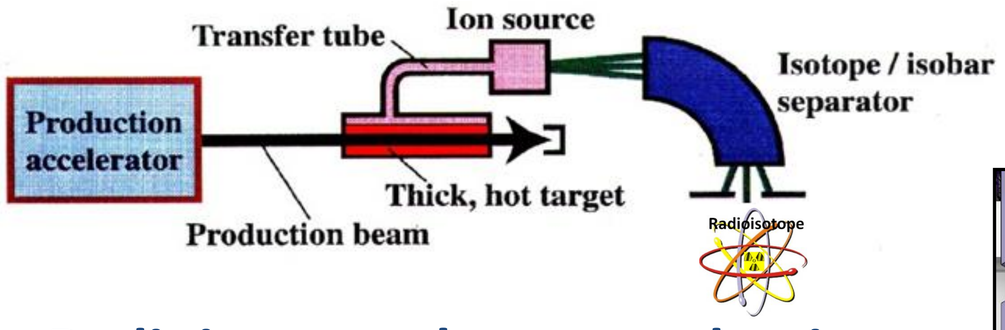
MEDICIS-produced radioisotope beams for medical applications
a Marie Curie Innovative Training Network

J. Pitters[1,2], S. Stegemann[3], N.Vuong[1,4]

The group at the National Graphene Institute with their host Kostya Novoselov (Nobel Prize 2010).

The MEDICIS facility under construction at CERN.

- **Training of a new generation of 15 entrepreneurial scientists within a network of leaders in the different interdisciplinary fields including a Nobel prize laureate.**
- **Bridging academia, industry, research institutions and hospitals for the production, transport, manufacturing and delivery to patients of innovative radiolabelled compounds for target-specific imaging and therapy of cancer.**
- **The new CERN-MEDICIS facility will extend the present ISOLDE facility and will provide dedicated medical batches for radiopharmaceuticals production. Accelerator technologies will be developed towards performing ^{11}C-based hadron therapy treatments.**



Radioisotopes beam production & mass separation

$^{11}CO_x^{1+}$

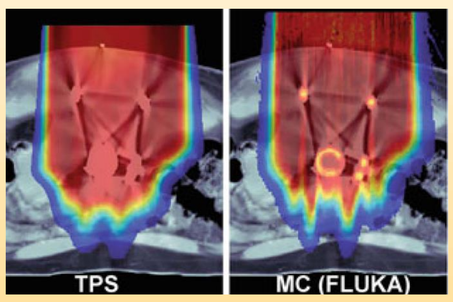
Charge breeding in an Electron Beam Ion Source

$^{11}C^{4/6+}$

The CERN-MEDICIS Facility

^{11}C beam preparation

Radioisotope collection



Monte Carlo Simulations for an improved Treatment Planning System (TPS)

Advanced treatment planning

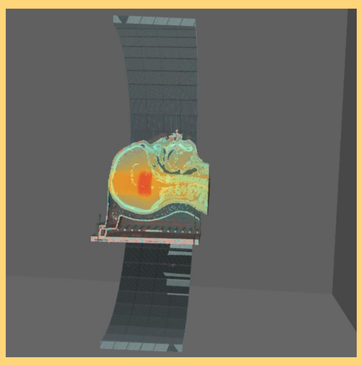
Radiochemistry

Shielded Containers developed for the safe transport of medical radioisotopes and compounds

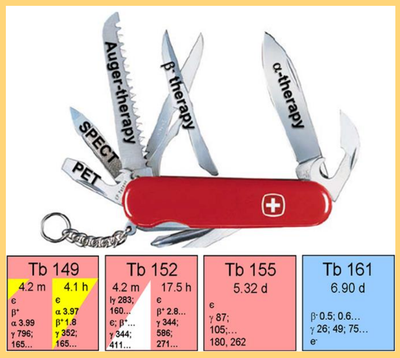
Shipping and safety control

^{11}C-based Hadron Therapy

Functional Imaging



Theranostic Development



Radiopharmaceutical Synthesis

MEDICIS-PROMED (Apr 2015 – March 2019): www.cern.ch/medicis-promed

Scientist in charge: Thierry.Stora@cern.ch

Students: K. Choi, S. Chowdhury, F. Cicone, A. D'Onofrio, T. K. Fam, R. Formento Cavaier, V. Gadelshin, B. Gonsalves, A. Litvinenko, M. Maietta, Y. Martinez, M. Nazarova, J. Pitters, I. Prionisti, A. Ringvall-Moberg, S. Stegemann, N. Vuong

[1]CERN, Geneva 23, CH-1211, Switzerland; [2]Technische Universität Wien, Karlsplatz 13, Wien; [3]KU Leuven, Celestijnenlaan 200D, 3001 Leuven, Belgium; [4]EPFL, Route Cantonale, 1015 Lausanne

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