



## Bioimpedance vs Ionizing Radiation Imaging: An Unequal Contest in Biomedical Equipment Development

**Dr. Franco Simini**

[simini@fing.edu.uy](mailto:simini@fing.edu.uy)

Universidad de la República, Uruguay

Discovered accidentally 150 years ago, ionizing radiation imaging was intensively developed to be put to sanitary work for the past 75 years. In so doing, the results of military oriented research in nuclear science and technology were oriented to Nuclear Medicine and other imaging specialties. For unclear reasons the low cost bioimpedance exploration of the human body, of similar age starting in the XIX century, is progressing at a much slower rate with much less spectacular results in terms of market development, support of medical diagnoses and ultimately in health production. The unequal situation is documented by the number of publications in both fields. A list of advantages and difficulties present in both modalities is revisited in the light of current wearable technology and miniaturization. Possible research lines include functional bioimpedance spectroscopy at the bedside, impedance plethysmography and bioimpedance based wearable and home monitoring.