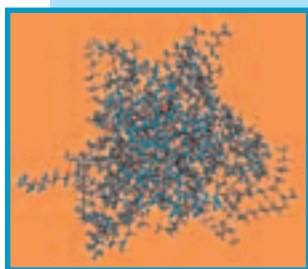




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Cover photo:

Conformation of the pPEGMA graft-polymer, that, in a selective solvent, mimes a star-polymer. Differently from star polymers, however, its interaction potential is described by an adhesive hard-sphere model.



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rope and especially the UK is the center of this activity. C. Norris from Diamond Light source presented plans how these developments can be incorporated in a state of the art synchrotron light source. M. Kocsis, A. Bravin, J.-C. Labiche and C. Ponchut showed developments at the European Synchrotron Radiation Facility ranging from gaseous detectors over CCDs to Ge – strip detectors and Si pixel devices. C. Venanzi, University of Trieste, INFN Trieste and A. Castoldi, Politecnico di Milano, presenting multi channel silicon counting devices for x-ray imaging with synchrotron radiation demonstrated that Italy in this field is fairly advanced and playing internationally a leading role. In the frame of the recent construction of the Australian Synchrotron Light source the Australian perspective were represented by T.F. Beveridge, Monash University and A.B. Rozenfeld, University of Wollongong. Industrial detector research and development were represented by C. Kenney, Molecular Biological Consortium, USA, S.G. An-

gello, Area Detector System Cooperation, USA and J. Hendrix, mar-research, Germany. The latter demonstrated an outstanding advanced large area amorphous selenium based imager for real-time crystallography.

M. Suzuki, Spring 8, Japan showed the use of multi channel YAP imagers in high energy x-ray applications and recent results of the first large area Si pixel detector for macromolecular crystallography were presented by C. Broenniman, Paul Scherrer Institute. Both detectors represent a bridge to neutron science since they were already used in both fields. G. Gorini, University di Milano Bicocca, Italy and B. Gebauer, Hahn Meitner Institute, Germany, demonstrated how similar are the concepts in neutron detection and x-ray detection. Developments of photon counting devices based on MCPs in combination with CMOS pixel chips for ground based astronomy are well suited for UV synchrotron radiation applications as shown by B. Mikulec, University of Geneva, Switzerland.

About 20 researcher of the former Soviet Union were supported by the INTAS grant no 0369 661 to participate the workshop which gave L. Shekhtman, Budker Institute for Nuclear Physics, Russia the possibility to report on his detector for dynamic studies of explosion and detonation waves with synchrotron radiation. As in all areas of research also detector development relies on young researchers. Therefore the organizers are grateful to the IA-SFS (Integrating Activity on Synchrotron and Free Electron Laser Science of the European sixth framework program) for the support of young researchers to participate this workshop. The workshop finished with a presentation of M. Bertolo, Sincrotrone Trieste, Italy about the funding opportunities with in the European Sixth frame work program and beyond which gave rise to stimulating discussions how to join forces for future detector developments for synchrotron radiation and neutron science.

Ralf Hendrik Menk
Sincrotrone Trieste

School of Neutron Scattering Francesco Paolo Ricci

21st September - 2nd October 2004 - Palau



Students and teachers in Palau

The goal of the various editions of the "School of Neutron Scattering Francesco Paolo Ricci" has been advanced training for young European researchers at post-graduate and postdoctoral level, typically between 25 and 30 years old. Its primary ob-

jective is to present the current methodology of static and dynamic neutron scattering techniques to scientists using scattering methods at large scale facilities. Based on the positive experience with the six previous editions (1994, 1996, 1998, 2000, 2002), this year's event was again organized at the Hotel "Capo d'Orso" located not far from Palau, a recreation centre in the Sardinia coast near La Maddalena. The School run from September 21st through October 2nd 2004. The school was attended by 28 students, while lectures were delivered by a total of 23 teachers. It provided a forum for learning and ex-



Nobel Laureate Prof. R.A. Marcus with some attendees.

changing experience in using complementary experimental techniques. The School was organised by the Associazione "F. P. Ricci" (web site <http://www>).



fis.uniroma3.it/sns_fpr/), with the financial support of the the Italian National Research Council, CNR, NMI3 - Integrated Infrastructure Initiative for Neutron Scattering and Muon Spectroscopy, the INFM (Udr Tor Vergata) and of four Italian Universities (Milano-Bicocca, Palermo, Roma Tor Vergata, and Roma Tre). Directors of the School were dr. F. Aliotta (CNR, Messina) and prof. R. Triolo (Università di Palermo). Central theme of the School was the application of Small Angle and Ultra Small Angle Scattering techniques. Leading scientists from Europe and from the United States drawn from Universities and National and International Laboratories have delivered a total of 55 lectures and 2 after dinner Nobel lectures, given by Prof. R. A. Marcus, 1992 Nobel Laureate. Prof. Marcus, a Chemist with great human characteristics coupled to an outstanding scientific curriculum, has captured the attention of the School attendees by strongly motivating them. One morning has been dedicated to the synergy between Experimental and Computational physics, and the complementarities of neutrons and X-rays has been highlighted. Finally a strong program of at least 20 hours of practical sessions has completed the training of the young attendees.

The program of the school has focused on the following areas:

- The fundamentals of the interaction of neutrons and X-rays with matter
- Neutron production and experimental instrumentation
- Theory and application of various neutron experimental techniques
- Correction and Analysis of experimental data collected at International Facilities

Subjects for lectures included: Interactions of X-rays and Neutrons with Matter. Neutron Generation and Detection. Neutron Instrumentation. Inelastic Scattering. Magnetic Scattering. Small Angle Scattering. Ultra Small Angle Scattering. Amorphous

Scattering. In summary, basic information on data interpretation, on the complementarity of the different types of radiation, as well as information on recent applications and developments were presented. The school was successful in providing a broader understanding of scattering methods and their application for resolving structural and dynamic problems. In this respect, the analysis of the answers of a questionnaire handed out to the participants for quality assessment, revealed a positive impact on future research activities of the attendees. In addition, on the afternoon on Friday September 24th two interesting events took place: Dr. Colin Carlile, Dr. P. Radaelli and dr. M. Agamalian, on behalf of Dr. I. Anderson, gave highlights on the **Millennium Program (ILL)**, on the **ISIS II target**, and on **SNS Project**, respectively. These presentations meant to upgrade information on the instrumentation which will be available in the near future.

A Mini Symposium on the application of atomic and nuclear techniques for **Conservation, Restoration and Preservation of Cultural Heritage**, took place. Local and Regional Authorities, together with experts and High Level Officials of Academic and Research Organizations participated. Archaeology and archaeometry are two emergent fields in materials science with an increasing demand of access to neutron and SR-based techniques. The purpose of the symposium was to discuss and explore the current and potential applications of synchrotron science to problems in archaeology and art conservation, bringing together key members of the neutron and synchrotron community and experts in the disciplines of Archaeology, Archaeological Science, Art Conservation and Materials Science. Speakers reported their latest research accomplishments, highlight ongoing projects, and catalyse new interactions between these fields. The was to help identify problems in Eu-

ropean Archaeology that can benefit from the application of atomic and nuclear techniques. A series of 15 minutes presentations covering a wide spectrum of techniques used in the field of Conservation, Restoration and Preservation of Cultural Heritage solicited the interest of the audience for almost four hours. Organizers of the Symposium were C. Andreani and G. Cinque of the University of Rome Tor Vergata, G. Gorini and M. Martini of University of Milano-Bicocca, A. Granelli of the University of Rome "La Sapienza" & LUISS, and V. Coda Nunziante of CNR, Rome. Professor R. Viale, President of "Fondazione Rosselli" and Chairman of the Symposium, closed the Symposium by highlighting the fundamental role that Italy could have in the field of Conservation, Restoration and Preservation of Cultural Heritage, thanks to its unique collection of works of art. His final remark "Italy has a wealth of cultural heritage unique in the world. Technological innovation in the area of Conservation, Restoration and Preservation of Cultural Heritage has a great strategic interest and deserves attention from the leading political forces" underlined the great appreciation for the topics discussed. In addition, dr. Colin Carlile, Editor of the Journal of Neutron Research, in appreciation for the quality of the presentations, has suggested to collect all the presentations in a special issue of JNR.

Professor Rudolph A. Marcus in his after dinner Nobel Conference on September 30th has summarized some of his latest work, connected with some of the topics discussed in the School. Most important, has given useful suggestions to the attendees and has personally signed and presented the Certificate of Attendance. At the end, attendees have been given a form and have been asked to fill it with their grading of the teaching and support activities.

R. Triolo