RENTRÉE ACADÉMIQUE DE LA FILIÈRE BIOMÉDICALE 2024

Prof. Bernardo Innocenti, PhD

President Biomedical Track

BEAMS Department (Bio Electro and Mechanical Systems)
École Polytechnique de Bruxelles
ULB - Université Libre de Bruxelles
Av. F. Roosevelt, 50 CP165/56
1050 Bruxelles

Agenda

18h30: Introduction - Prof. Bernardo Innocenti;

18h40: Examples of the development of innovative medical devices at ULB in 2024

- Dr Ir Adrien Foucart (LISA);
- Ir Victor-Paul Grandjean (BEAMS);
- Ir Clément Rigaud (TIPS);

18h55: : Challenges to translation (what are the main challenges to transform a prototype in a medical device ready for clinical evaluations) – Prof. Anne Vanhoestenberghe – Kings College London;

19h15: Presentation of the projects of the Fondation Michel Cremer - Prof. Jacques Devière et Ir Cécile Sztalberg;

19h30: Drink!

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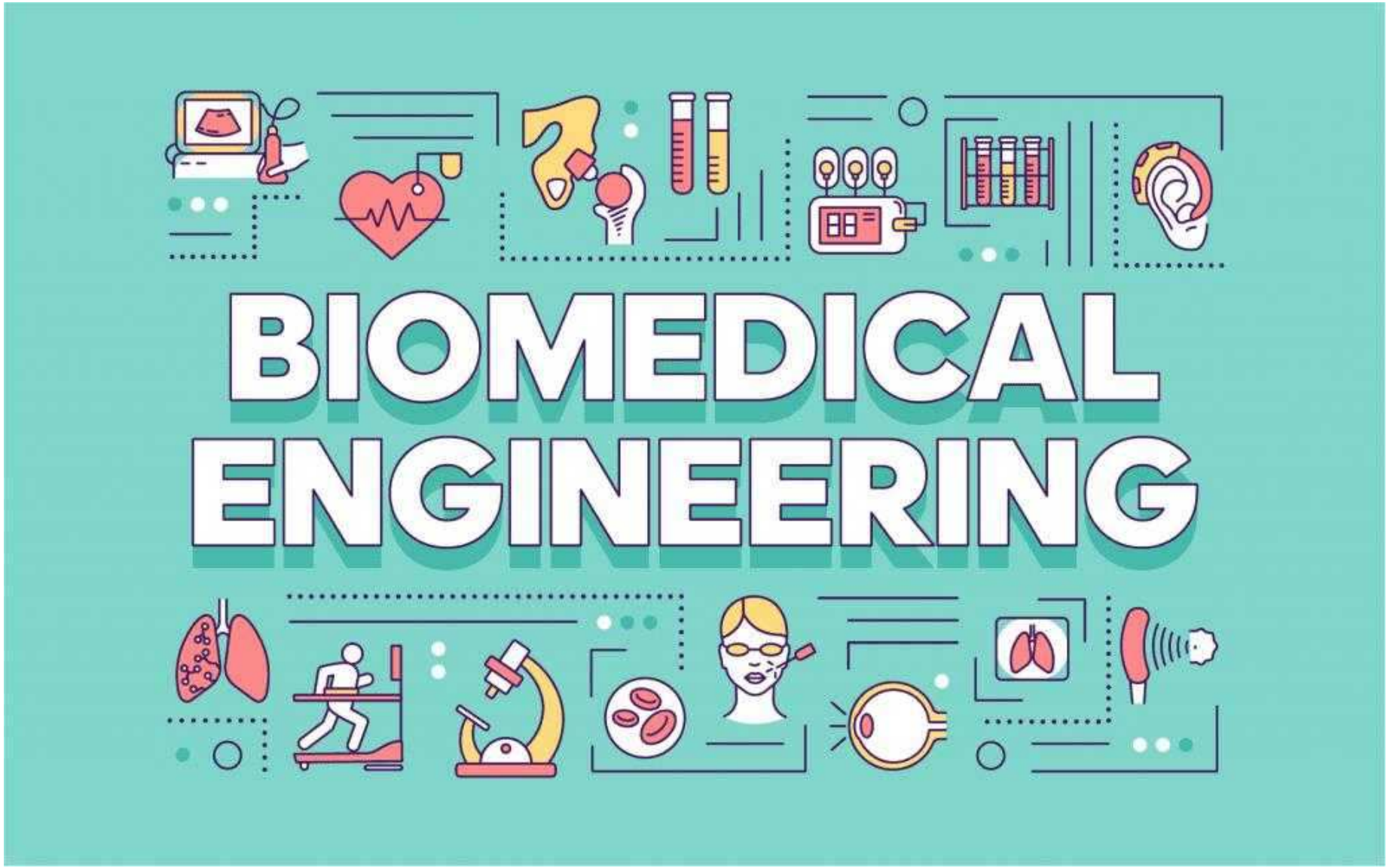
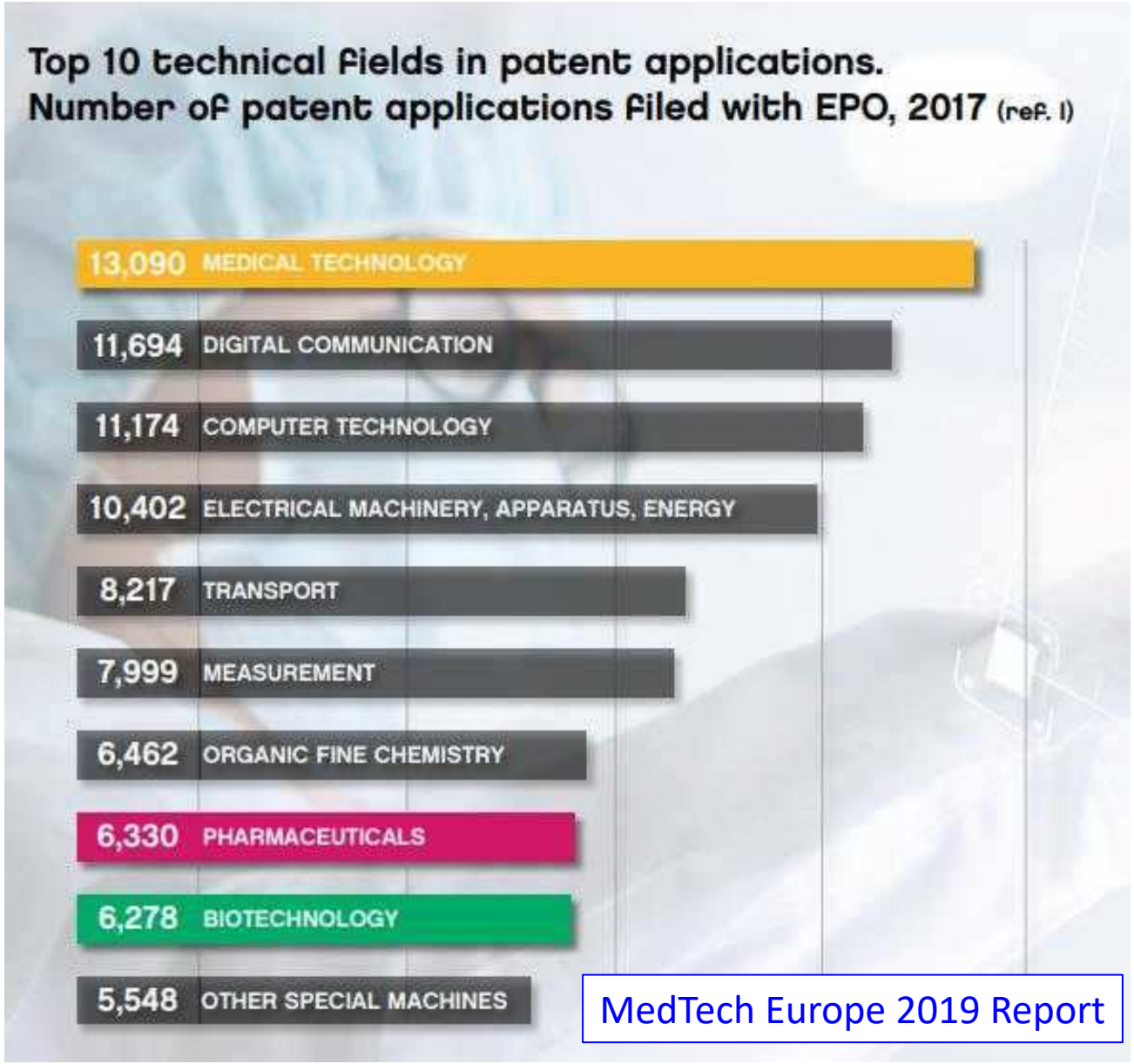
Rentrée académique de la filière biomédicale

Biomedical Engineering:

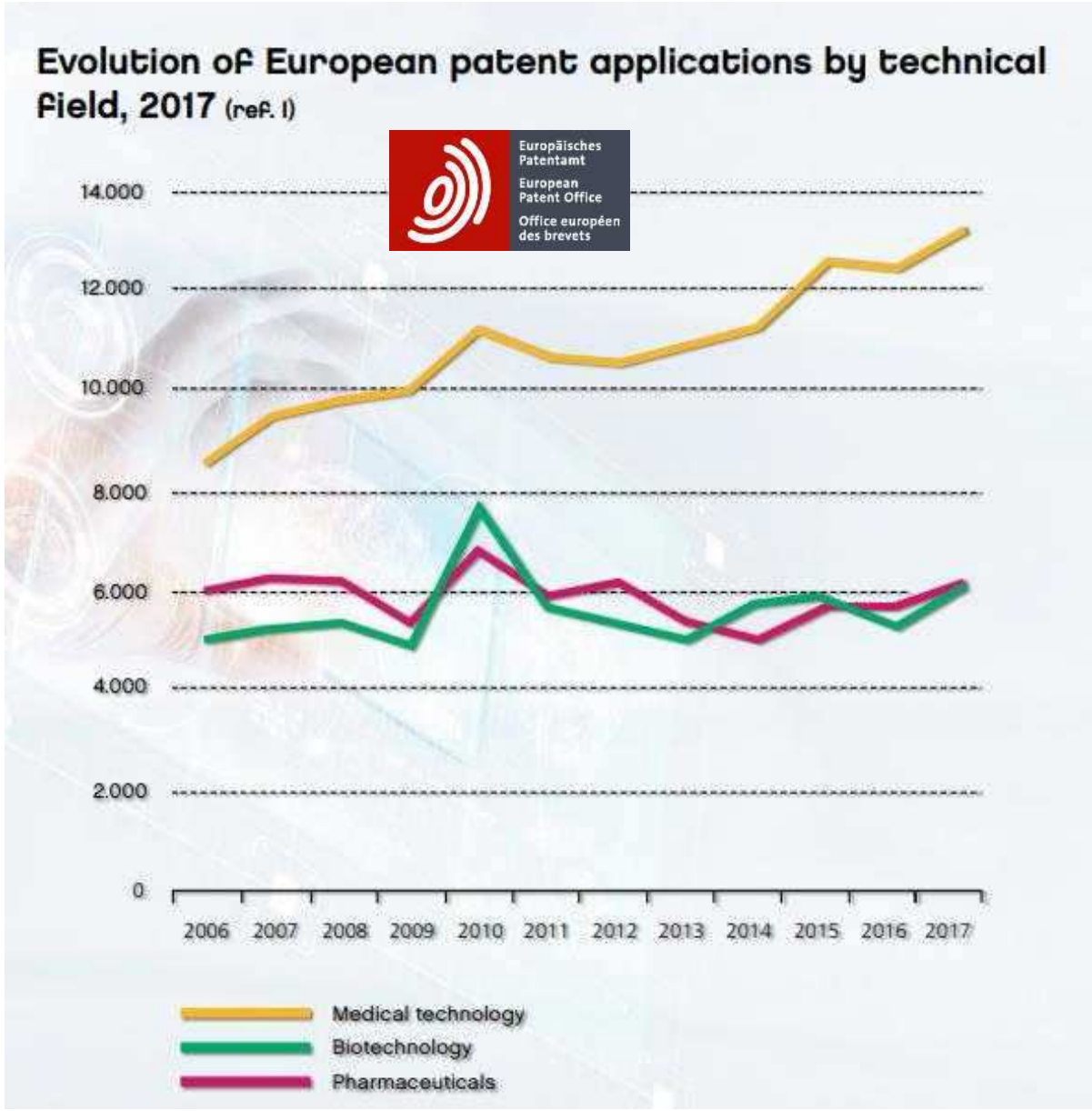
- Why?
- What?
- How?



Why Biomedical Engineering?



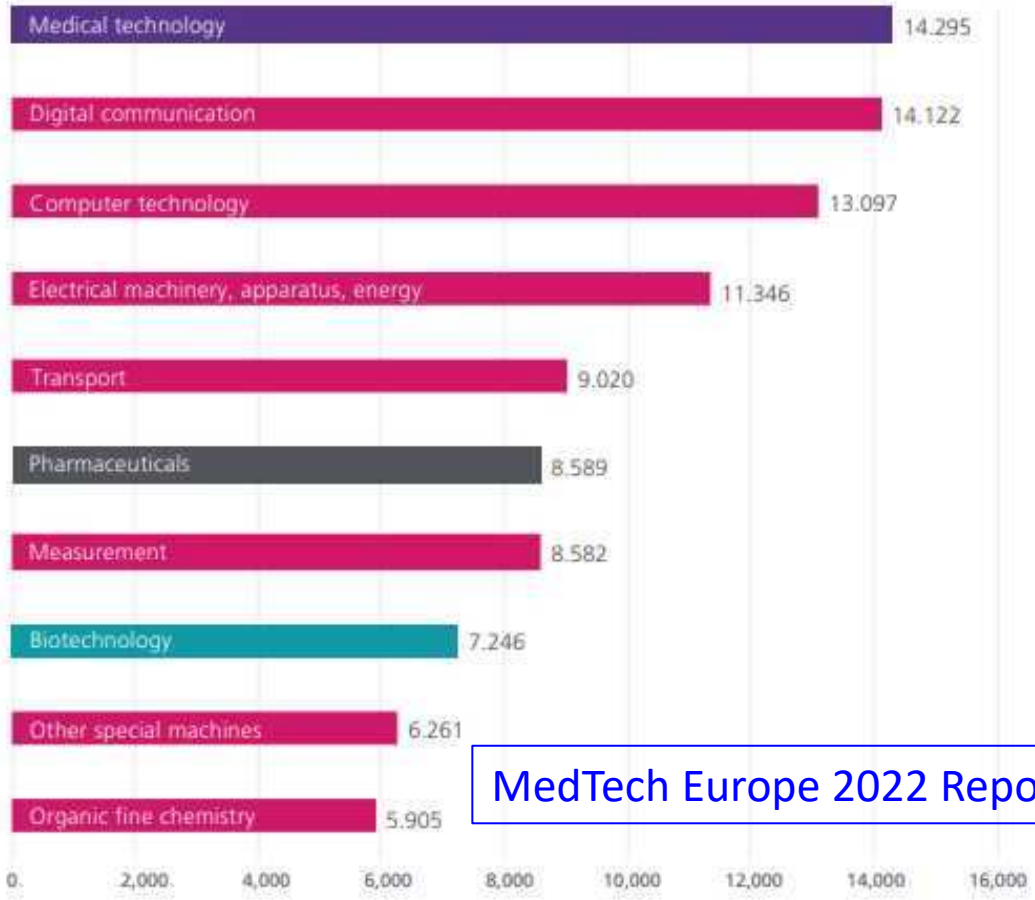
MedTech Europe 2019 Report



Why Biomedical Engineering?

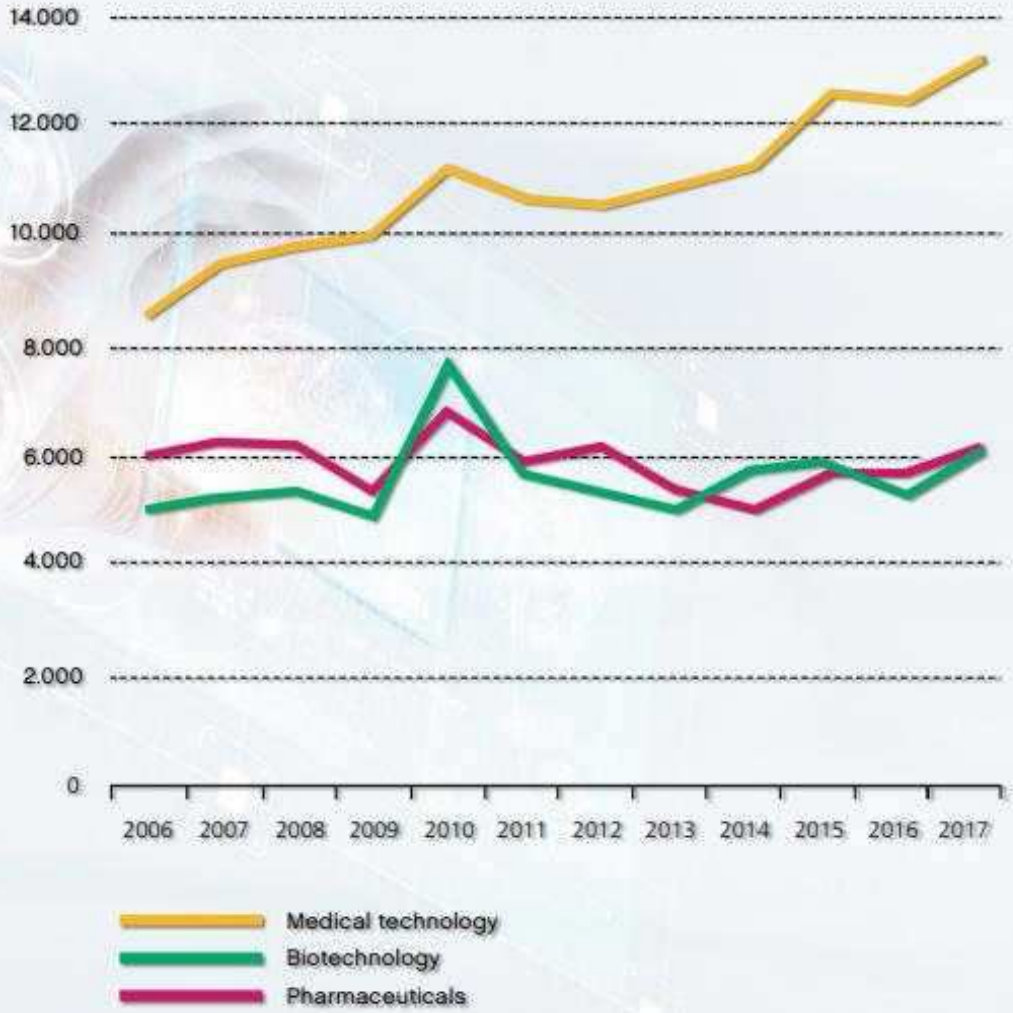
Graph 1 – Top 10 technical fields in patent applications

Number of patent applications filed with EPO, 2020 (ref. 2)



MedTech Europe 2022 Report

Evolution of European patent applications by technical field, 2017 (ref. 1)



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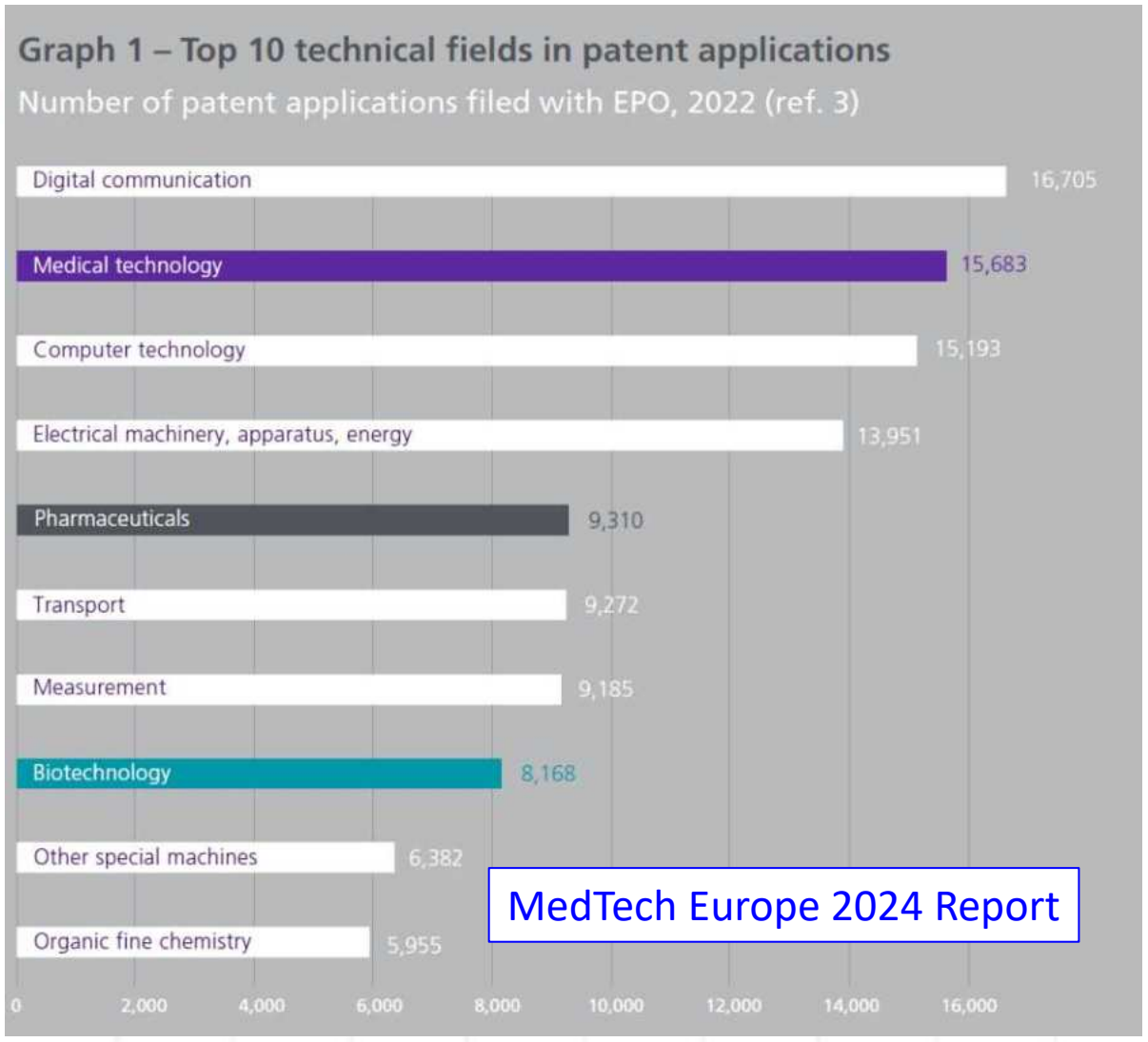
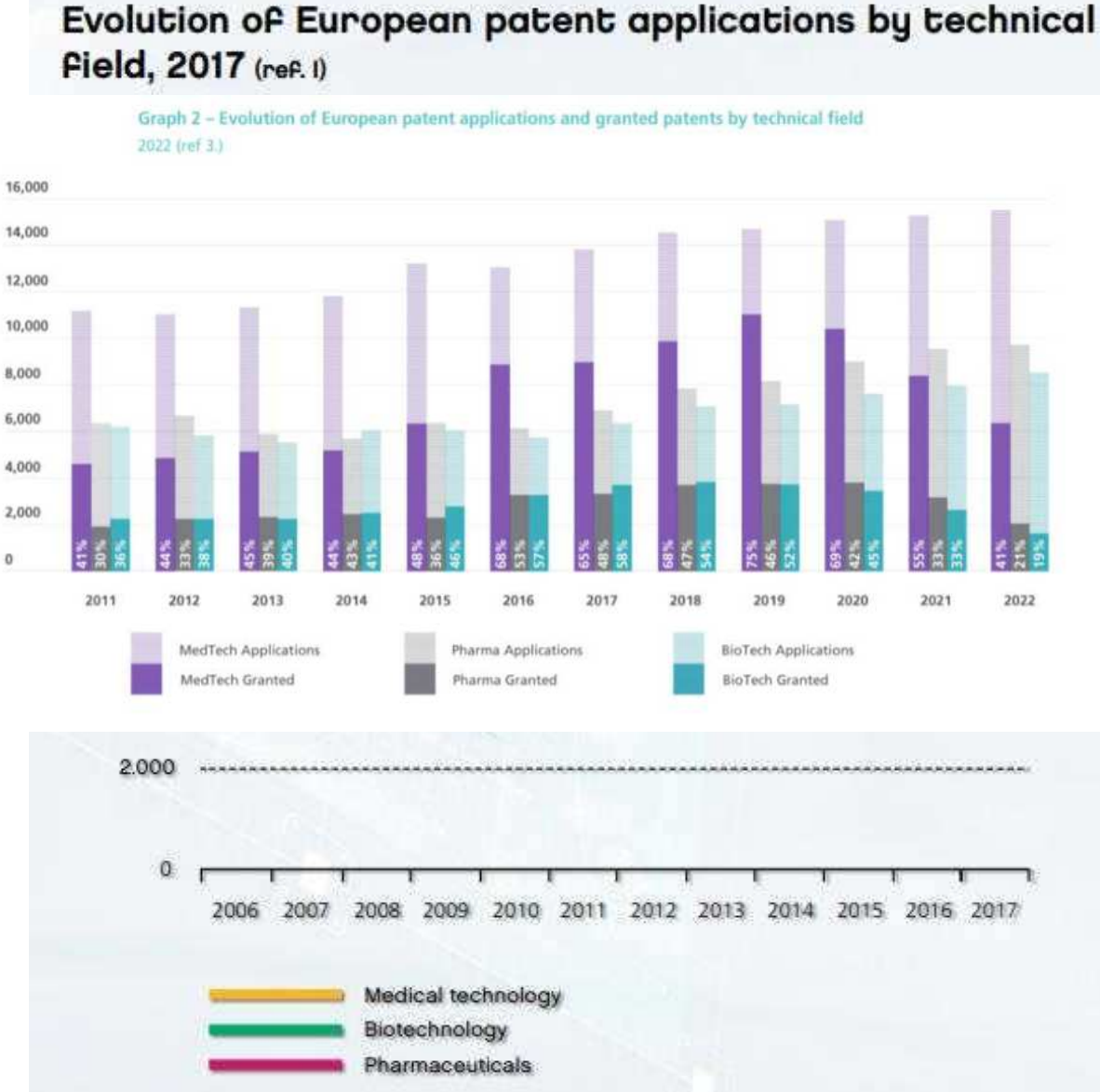


MedTech Europe 2024 Report



Why Medical Technologies?

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There are more than

2.000.000

medical technologies, categorized into more than 7,000 generic devices groups[1], available in hospitals, community care settings and at home.

Medical technologies can be everyday objects such as sticking plasters, syringes, surgical masks, and latex gloves, as well as spectacles, wheelchairs, COVID-19 tests and medical apps. Medical technologies also include total body scanners, gene mutation tests, implantable devices such as heart valves and pacemakers, and replacement joints for knees and hips.

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Medical technologies provide value in different ways. They allow people to ***live longer and better lives***. At the same time, medical technologies improve the quality of care, and the efficiency and sustainability of healthcare systems.

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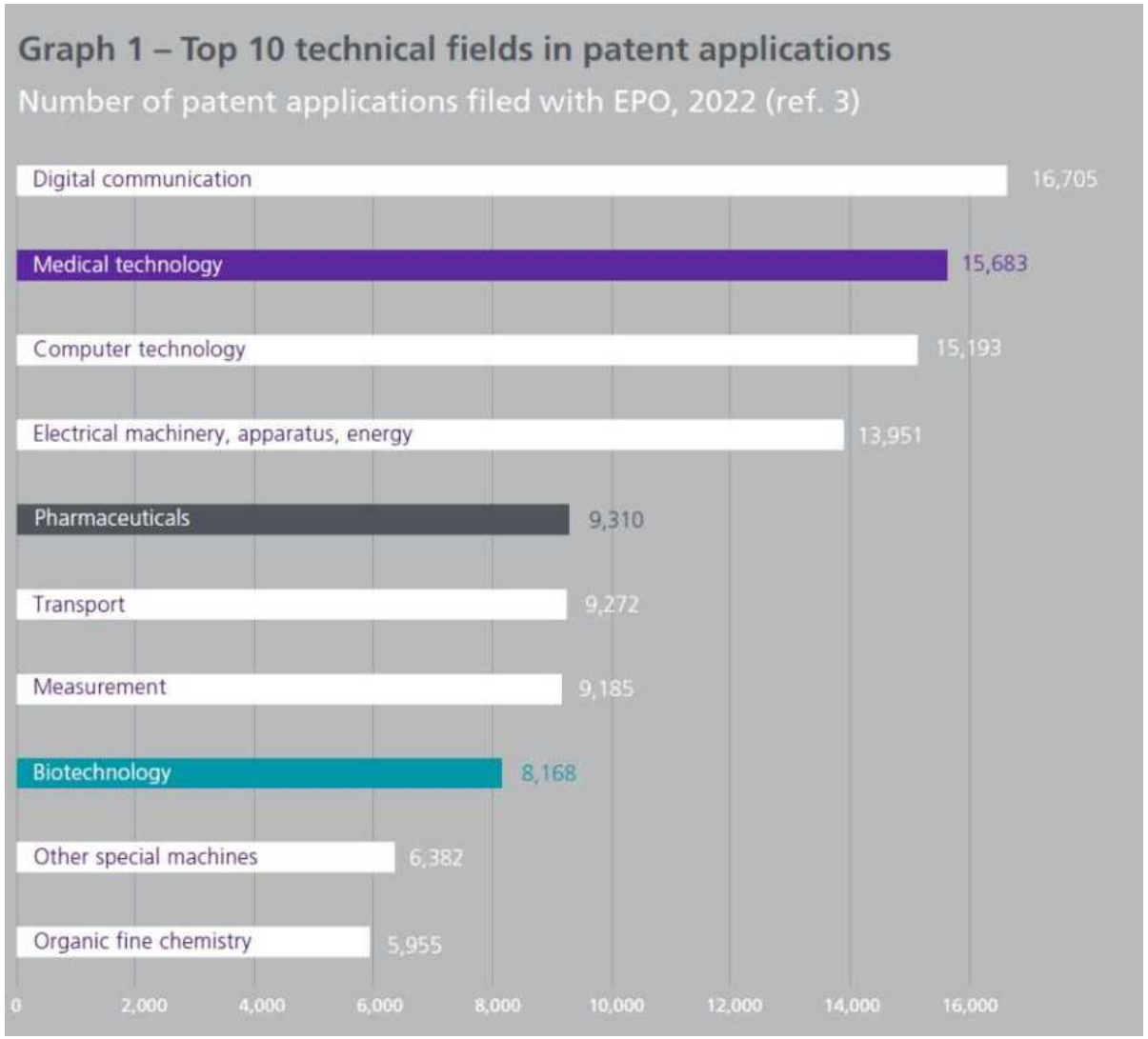
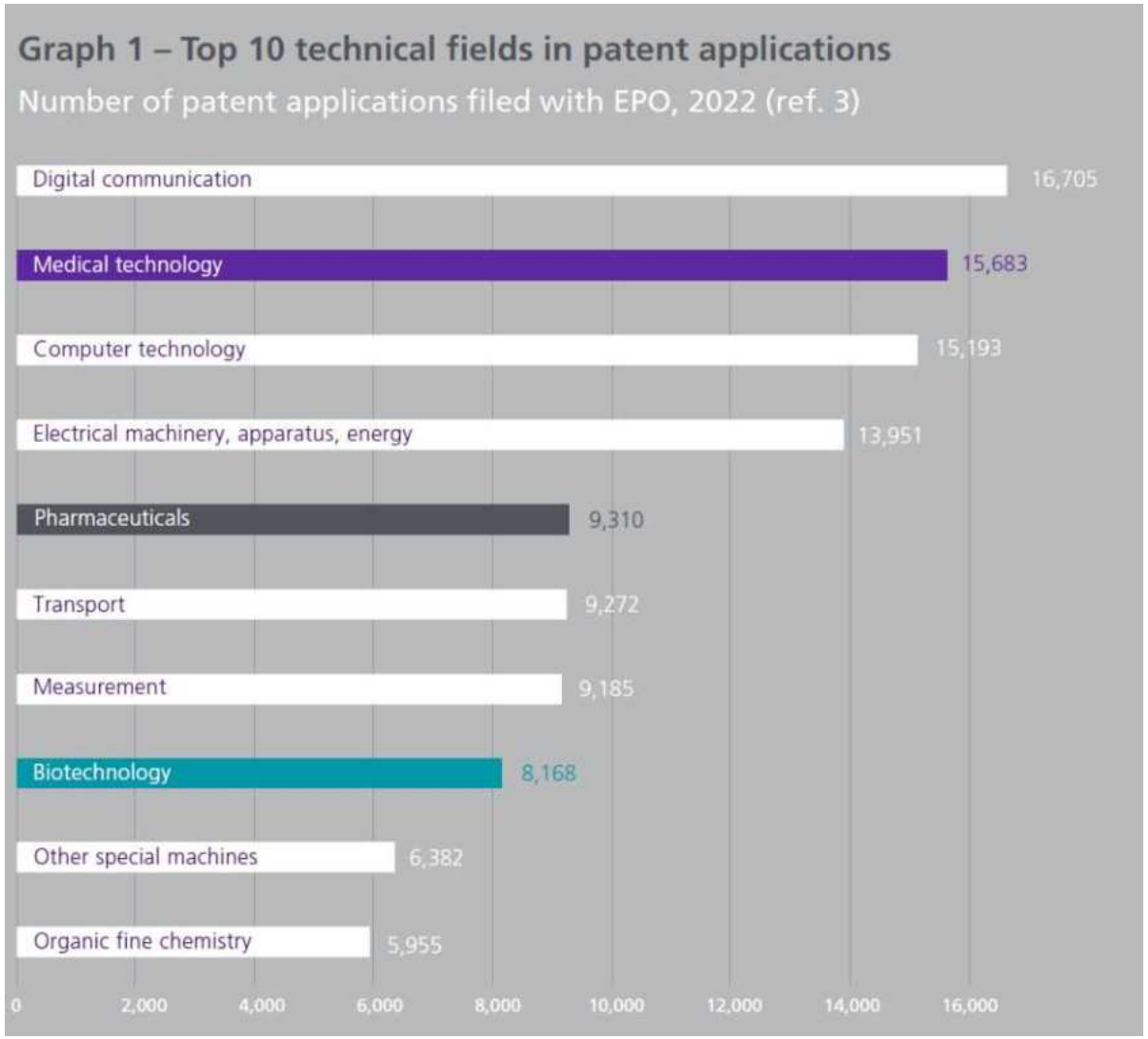


What is medical technology

Medical technologies are products, services or solutions used to ***save and improve people's lives***. In their many forms, they are with you from prevention to diagnosis and cure. There are three main categories of medical technologies:

MedTech Europe 2023 Report

Why Medical Technologies?



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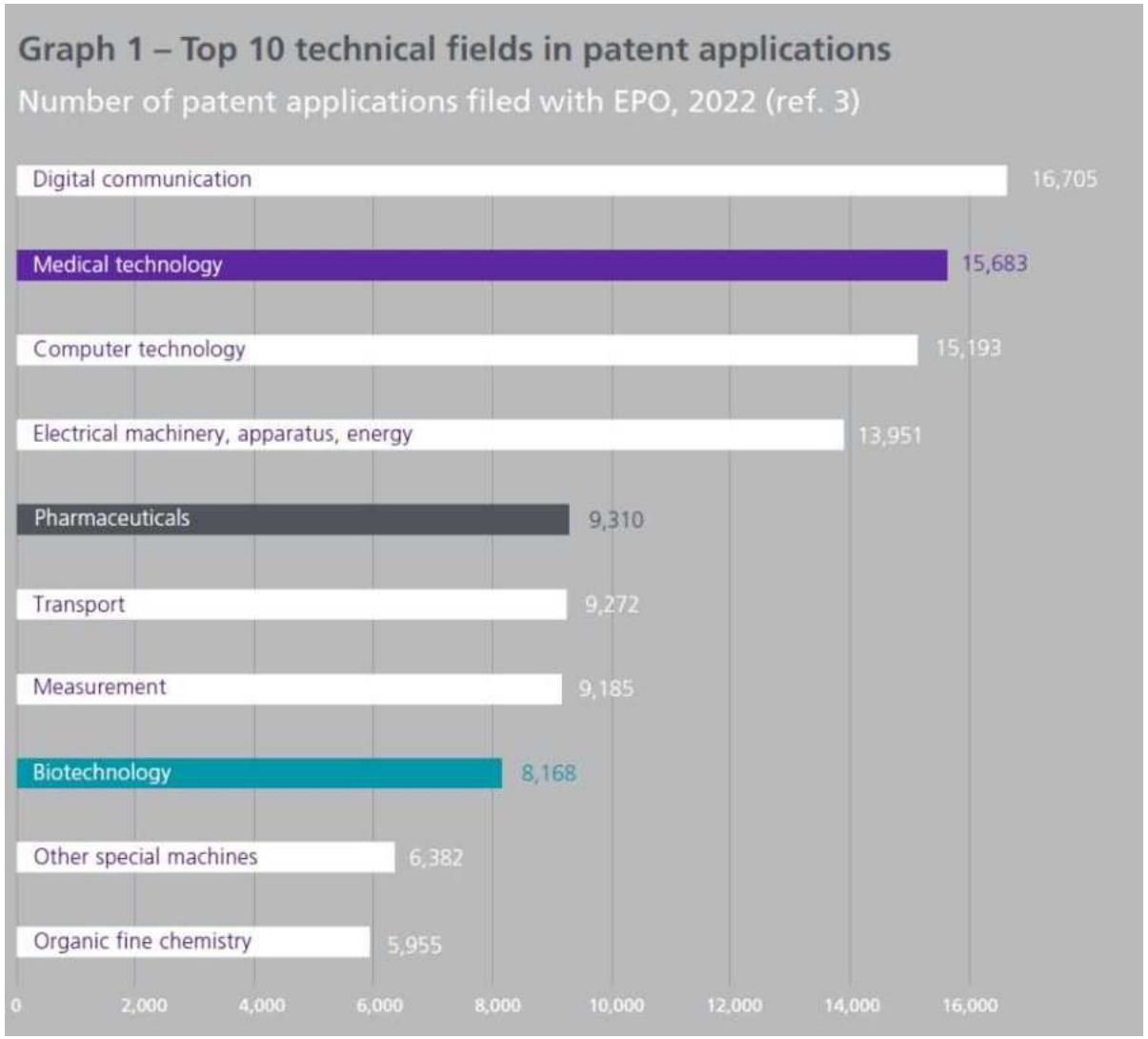

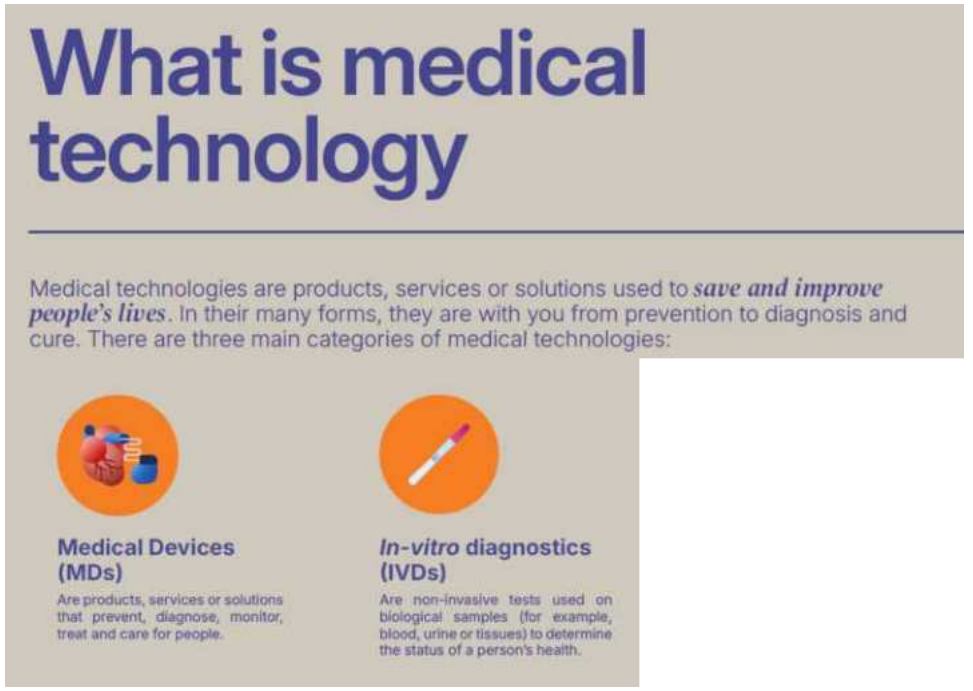

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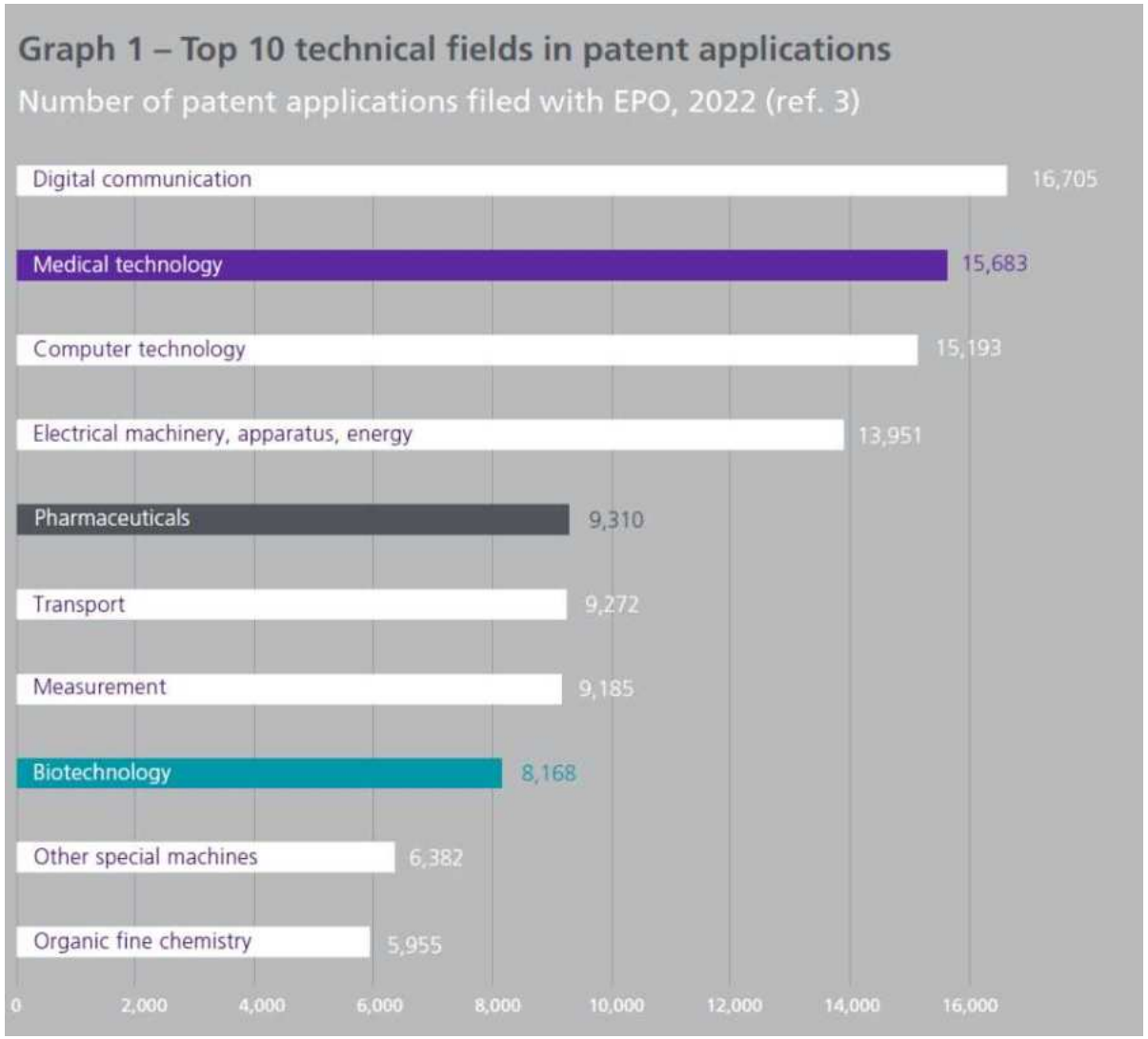

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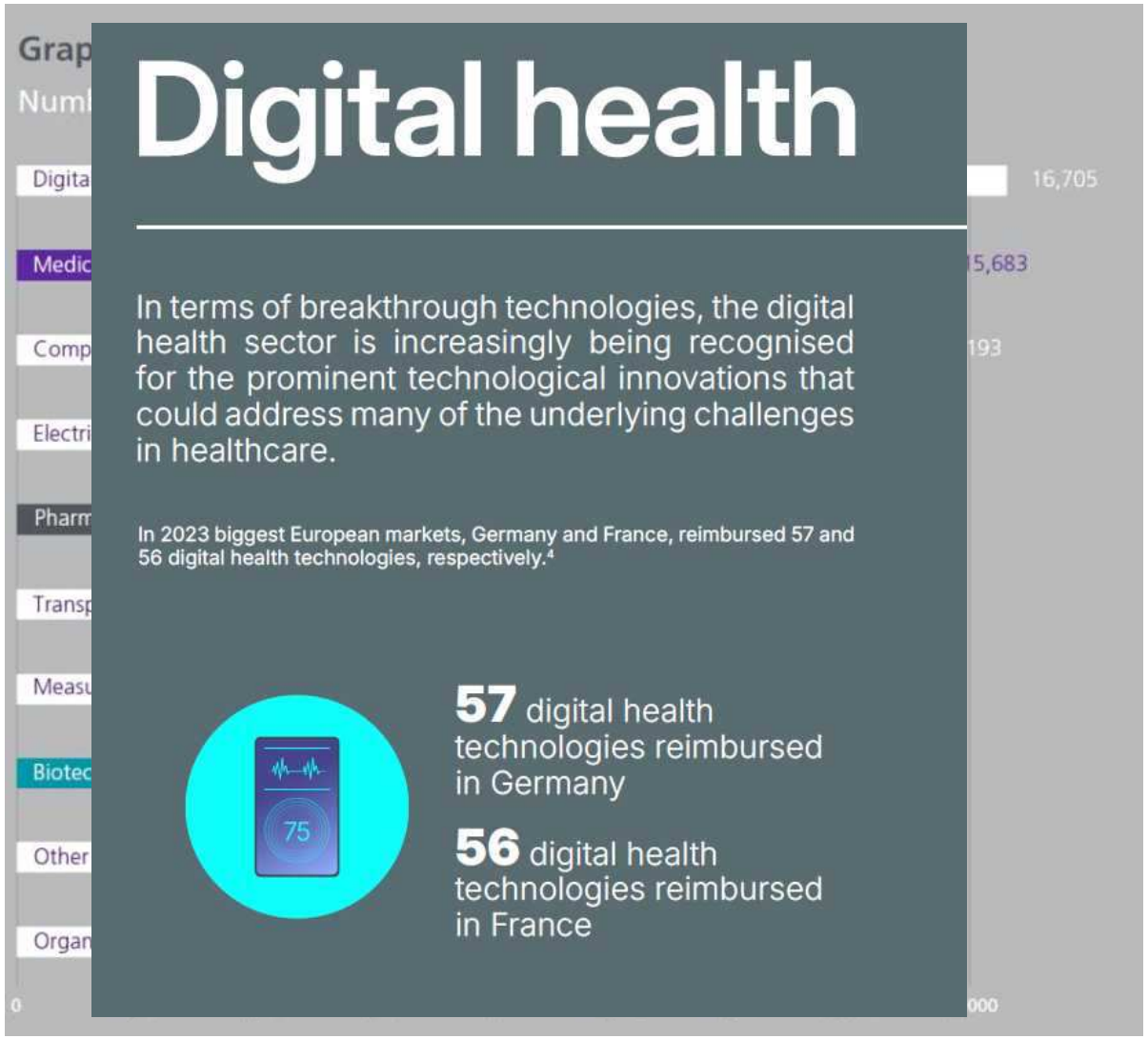

MedTech Europe 2023 Report

What does it means this?

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Employment

The jobs created by the medical technology industry account for around 0.36% of total employment in Europe[7]. These jobs are also highly productive, as the value added per employee is estimated to reach around €177,000 per employee. These indicators show that the medical technology industry has an important economic and societal impact in Europe.

880,000+
employees[4]

What does it means this?

Employment

ECOLE
POLYTECHNIQUE
DE BRUXELLES

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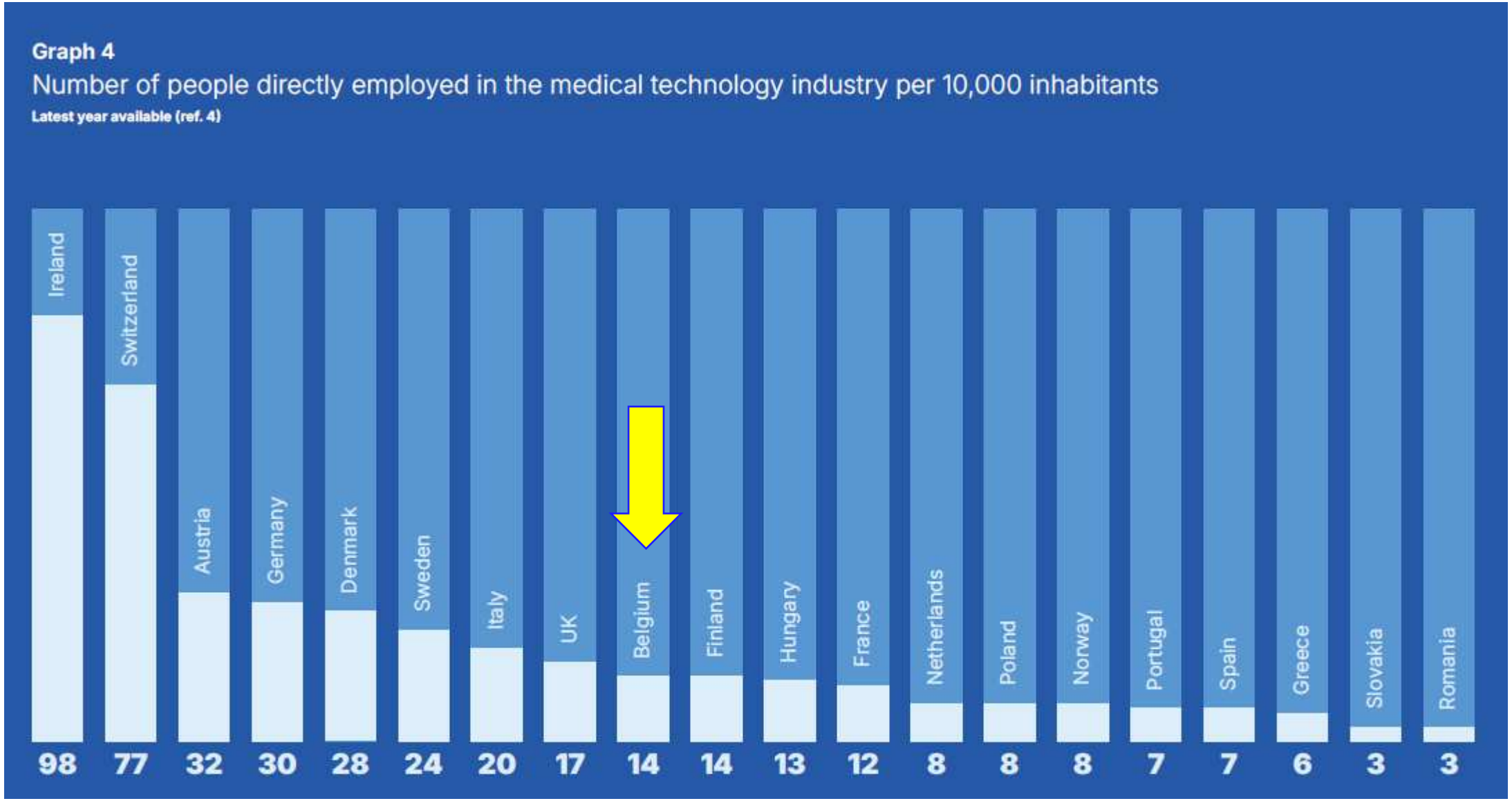


Last but not least!!!!

Companies

There are more than 37,000 medical technology companies in Europe. The highest number of them are based in Germany, followed by Italy, the UK, Poland, Sweden and Switzerland. Small and medium-sized companies (SMEs) make up around 90% of the medical technology industry, the majority of which employs less than 50 people (small and micro-sized companies)[5].

37,000
medical technology companies in Europe
90% SMEs

Medtech market in Europe

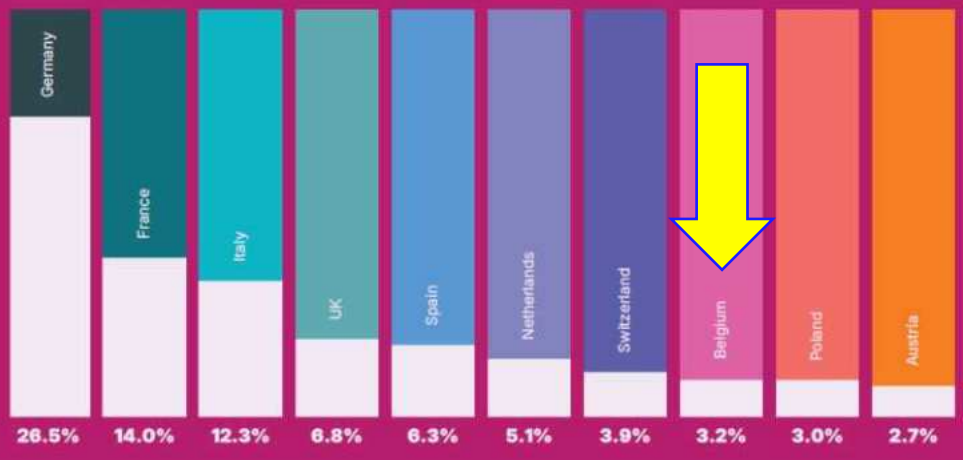
€160 billion market

26.1% of world market

2nd largest market after US

Medtech market in Europe

Graph 6
European medical device market by country
2023 (ref. 9)

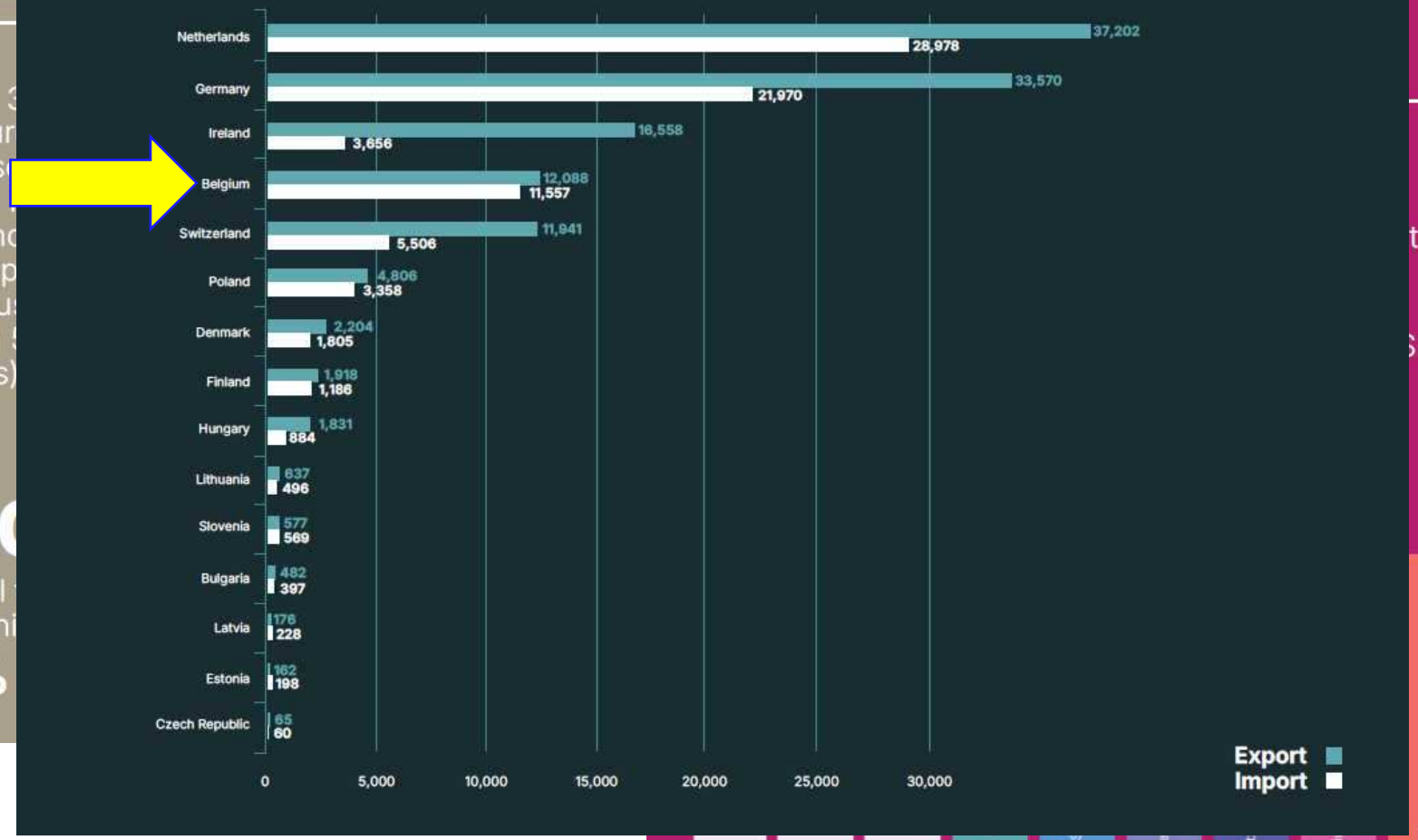


Last but not least!!!!

Graph 14

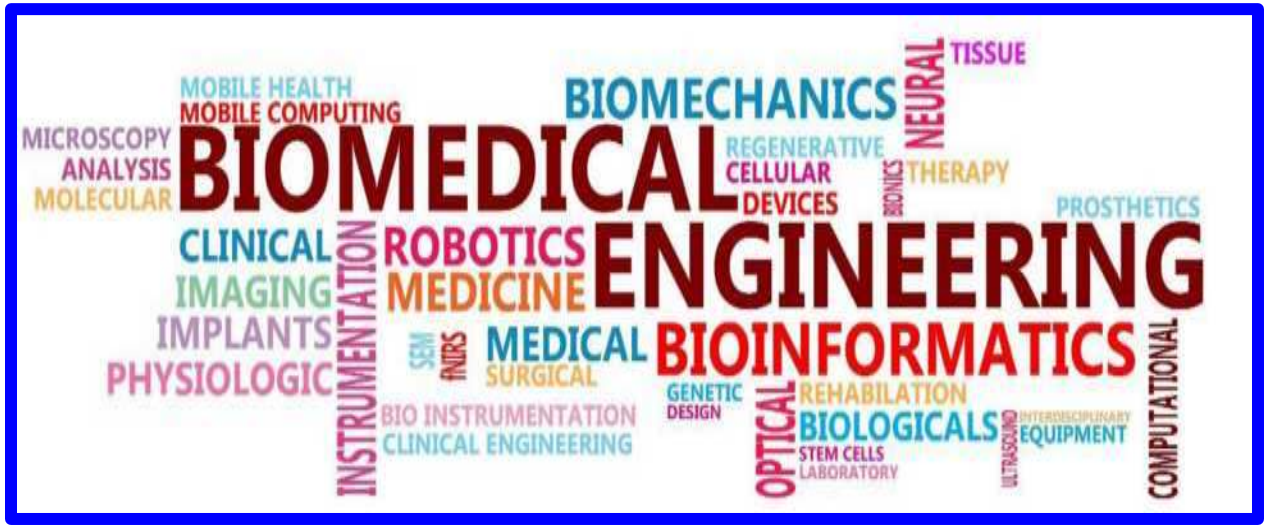
Export and import of medical devices by country

Including intra-community trade, million euros, 2023 (ref. 10)



Take Home Message

Interdisciplinary fields of biomedical engineering.



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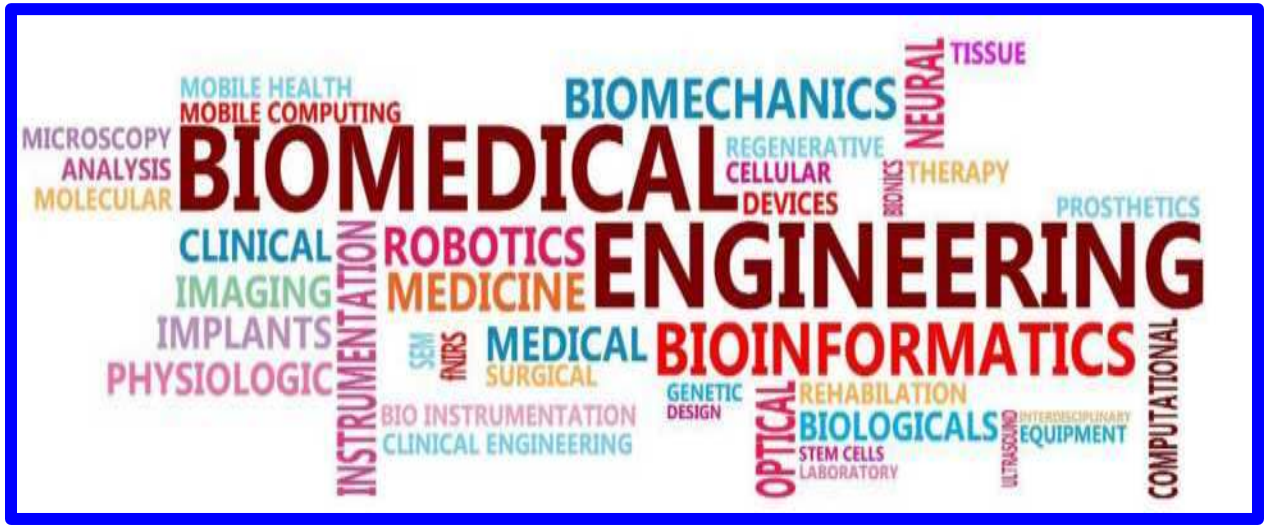
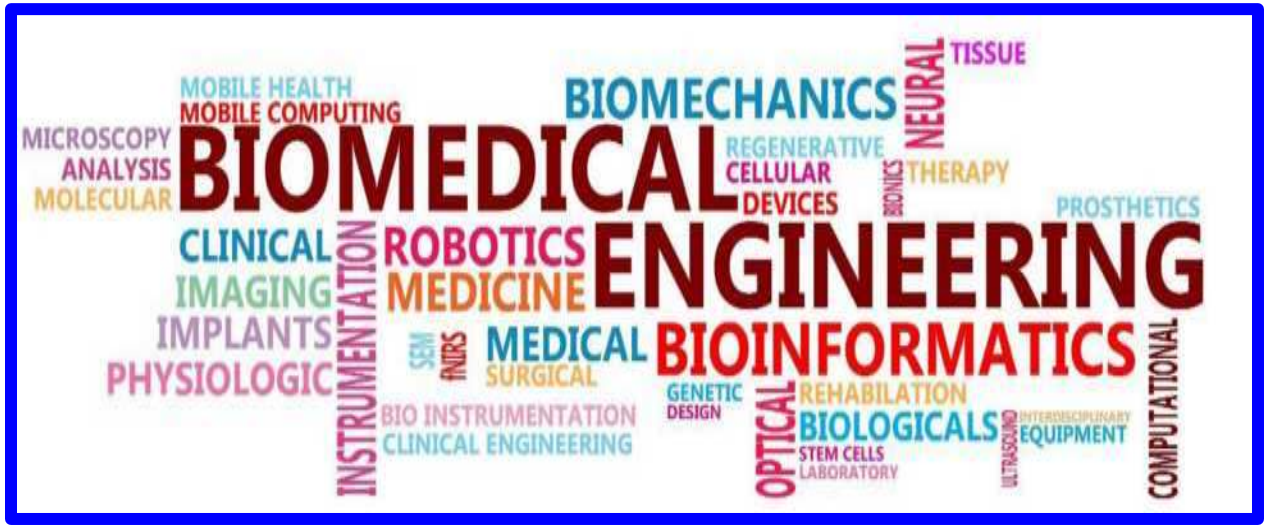


Networking

Take Home Message

Interdisciplinary fields of biomedical engineering.



Networking

ICMMB2024

Sharing today's knowledge for a better tomorrow

23rd International Conference on Mechanics in Medicine and Biology

11 – 13 September 2024, Bruxelles, Belgium

Take Home Message

150 participants
11 Countries
3 Continents
120 contributions
24 papers

Thank you for your attention!!

Questions?

ECOLE POLYTECHNIQUE DE BRUXELLES

BIOMED group

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