

# **ASSESSMENT OF $^{222}\text{Rn}$ CONCENTRATION IN THE SOIL AROUND IPEN FACILITIES**

Marcia P. Campos, Guilherme L. Reis, Marcelo B. Nisti, Barbara P. Mazzilli,

Instituto de Pesquisas Energéticas e Nucleares (IPEN)  
Av. Professor Lineu Prestes 2242  
05508-000 São Paulo, SP - Brazil

# Objectives and Methodology

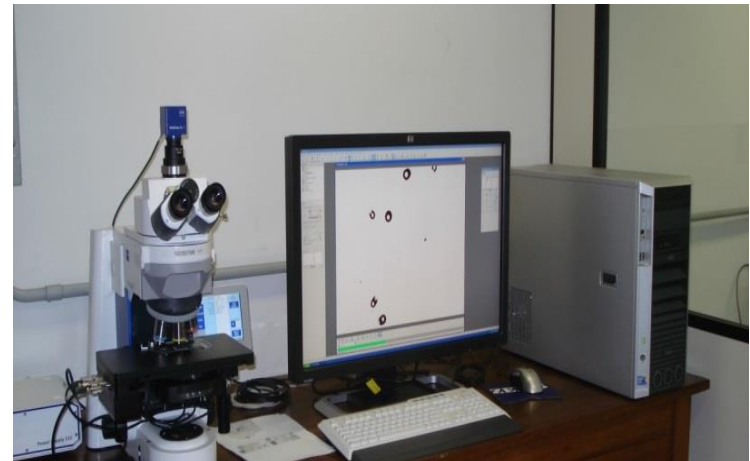
- The aim of this study is to measure the radon concentration in the soil around IPEN facilities.
- Radon concentration in the soil was measured with SSNTD (CR-39) placed inside a PVC pipe (cumulative radon device) without influence of natural ventilation.
- After exposure for approximately 7 days, the detectors were collected and replaced by new ones. Radon concentration was calculated through the track density, the calibration factor and the exposure time.



cumulative radon device



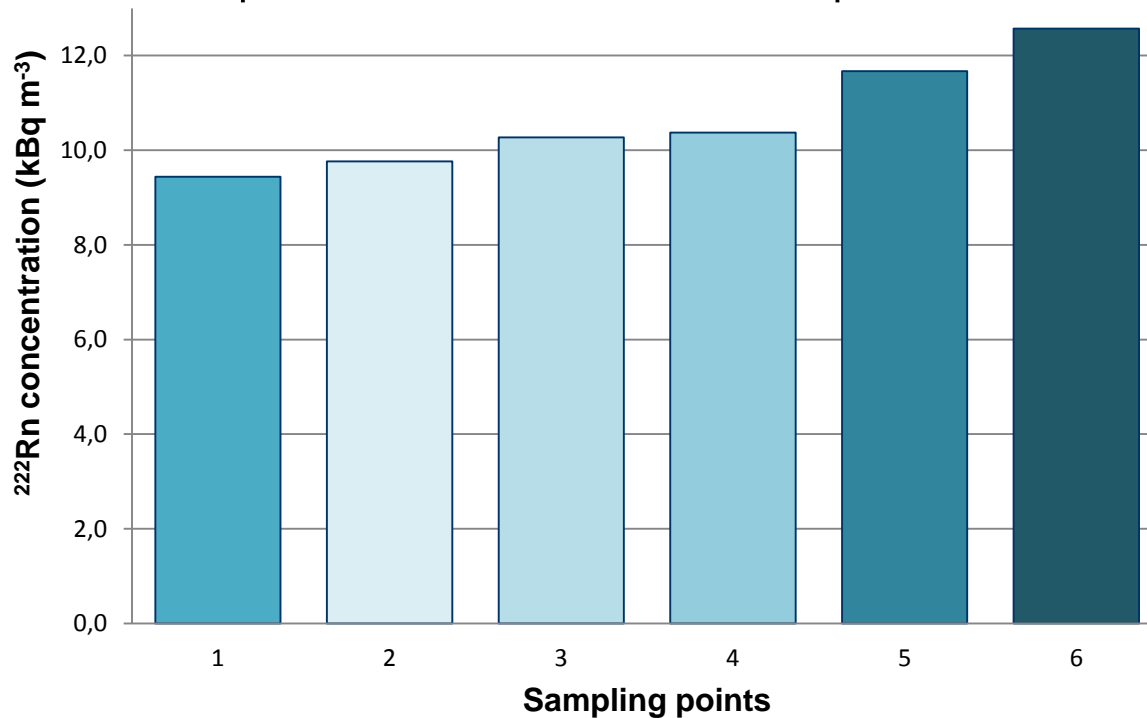
CR-39



Track density measurement system

# Results

A total of six different points were monitored from September 2015 to May 2016.



Average  $^{222}\text{Rn}$  concentration in the soil around IPEN facilities

✓ The results obtained for the  $^{222}\text{Rn}$  concentration in the soil around IPEN facilities varied from 6.0 to 16.3 kBq m<sup>-3</sup>, with an average value of  $10.7 \pm 2.4$  kBq m<sup>-3</sup>.