



Center for Technology Transfer and Marketing

CTTM

## GAMMA IRRADIATION FOR RADIATION RESISTANCE TESTS

### DESCRIPTION

Radiation resistance of materials is of great interest for various industries such as medical devices, nuclear power plants or aerospace. Among many types of radiation currently used for material testing, gamma is the most common because of its high availability in research or industrial irradiators, well standardized dosimetry and high reproducibility of the irradiation experiments. IRASM Department of IFIN-HH acquired a long experience in setting up gamma irradiation for different materials. It operates two Co-60 gamma irradiators: a research, self-contained irradiator, and an industrial, versatile, panoramic irradiator. Irradiation setups are available for a dose range from 0,01 kGy to over 1000kGy and a dose rate range from 0.1kGy/h to more than 10kGy/h.

### APPLICATION DOMAINS

Gamma irradiation of samples is performed for many applications such as: inducing desired effects in a specific material or for radiation process validation, hardness testing of electronic components and other materials, compatibility studies on biological samples, determination of radioresistance of organisms, dosimeter studies for research, detection of irradiated food, dating in archaeometry and geochronology.

### MAIN ADVANTAGES

Wide dose rate and dose rate range, with good uniformity of the absorbed dose even for large samples. The dosimetric systems in use (ECB/oscillometry and Alanine/EPR) are traceable at NPL (UK) by RISØ HDRL (DK).



### CONTACT

[www.irasm.ro](http://www.irasm.ro)

tel: (021) 404 61 83

fax: (021) 457 53 31

**Daniel Negut**

e-mail: [dnegut@nipne.ro](mailto:dnegut@nipne.ro)

**Mihalis Cutrubinis**

e-mail: [mcutrubinis@nipne.ro](mailto:mcutrubinis@nipne.ro)

### POTENTIAL CUSTOMERS OR COMMERCIAL APPLICATIONS

The service addresses customers from medical and pharmaceutical industry, cosmetic industry, food industry, material sciences, nuclear industry, aerospace, radiobiology, radiation chemistry, archaeology, geology, cultural heritage.

### KEYWORDS

**gamma irradiation, material testing, dating, radiobiology**

