

Georges CHARPAK

(March 8, 1924 – September 29, 2010)

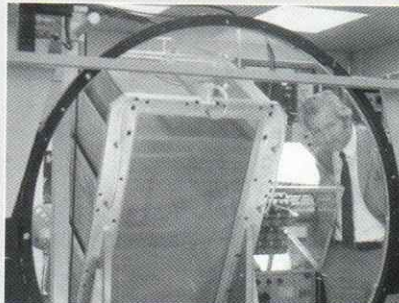
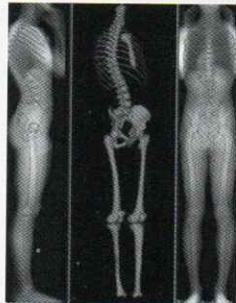


Georges CHARPAK was born in the village of D'browica in Poland (now Dubrovystia, Ukraine). Charpak's family moved from Poland to Paris when he was seven years old. After graduating from the Lycée Joffre in Montpellier, in 1945 he joined the Paris-based École des Mines, one of the most prestigious engineering schools in France. The following year he became a naturalized French citizen.

He graduated in 1948, earning the French degree of Civil Engineer of Mines (equivalent to a Master's degree) and started working for the National Centre for Scientific Research (CNRS). He received his PhD in 1954 from Nuclear Physics at the Collège de France, Paris, where he worked in the laboratory of Frédéric Joliot-Curie.

In 1959, he joined the staff of CERN (European Organization for Nuclear Research) in Geneva. This is where he invented the multiwire proportional chamber, which he patented and that quickly superseded the old bubble chambers, allowing for better data processing. He eventually retired from CERN in 1991.

In 1980, Georges CHARPAK became professor-in-residence at École Supérieure de Physique et de Chimie Industrielles in Paris (ESPCI) and held the Joliot-Curie Chair there in 1984. This is where he developed and demonstrated the powerful applications of the particle detectors he invented, most notably for enabling better health diagnostics. He was elected to the French Academy of Sciences on May 20, 1985.



Georges CHARPAK was awarded the Nobel Prize in Physics in 1992 "for his invention and development of particle detectors, in particular the multiwire proportional chamber", with affiliations to both École Supérieure de Physique et de Chimie Industrielles (ESPCI) and CERN. This was the last time a single person was awarded the physics prize.

Thanks to this invention and the multidisciplinary work with medical radiologists and orthopedic pediatric surgeons, a new low dose radiation device named EOS was developed with 3 main advantages:

- The reduction of doses necessary to obtain a good image of the skeletal system is important: 8 to 10 times less for 2D imaging, and 800 to 1000 times less for 3D reconstruction from CT scan cuts.
- The accuracy of 3D reconstruction obtained is as good as a 3D reconstruction from CT scan cuts.
- In addition, the patient gets its imaging in standing functional position thanks to the X-rays obtained from head to feet simultaneously AP and lateral. This is a big advantage compared to CT scan used only in lying position.

Even though a supporter of nuclear power, CHARPAK was

one of three signatories to an editorial in the French daily Libération in August that called for a halt to the building of the experimental fusion reactor ITER in the south of France because the cost of the project has running out of control and the plant will be "unusable." CHARPAK wrote many books and the last one, *Memoirs of a Rootless Person, Physicist, Citizen of the World*, was published in 2008.

Pr. CHARPAK died on September 29, 2010

