

## **Health pole: Head Philippe Laniece , rapporteur Mathilde Badoual**

**Meeting at IFJ PAN, 4 April 2023**

**Participants:** Justyna Miszczyk Renata Kopeć, Marta Marszałek, Leszek Grzanka, Magda Parlińska, Michał Krupiński, Mathilde Badoual, Paweł Olko, Kasia Pogoda, Souleymane Kamara

3 teams supported by a biological department

Health pole components: 16 researchers, 10 PhD and Postdocs

**Radiation in living** (radiotherapy), cancer of brain: to develop new detectors to measure internal and external therapy gamma camera, new radionuclides for medicine:

**THIDOS-** Radioisotope cancer therapy: Laurent Menard

**PRISM** R&D Charles-Oliver Bacri: PRISM  $^{158}\text{Gd}(p,n)^{155}\text{Tb}$ ,  $^{155}\text{Tb}$  (Spect imaging)

**Magdalena Parlińska – nanoparticles**

**Possible link: J. Mietelski group (development of new radioisotopes for diagnostics) complementary particle source for radioisotope production)**

**LIQUID-PET:**

**BioAlto** Tandem for 14.5 MeV radiobiology for H, He, C, and O They are also using 20% of time for commercial irradiation – - Amelia Leite

RadioGraff; Microdosimeter diamond detectors

**Possible link: there is a high demand for proton irradiation in France – AIC-144 is looking for customers offering 60 MeV beam + Proteus 235 cyclotron (230 MeV)**

**Dosimetry: solid state, active (Ionization Chamber-clinical), biological, retrospective dosimetry – metrological connected to Secondary Standard Dosimetry Laboratory**

**Instrumentation and Imaging (optics, nuclear physics): IMIT team:** Development of optical and radioisotope probes for the characterization of brain tissue in physiological and pathological conditions

Modeling of living systems:

**MAPSSIC:** A radiosensing telemetric probe for behavioral imaging: 2D activity in brain

Quantifying the microstructure of brain:

**MOV team** – modelling of brain tumors , 5 parameters model to predict the outcome of radiotherapy of glioma – Mathilde

**Katarzyna Pogoda: stiffness of brain tumors**

**Leszek Grzanka: Radiobiological modelling**

**Justyna Miszczyk: Models for radiobiology**

**Underground Low Background Laboratory Wieliczka-Bochnia – extending the scope – links to French laboratories - Renata Kierepko, Krzysztof Kozak**