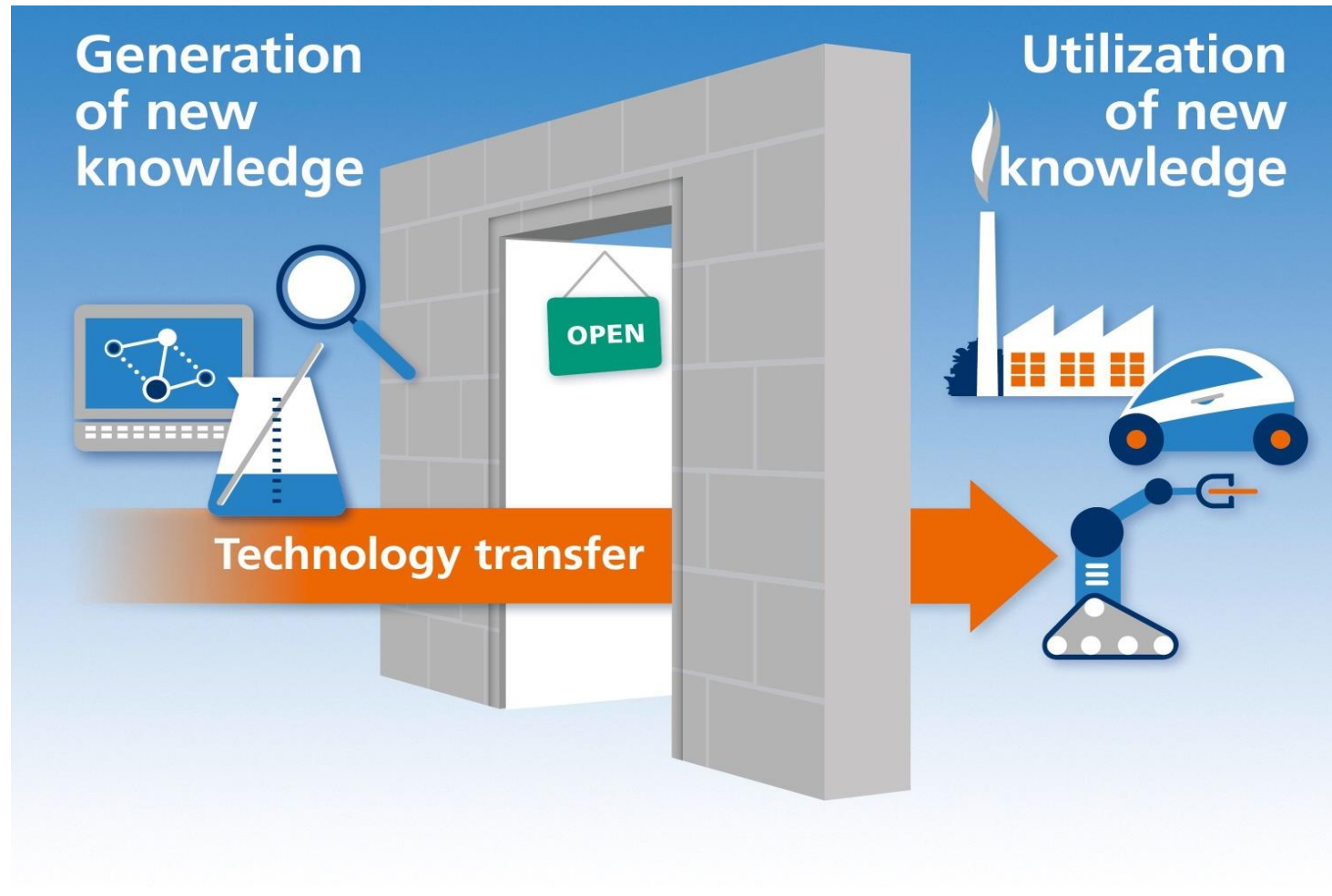


Generation of knowledge open doors and reduces costs



Source: Fraunhofer IFAM

Generation of knowledge open doors and reduces costs



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Thank you!

www.lightweightprofessional.com

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Lightweight Introductory Module

Location / dates / language

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Bilbao, Spain	October 8 th – 10 th , 2019 in Spanish
Vicenza, Italy	8 th Oct., 22 nd Oct. and 5 th Nov. 2019 In Italian