

Introduction

- Company Synopsis
- Organisation Chart
- Institute for Nuclear Materials Science - NMS
- Institute for Advanced Nuclear Systems - ANS
- Institute for Environment, Health and Safety - EHS
- Institute for Communication, Services and Administration - CSA

Nuclear Materials Science - NMS

- Laboratory testing of a room temperature separation technique as part of a method for the reconditioning of bituminised waste
- TEM study of highly irradiated beryllium annealed at 500-900 °C
- TEM investigation of irradiated U-7 wt% Mo dispersion fuel
- Fuel research for subcritical and critical GEN-IV systems cooled by heavy liquid metal
- The effect of irradiation-induced damage on the hardening-embrittlement of RPV-steels
- Effect of stacking fault energy on the neutron radiation induced defect accumulation in stainless steels
- Improved safety margins for Belgian nuclear power plants by the application of the Master Curve approach to RPV steels
- SCK•CEN contribution to the standardization of impact toughness tests on precracked Charpy specimens
- ADS-cladding fabrication and qualification: Burst test
- Treatment of electromechanical noise data by the Hilbert-Huang transform
- Stress corrosion cracking of irradiated stainless steels in primary water: experimental studies and model development in the FP7 PERFECT IP
- BR2 reactor: Medical and industrial applications

Advanced Nuclear Systems - ANS

- MYRRHA/XT-ADS core design
- MYRRHA/XT-ADS primary system design and experimental devices
- Windowless Electron Beam Experimental Irradiation WEBExplr
- The MYRRHA Business Plan
- The POSEIDON project
- On-line fast flux measurements in the BR2 reactor
- Retrospective dosimetry feasibility study for the ATUCHA I nuclear power plant
- The GUINEVERE project at the VENUS facility
- European lead cooled system (ELSY)

Environment, Health and Safety - EHS

- Impact modelling of Naturally Occurring Radioactive Materials (NORM) in the environment
- Assessing soil and plant parameters affecting uranium availability and plant uptake
- Induction of oxidative stress related responses in *Arabidopsis thaliana* after uranium exposure
- Impact of advanced fuel cycles on radioactive waste disposal in a clay formation
- Calibration and validation of a local-scale transient groundwater model
- Radiation induction of developmental effects during the very early stages of pregnancy
- Human space biology at SCK•CEN: from *in vitro* cell experiments to the follow-up of astronauts
- Bacterial genomic adaptation and response to metals
- Ageing of Eurobitum bituminised radioactive waste
- A performance comparison of nine selected liquid scintillation cocktails

- Development of a microbiological ammonium to nitrate recycling bioreactor for space capsules
- The ESDRED project: Engineering Studies and Demonstration of Repository Designs
- The TIMODAZ project: Thermal impact on the damaged zone around a radioactive waste disposal in clay host rocks
- SCK•CEN 2006 barometer on risk perception of the Belgian population
- Use of the FORK detector in safeguards inspections
- Decision aiding model for the evaluation of agricultural countermeasures after an accidental release of radionuclides to the environment
- Calculation of organ doses in X-ray examinations of premature babies
- Radiation protection of medical staff: a coordinated action by EURADOS on extremity dosimetry and the use of active personnel dosimeters (CONRAD)
- Characterisation of passive detectors for space dosimetry (DOBIES)
- Investigations on the long-term behaviour of high level waste forms
- The development of safeguards for geological repositories
- Corrosion properties of HLW and spent fuel overpacks in highly alkaline environments
- Advancements in the study of the influence of organic matter on the sorption behaviour of radionuclides onto Boom Clay host rock
- Chemical perturbations of the Boom Clay: Modelling the long term interaction of cementitious water with Boom Clay
- The EC Integrated Project NF-PRO on near field processes
- Support to other nuclear waste disposal programs considering clay as a potential host rock
- Beryllium recycling: Feasibility and Challenges
- Decommissioning & Decontamination
- Management of waste and liabilities
- Preparation of the PRACLAY demonstration & confirmation experiments: construction of the PRACLAY gallery
- History of the Belgian nuclear power controversy

Communication, Services and Administration - CSA

- Education and training

Appendix

- Members of the Board of SCK•CEN
- External Advisory Committees
- Doctoral Theses Prepared at SCK•CEN and defended in 2007
- Awards and PhD and Postdoctoral Researchers: Selection 2007
- Scientific Output and Visitors in 2007
- Events in 2007