

# Session 2

## Dose assessment of occupational radiation exposures

Summary of Contributed Papers

Stefan Mundigl

Rapporteur

# Introduction

- High interest in this session – a total of 35 papers accepted
- Main areas covered
  - Dosimetry of external exposure (26 papers)
    - International guidance and standards (2 papers)
    - Secondary standards dosimetry laboratory (1 paper)
    - Development of dosimeters (4 papers)
    - (Type) Testing of dosimeters – pulsed fields (4 papers)
    - Computational techniques (2 papers)
    - Intercomparison exercises (4 papers)
    - Extremity and eye-lens dosimetry (9 papers)
  - Dosimetry of internal exposure (6 papers)
  - Programmes to monitor occupationally exposed workers (3 papers)

# External exposure (1)

- International guidance and standards
  - ***J. H. Garcia Alves et al.***, EURADOS WG02 Actions: Harmonization of Individual Monitoring in Europe
  - **F. Wissmann et al.**, New ISO Standards for the Radiation Protection of Aircraft Crew
- Secondary standards dosimetry laboratory
  - ***E. Caseria et al.***, Upgrading the National Radiation Standards for Protection Level Calibration at the Secondary Standard Dosimetry Laboratory(SSDL) in the Philippines

## External exposure (2)

- Development of dosimeters
  - ***S. Baradaran et al.***, Comparison Of The Response and Behavior of TL Neutron - Gamma Dosimeters Used in Individual Dosimetry System for  $^{241}\text{Am}$ -Be and  $^{252}\text{Cf}$  Sources
  - ***M. Baptista de Freitas et al.***, A New Personal Dosimetry Badge Based on Combined Luminescence Techniques (TL and OSL)
  - ***P. Antonio et al.***, Commercial TL and OSL  $\text{Al}_2\text{O}_3:\text{C}$  Detectors for Use in Beta Occupational Monitoring
  - ***J. T. Osko et al.***, Invention of Unique and Development of Routine Radiation Monitoring Techniques for Polish Nuclear Programme, Industry and Medicine

## External exposure (3)

- (Type) Testing of dosimeters – pulsed fields
  - **H. Zutz et al.**, Can a Medical LINAC Be Used for Testing Radiation Protection Dosimeters?
  - **S. Friedrich et al.**, Pulsed Radiation Facility with about 115 ns Pulse Durations
  - **O. Hupe et al.**, Type Test Requirements and Reference Fields for Radiation Protection Dosimetry in Pulsed Radiation Fields
  - **P. Papírník et al.**, Inaccuracy of Personal OSL Dosimeters in Interventional Radiology

# External exposure (4)

- Computational techniques
  - ***P. Gyekye et al.***, Monte Carlo Investigation Into Scatter Radiation From CT Fluoroscopy Gantry: Effect on Staff Dose
  - ***E. Oyekunle et al.***, Total Reference Air Kerma as Dosimetric Parameter for Assessing Occupational Radiation Protection in Brachytherapy
- Intercomparison exercises
  - ***M. Arib et al.***, Measurement of Personal Dose Equivalent Hp(10) in Photon Fields in the Africa Region
  - ***M. Bero et al.***, Personal Dosemeters Performance Testing for Six Service Providers in Five Different Countries in Western Asia Region
  - ***E. Fantuzzi et al.***, Gaps and Challenges in Neutron Personal Dosimetry: Intercomparisons and Applicable Criteria for Dosimetric Performance
  - ***V. Chumak et al.***, The First National Intercomparison of Whole Body Dosemeters in Photon Fields in Ukraine: Preliminary Results

# Extremities and eye lens dosimetry (1)

- **R. Sapoi et al.**, Extremities and Eye Lens Dosimetry in Romania: Challenges and Developments
- **V. Nilsson**, Assessment of the Conformity of Dosimeters Used to Measure Dose to the Lens of the Eye - A Regulatory Approach
- **A. Lima et al.**, Equivalent Dose Estimation of Eye Lens on Planned Exposure Situation of Industrial Gamma Radiography using the Visual Monte Carlo Brazilian Software
- **L. Alejo Luque et al.**, Estimated Radiation Dose to the Eye Lens with Photoluminescence Dosimeters
- **Z. Cemusová et al.**, Angular Dependence of Two Different (LiF based) Eye Lens TL Dosimeters

## Extremities and eye lens dosimetry (2)

- **Z. Knezevic et al.**, Overview of the Activities on Occupational Dosimetry within EURADOS WG 12, Dosimetry in Medical Imaging
- **J. Vinklář et al.**, The Possibility of Determining the Dose in the Lens of the Eye for Radiation Workers
- **W. J. Chase et al.**, Implications of the New Lens Dose Limit for Dosimetry and Radiation Protection Programs at Nuclear Power Plants
- **J. Sabol et al.**, Skin Exposure: A Specific Problem in Occupational Monitoring



# Internal exposure

- International guidance and standards
  - ***C. Challeton de Vathaire et al.***, Development of a Standard for the Monitoring and Internal Dosimetry of Exposed Workers of Nuclear Medicine
- In-vivo measurements – whole-body counting
  - ***D. Franck et al.***, Development of a New Tool of Expertise for Internal Contamination Assessment of Nuclear Medicine Workers
  - ***M. A. Saizu***, Internal Contamination Monitoring for Workers from Nuclear Facilities in IFIN-HH Romania - Current and Future Practices

# Internal exposure (2)

- Computational techniques
  - ***N. Helal et al.***, A Comparative Study between Mondal Software and a Constructed Model for Calculating Internal Exposure of some Radionuclides
  - ***E. Davesne et al.***, OPSCI: Software to Optimize Individual Routine Monitoring Programme of Internal Contamination
- Accidents and events
  - ***M. Zagyvai et al.***, Preliminary Investigations of an Occupational Am-241 Incorporation

# Programmes to monitor occupationally exposed workers

- ***F. Mihai et al.***, Doses Recorded through Occupational Exposures using two Enshrined Passive Dosimetry Methods and Personal Monitoring Option
- ***E. Okuno et al.***, Thirty Five Years of Occupational Individual Monitoring at University of S. Paulo
- ***S. Mikheenko et al.***, ARMIR: The System for Estimation of Radiological Risk from Occupational Exposure

# Summary

- High interest in this session – a total of 35 papers accepted
- Some challenges
  - Dosimetry in new medical procedures and techniques
  - Eye lens dosimetry
  - Dosimetry in pulsed fields

- 
- 

Please go and see the posters  
and discuss with the authors!

Thank you!