
PMB

ALCEN

from technology to innovation

From Particle Physics @ CERN to Particle Physics @ the industry

ATLAS, CMS, LHCb and ALICE Career Networking Event 2017

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13/11/2017

Resume

- **2009: Master II in “theoretical Physics and Mathematics, Particle and Astro-Particle Physics” at Aix-Marseille University**
- **2012 : Thesis on “*b*-jet tagging efficiency calibration and measurements of top quark pair relative differential cross section with ATLAS in pp collisions @ $\sqrt{s} = 7$ TeV” at Aix-Marseille University**
- **2014 : Postdoc on “Search for the Higgs boson decaying hadronically into two *b*-quarks” at Physikalisches Institut, Universität Bonn.**

Passionate Particle Physicist and NOT ready to leave the field

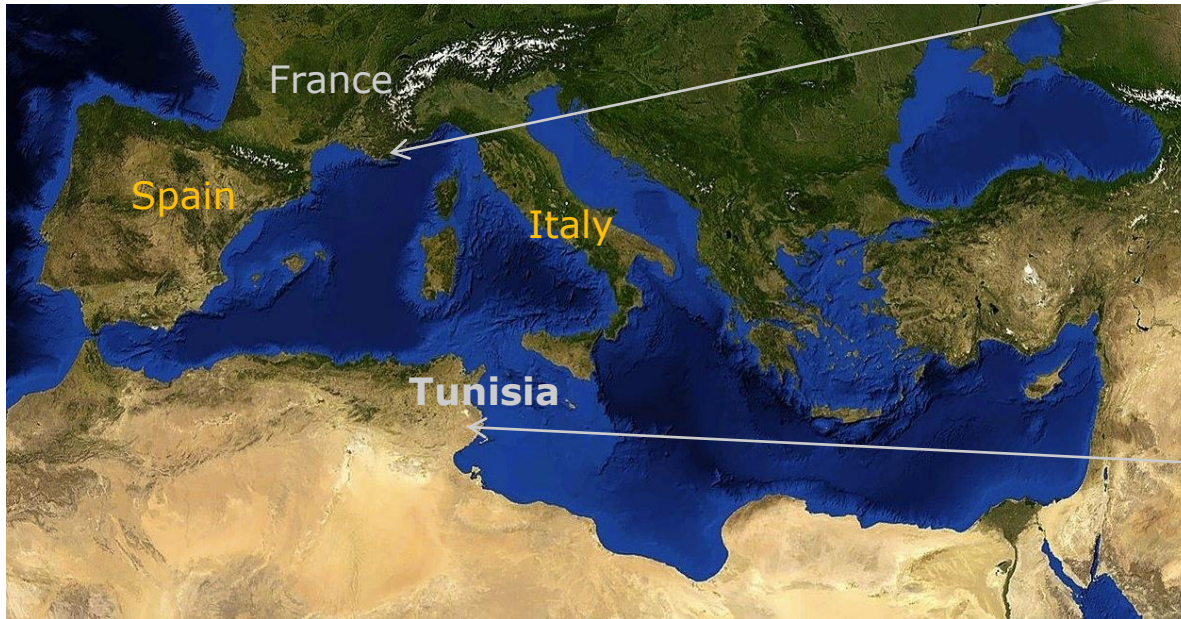
The Transition

YES, you can still be a Particle Physicist outside of the academic field

- **Today : ~ 30 000 accelerators operational world-wide**
 - **Industry and Medicine**
 - **~ 20 000 used for industrial applications**
 - **~ 10 000 used for medical applications**
 - **Source: World Scientific Reviews of Accelerator Science and Technology -A.W. Chao**
 - **LESS THAN A FRACTION OF A PERCENT is used for research and discovery science ...**
 - **YOU are the less than a fraction of a percent!**

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- **2014 - present : Particle Physicist @ PMB - ALCEN**
 - **PMB head quarters are based in Peynier, south of France, and has also a subsidiary in Tunisia, based in Sousse.**



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- **PMB - ALCEN**
 - **151 employees**
 - **2 manufacturing sites: Peynier, France and Sousse, Tunisia**
 - **Markets: Medical, Defense & Security, Nuclear power, Research, Industry**
 - **Products and services:**
 - **Ceramic-metal mechanical assemblies and subassemblies**
 - **High-frequency components**
 - **High-power couplers**
 - **Components for X-ray tubes**
 - **Linear Accelerators for Non-Destructive Testing & Radiotherapy**
 - **Cyclotrons**
 - **Maintenance and repairs**



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PMB – ALCEN: Electron Linear Accelerator

ORIATRON: High Energy X-ray generator from 3 MeV to 9 MeV

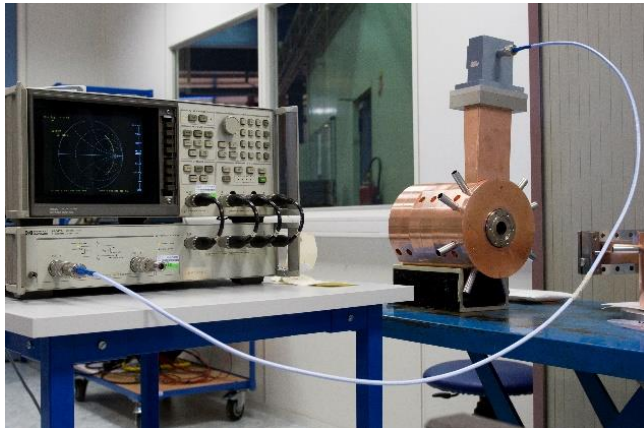
Applications

- NDT
- Medical
- Scientific
- Security
- Sterilisation



PMB – ALCEN: Electron Linear Accelerator

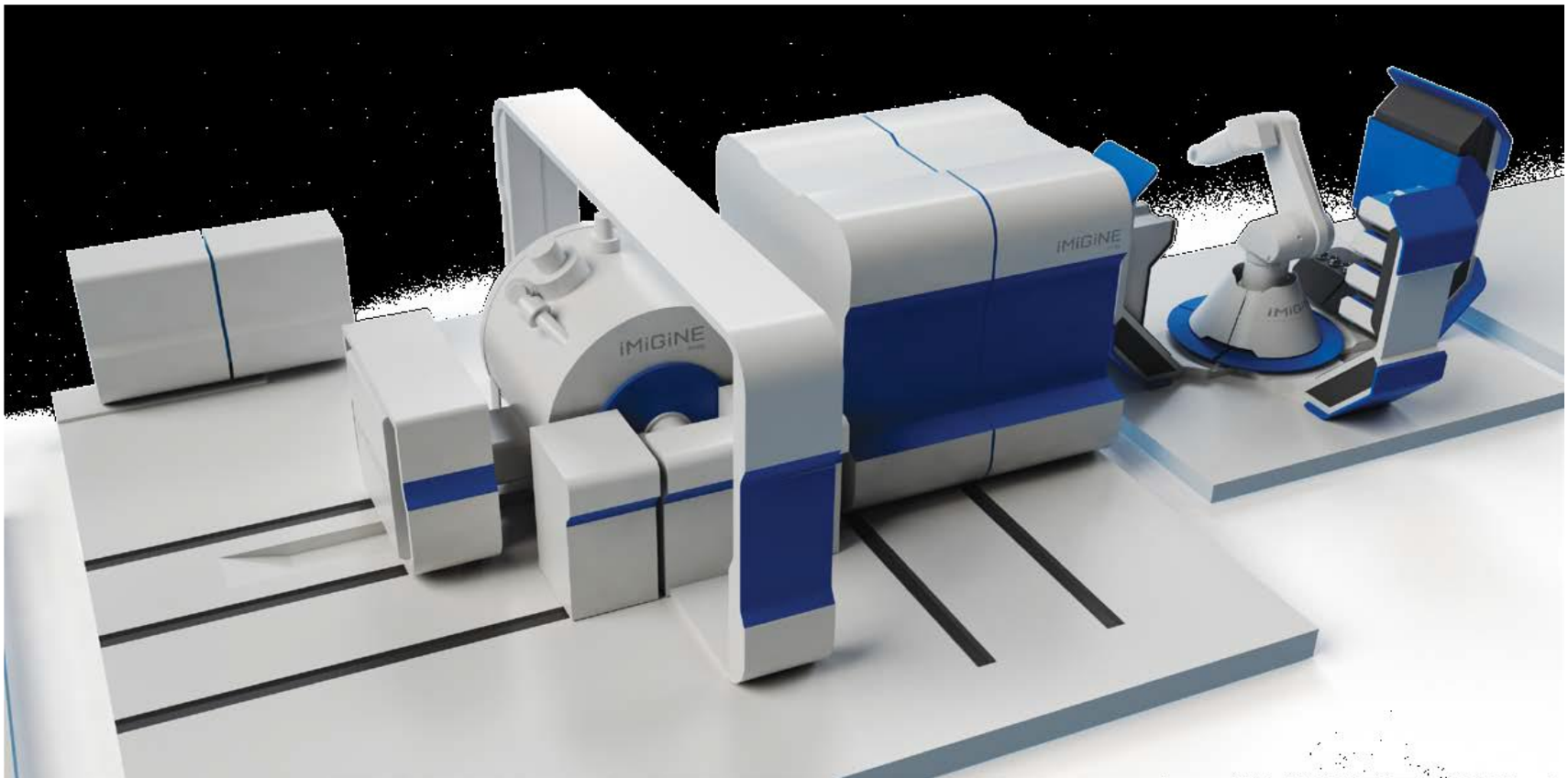
- In house beam line components manufacturing
- RF tuning and network analysers
- In house full linac assembly
- Dedicated bunker for Linac testing



PMB – ALCEN: Cyclotron

iMiGiNE: Automated Radiotracer Production System for PET imaging

Production of isotopes + automated radiochemistry lab



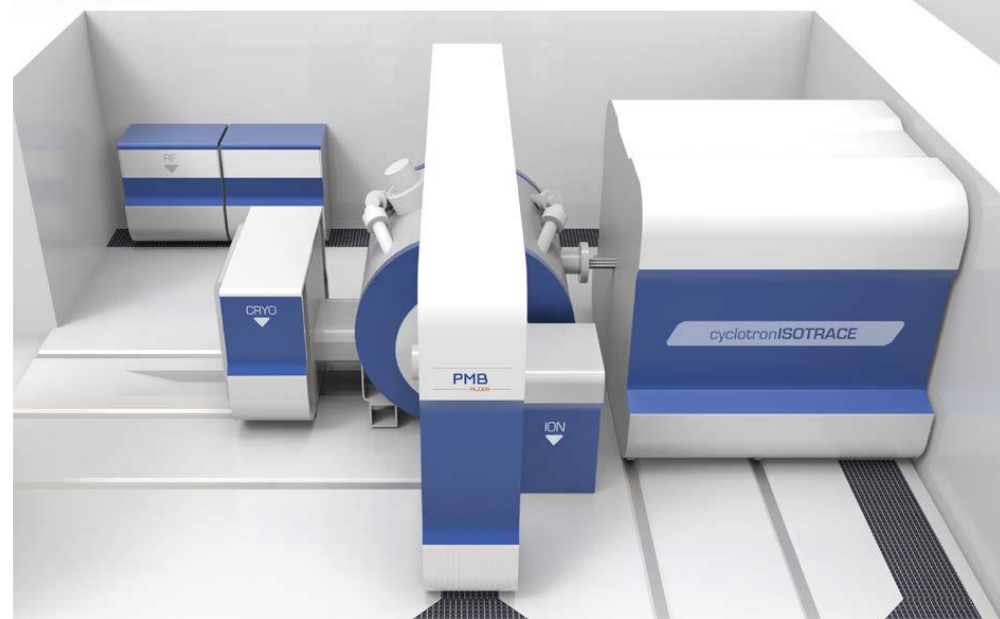
PMB – ALCEN: Cyclotron

iMiGiNE

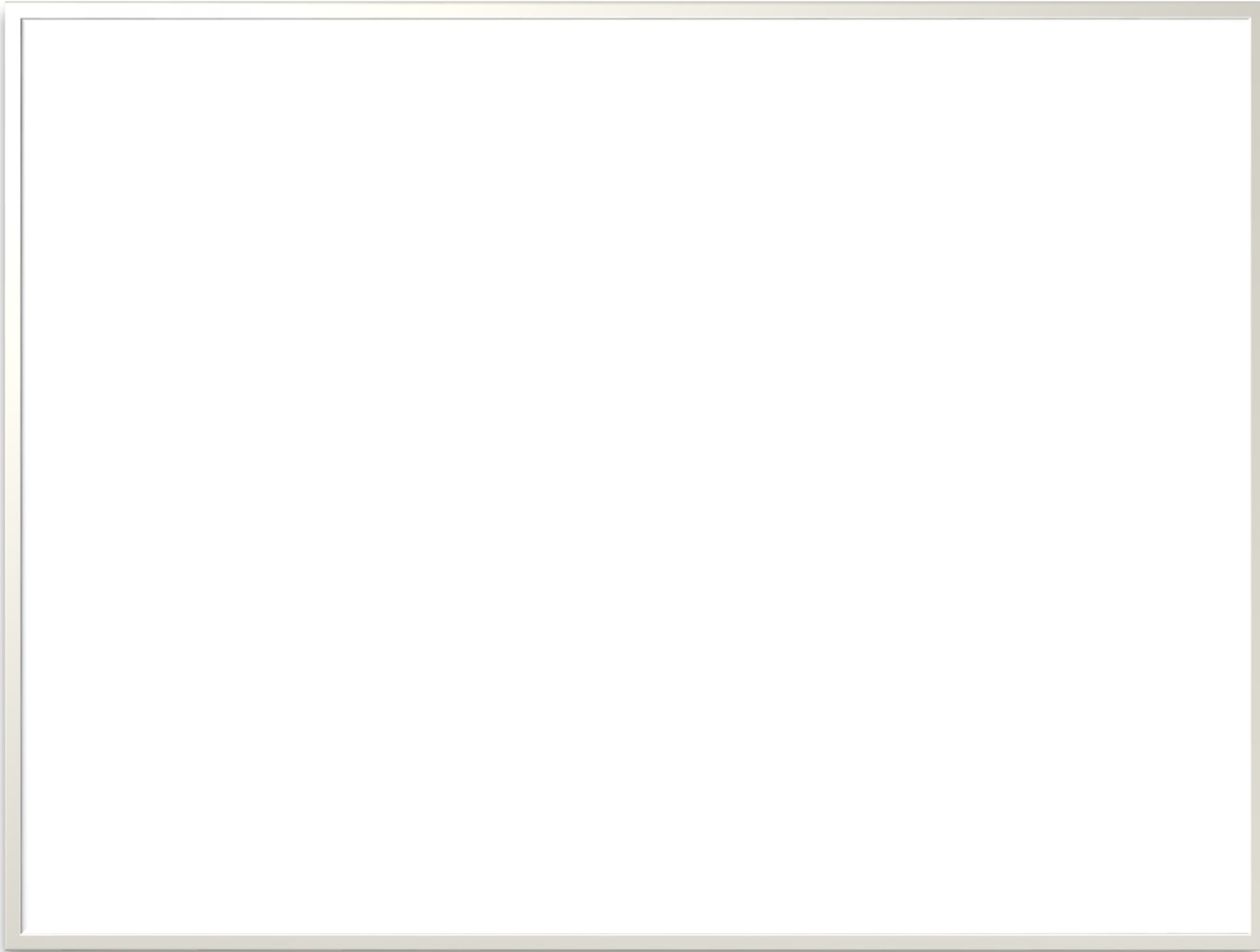
- Improve clinical diagnosis
- New grounds for further research in molecular imaging and nuclear medicine

ISOTRACE Cyclotron:

- Accelerates protons to 12 MeV
- He-free superconducting magnet
- Compact and lightweight
- Self-Shielded
- Four external targets



PMB – ALCEN: Cyclotron



The Transition

Currently:

- **Particle-Matter interaction expert**
 - **Monte Carlo simulations for particle transport**
 - **Shielding and radiation protection design for cyclotrons and Linacs**
 - **Target design for cyclotrons and Linacs**
- **Project Manager on Linac and accelerating sections**
 - **Meet with customers to take detailed ordering briefs and clarify specific requirements**
 - **Plan the project and divide into tasks**
 - **Delegate the tasks to the skilled individuals**
 - **Meet budgetary objectives and make adjustments to project constraints based on financial analysis**
 - **Deal with deadlines**

KEYWORD

NETWORK:



- Learn how to network
- **KEEP** your network alive