WTTC97 - Program

Sunday, 8 June 1997

16:00 - 20:00 Registration - Foyer of the Lecture Center ('Kommunikationszentrum'), German Cancer Research Center - DKFZ, Im Neuenheimer Feld 280, Heidelberg
16:00 - 19:30 ´´Open House`` - Tours through the MC-32 Cyclotron and TRIGA Heidelberg-II Nuclear Reactor facility
19:00 - 22:00 Welcome Reception

Monday, 9 June 1997

8:00 - 12:00 Registration
8:30 Opening of the Workshop, Welcome by Prof. Harald zur Hausen (Director of the German Cancer Research Center)
8:40 Welcome by Dr. Wolfgang Maier-Borst (Head, DKFZ Division of Radiochemistry and Radiopharmacology)

First Session 8:50 - 10:30, 10:45 - 12:30 John C. Clark, Mikael Jensen

Accelerators and Targets
- Development of accelerators in the last decade
- Trends in accelerator construction; short presentation and assessment of commercially available targets by each cyclotron manufacturer; new accelerators systems ?
- Users´ experiences with the products available on the market and presented by manufacturers; comparison with home made routinely used target systems; advantages, disadvantages and prices
- Optimum accelerator and target data particle energy, beam current, irradiation time for the optimum production of PET radionuclides
- New facilities; layout, planning and cooperation between cyclotron - PET centers
- International Nuclear Target Development Society - Bill Lozowski
- Report from the Labs

Second Session 14:00 - 15:30, 15:45 - 17:30 Jean-Luc Morelle, Robert J. Nickles

High Beam Currents and In-Target Production of Precursors
- Importance of high beam current targets
- Physical and chemical phenomena observed in the target at high beam currents and consequences for the target construction
- Energy of particles and high beam currents - well-balanced - optimum conditions for important production processes
- Vertical beam irradiation systems and targetry
- In-target production of precursors

Tuesday, 10 June 1997

Third Session 8:00 - 9:30, 9:45 - 11:20 Richard Ferrieri, Stefan Zeisler
Richard Ehrenkaufer, David Schlyer

Target Chemistry and Radiochemistry
- Chemistry in the target in general
- Effect of the physical state of the target material on the product

- Reaction of produced species with the metal surfaces and internal metal target parts; selection and influence of target construction material; purity questions of the target materials and foils; specific activity of the product (especially in ^{11}C production)
- Plasma effects, chemistry in the gas phase
- Improvement of yields and problems of product extraction from the target
- Comparison of results and importance of specific activity of the products (in particular ^{11}C; ^{13}N and ^{18}F) from different laboratories; effect on the quality of the radiopharmaceutical product
- Concentration effects - nanogramm amounts are produced, following chemistry processes running at macrochemistry level; the role of microchemistry in radiochemistry and the work at submicro-level
- Effects of the dilution with non-active isotopes in all processing steps, from used chemicals and from the contact with target walls, questions of radiopharmaceutical quality standards in the production process
- Development of micromodules connected to the target perifery, use of microamounts of chemicals in the labelling procedure

11:30 Tour to Research Centre Karlsruhe (FZK) and Speyer
19:30 Dinner, Restaurant Molkenkur, Heidelberg

Wednesday, 11 June 1997

Fourth Session 8:30 - 11:00, 11:15 - 12:45 Günter Firnau, Sven-Johan Heselius
Jeanne Link, Nigel Stevenson

8:30 - 9:15: Invited Talk: Prof. Gerhard K.Wolf - Surface Modification by Ion Beam Techniques

Radionuclides, Targets, Processing and Automation

- Progress in targetry in the last decade - targets for production of short lived radionuclides for PET and SPECT; efficiency, yields and quality of the products
- Gas targets: specific gas targetry problems
- Optimum target and windows construction materials
- Transport systems of radionuclides; tubing systems; pumps, etc.; perifery of the targets
- Targets used for the production of longer-lived radionuclides for diagnostics and for therapy; use of solid targets and latest developments
- New radionuclides; targets for the production of generators nuclides
- Automation in targetry and chemistry systems

Fifth Session 14:00 - 15:30 J. Robert Dahl, Jörg Steinbach

Typical Production Targets for the Medical Radionuclides and Target Chemistry

- Discussion of most effective targets for the production of ^{18}F in both chemical forms
- Chemical state of ^{18}F species and question of direct and indirect precursors of ^{18}F from both main production processes used
- Analytical methods used in targetry products; ^{18}F - ^{48}V; Ag, Cd nuclides and isotopes from the target construction materials (contaminants)
- Historical significance and importance of radiochemistry in accelerator targetry; what we should do for a regular and correct development of radiochemistry and targetry in the future

Poster Discussion 15:45 - 17:30 Richard Lambrecht, Regin Weinreich

Closing Remarks Thomas J. Ruth