

M.G. Nunes; D. Villani and L.L.C. Rodrigues
mgnunes@ipen.br

International Conference on Applications of Radiation Science and Technology
(ICARST 2017)

24 to 28 April 2017, Vienna, Austria

Materials



CaSO₄:Dy
CaSO₄:Ce,Eu
TLD dosimeters



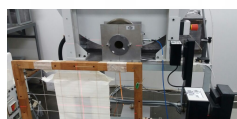
Thermo 4500 TL Reader
24h after irradiation readout



SSD = 100 cm



⁶⁰Co or ¹³⁷Cs
Free air
Electronic equilibrium

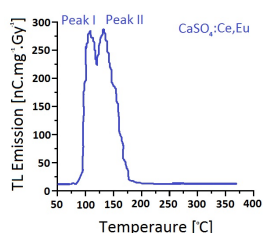


RQR, RQA, RQT and N ISO Series
Free air
Electronic equilibrium

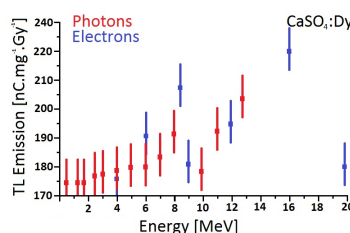


4 – 20 MeV effective energies electron beams
Reference depth in water to provide electronic equilibrium
TRS 398 standard calibration conditions

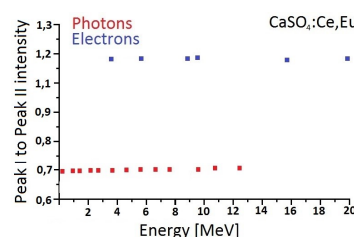
Results and Conclusions



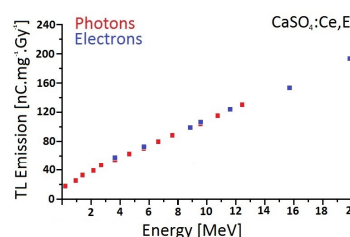
CaSO₄:Ce,Eu Glow Curve
Peak I to Peak II ratio is key
to energy determination



CaSO₄:Dy response to
different radiation types
and qualities. Unknown
radiation type means
dose misdetermination.



Peak to peak
intensity ratio
defines radiation
type.



CaSO₄:Ce,Eu response to
different radiation types
and qualities. Unknown
radiation type still allows
dose determination.



The authors are grateful to CNEN, CNPq and IAEA for their financial support which allowed both the study performing and its presentation at ICARST2017.