

**PROGRAMME OF MEETINGS – 1989**  
**NATO INTERNATIONAL SCIENTIFIC EXCHANGE PROGRAMME**  
**ENGINEERING, MATERIALS AND SYSTEMS SCIENCES**

Advanced Study Institutes (ASIs) are tutorial courses of 10 days dealing with new and important topics for up to 100 research scientists and students. Pre- and post-doctoral researchers are invited to participate in these institutes. Some limited financial support is available for deserving participants.

Advanced Research Workshops (ARWs) are working meetings lasting 4–5 days which enable a restricted group of invited experts to review the state of the art and formulate recommendations for future research.

Interested scientists should contact the directors of the meetings directly.

**NEURO COMPUTING: ALGORITHMS, ARCHITECTURES AND APPLICATIONS**  
 ARW – Les Arcs (France), February 1989  
 Contact: Dr. F. Fogelman  
 Ecole Hautes Etudes Informatiques, Université de Paris 5, 45 Rue des Saints Peres  
 F-75006 Paris, France

**DIFFUSION IN MATERIALS**  
 ASI – Aussois (France), March 1989  
 Contact: Professor A.L. Laskar  
 Dept. of Physics and Astronomy, Clemson University,  
 Clemson SC 29631, U.S.A.

**VIBRATION AND WEAR DAMAGE IN HIGH SPEED ROTATING MACHINERY**  
 ASI – Alvor (Portugal), April 1989  
 Contact: Professor J. Montalvao et Silva  
 Cemul/Ist, Technical University of Lisbon, Ava. Rovisco Pais  
 P-1096 Lisbon CODEX, Portugal

**PHASE TRANSITIONS IN SOFT CONDENSED MATTER**  
 ASI – Geilo (Norway), April 1989  
 Contact: Professor T. Riste  
 Institute for Energy Technology, P.O. Box 40 N-2007 Kjeller, Norway

**STRUCTURES AND PROPERTIES OF DISLOCATIONS IN SEMICONDUCTORS**  
 ARW – Oxford (U.K.), April 1989  
 Contact: Professor Sir Peter Hirsch  
 Dept. of Metallurgy & Materials Sc., University of Oxford, Parks Road  
 Oxford OX1 3PH, U.K.

**ION BEAM MODIFICATION AND PROCESSING IN HIGH-TC SUPERCONDUCTORS: PHYSICS AND DEVICES**  
 ARW – Lovell Mill (U.K.), April 1989  
 Contact: Dr. C.A. English  
 Materials Development Division, Harwell

Laboratory, B 393  
 Harwell Oxfordshire OX11 0RA, U.K.

**BASIC CONCEPTS AND APPLICATIONS OF SCANNING TUNNELING MICROSCOPY (STM) AND RELATED TECHNIQUES**  
 ASI – Erice (Italy), April 1989  
 Contact: Dr. H. Rohrer  
 Zurich Research Laboratory, IBM Research Div.,  
 CH-8803 Ruschlikon, Switzerland

**SPECTROSCOPY OF SEMICONDUCTOR MICROSTRUCTURES**  
 ARW – Venice (Italy), May 1989  
 Contact: Dr. G. Fasol  
 Cavendish Laboratory, Madingley Road  
 Cambridge CB3 0HE, U.K.

**OPTICAL SOURCES, LASERS AND SYNCHROTRON RADIATION – BIOLOGICAL EFFECTS AND HAZARD POTENTIAL**  
 ASI – Erice (Italy), May 1989  
 Contact: Professor A. Rindi  
 Sincrotrone Trieste, Padriciano 99  
 I-34012 Trieste, Italy

**CARBON FIBRES AND FILAMENTS**  
 ASI – Alvor (Portugal), May 1989  
 Contact: Professor J.L.C.C. Figueiredo  
 Dept. of Chemical Engineering, Faculdade de Engenharia,  
 P-4099 Porto Codex, Portugal

**WATER AND KINEMATICS**  
 ARW – Molde (Norway), May 1989  
 Contact: Professor A. Torum  
 SINTEF/nhl, N T H,  
 N-7034 Trondheim, Norway

**HETEROGENEOUS MATERIALS: INTERACTION BETWEEN DISORDER AND BEHAVIOUR**  
 ASI – Cargese (France), May 1989  
 Contact: Professor J.-C. Charmet  
 ESPCI LHMP, 10 Rue Vauquelin

F-75231 Paris Cedex 05, France

**MULTISENSOR FUSION FOR COMPUTER VISION**

ARW – Italy, June 1989  
 Contact: Dr. J.K. Aggarwal  
 Computer & Vision Research Center, The University of Texas at Austin, College of Engineering ENS 519  
 Austin TX 78712, U.S.A.

**SEMICONDUCTOR DEVICE RELIABILITY**

ARW – Crete (Greece), June 1989  
 Contact: Dr. A. Christou  
 Physics Dept., University of Crete, Box 470  
 Heraklion (Crete), Greece

**GUIDED DISCOVERY TUTORING**

ARW – Hawaii (U.S.A.), June 1989  
 Contact: Dr. M. Elsom-Cook  
 I.E.T., Open University, Walton Hall  
 Milton Keynes MK7 6AA, U.K.

**LOWER DIMENSIONAL SYSTEMS AND MOLECULAR DEVICES**

ASI – Poros Island (Greece), June 1989  
 Contact: Professor R.M. Metzger  
 Department of Chemistry, University of Alabama,  
 Tuscaloosa AL 35487, U.S.A.

**STOCHASTIC HYDROLOGY AND ITS USE IN WATER RESOURCES SYSTEMS SIMULATION AND OPTIMIZATION**

ASI – Nerja (Spain), June 1989  
 Contact: Professor J.B. Marco  
 Universidad Politecnica, P.O. Box 22012  
 E-46080 Valencia, Spain

**OPTIMISATION AND DECISION SUPPORT SYSTEMS IN CIVIL ENGINEERING**

ASI – Edinburgh (U.K.), June 1989  
 Contact: Dr. B.H.V. Topping  
 Department of Civil Engineering, Heriot-Watt University, Riccarton  
 Edinburgh EH14 4AS, U.K.

**TOPOLOGICAL NETWORK DESIGN: ANALYSIS AND SYNTHESIS**

ARW – Skodsborg (Denmark), June 1989  
 Contact: Professor P. Winter  
 Inst. of Datalogy, University of Copenhagen,  
 Universitetsparken  
 DK-2100 Copenhagen, Denmark

**ROBOTS AND BIOLOGICAL SYSTEMS**

ARW – Il Ciocco (Italy), June 1989  
 Contact: Professor P. Dario  
 Scuola Superiore "S. Anna", Via Carducci 40  
 I-56100 Pisa, Italy

**ELECTROCHEMICAL AND OPTICAL TECHNIQUES FOR THE STUDY AND MONITORING OF METALLIC CORROSION**

ASI – Sintra (Portugal), July 1989  
 Contact: Professor M.G.S. Ferreira  
 Dpto. de Engenharia Quimica, Instituto Superior Tecnico, Av. Rovisco Pais  
 P-1096 Lisboa Codex, Portugal

**TRANSPORT PROCESSES IN POROUS MEDIA**

ASI – Pullman/WA (U.S.A.), July 1989  
 Contact: Professor Y. Corapcioglu  
 Dept. of Civil Engineering, Washington State University,  
 Pullman WA 99164-3001, U.S.A.

**ACTIVE PERCEPTION AND ROBOT VISION**

ASI – Maratea (Italy), July 1989  
 Contact: Dr. A.K. Sood  
 Computer Science Department, George Mason University, 4400 University Drive  
 Fairfax VA 22030, U.S.A.

**RECENT ADVANCES IN FOURIER ANALYSIS AND ITS APPLICATIONS**

ASI – Il Ciocco (Italy), July 1989  
 Contact: Dr. J.S. Byrnes  
 Prometheus Inc., 103 Mansfield Street  
 Sharon MA 02067, U.S.A.

**NOVEL SILICON BASED HETEROSTRUCTURES**

ASI – Boca Raton/FL (U.S.A.), July 1989  
 Contact: Dr. R.A. Levy  
 Member of the Technical Staff, AT & T Bell Laboratories, 600 Mountain Avenue  
 Murray Hill NJ 07974, U.S.A.

**THE PHYSICS AND APPLICATIONS OF HIGH POWER HOLLOW ELECTRODE GLOW SWITCHES**

ARW – Lillehammer (Norway), July 1989  
 Contact: Professor M.A. Gundersen  
 Electrical Eng. & Electrophys. Dept, Univ. of Southern California,  
 Los Angeles 90089-0484, U.S.A.

**DESIGNING HYPERTEXT FOR LEARNING**

ARW – Jutland (Denmark), July 1989  
 Contact: Dr. D.H. Jonassen  
 Instructional Technology, University of Colorado,  
 1200 Larimer St./ Box 106  
 Denver CO 80204, U.S.A.

**INFORMATION PROCESSING OF CHEMICAL SENSORY STIMULI IN BIOLOGICAL AND ARTIFICIAL SYSTEMS**

ARW – Gottingen (Germany), July 1989  
 Contact: Dr. D. Schild  
 Physiological Institute, University of Gottingen,  
 Humboldtallee 23  
 D-34 Gottingen, Germany

**REAL-TIME INTEGRATION METHODS FOR MECHANICAL SYSTEM SIMULATION**

ARW – Snowbird/UT (U.S.A.), August 1989  
 Contact: Dr. R.C. Deyo

Evans & Sutherland Computer Co. Inc, 580  
Arapeen Dr.  
Salt lake City UT 84108, U.S.A.

**HIGH TEMPERATURE SUPERCONDUCTORS –  
PHYSICS AND MATERIALS**

ASI – Bad Windsheim (Germany), August 1989  
Contact: Dr. R. Kossowsky  
Engineering Materials Department, Pennsylvania  
State University, P.O. Box 30  
State College PA 16804, U.S.A.

**MAPPING AND SPATIAL MODELLING FOR  
NAVIGATION**

ARW – Denmark, August 1989  
Contact: Professor L.F. Pau  
Bldg. 348/EMI, Technical University of Denmark,  
DK-2800 Lyngby, Denmark

**TRADITIONAL AND NON-TRADITIONAL  
ROBOTIC SENSORS**

ARW – Maratea (Italy), August 1989  
Contact: Professor Th.C. Henderson  
Dept. of Computer Science, University of Utah,  
Salt Lake City Utah 84112, U.S.A.

**COMPUTER-SUPPORTED COLLABORATIVE  
LEARNING**

ARW – Florida (U.S.A.), September 1989  
Contact: Dr. C. O'Malley  
Inst. of Educational Technology, The Open  
University, Walton Hall  
Milton Keynes MK7 6AA, U.K.

**MULTI-MEDIA INTERFACE DESIGN**

ARW – Bermuda (U.S.A.), September 1989  
Contact: Dr. M. Baker  
C.I.T.E., Open University, Walton Hall  
Milton Keynes MK7 6AA, U.K.

**PATTERNS, DEFECTS AND MATERIALS  
INSTABILITIES**

ASI – Cargese (France), September 1989  
Contact: Dr. D. Walgraef  
Service de Chimie Physique, Université Libre, Bd.  
du Triomphe – C.P. 231  
B-1050 Bruxelles, Belgique

**MEMBRANE FILTRATION: THEORY AND  
APPLICATIONS**

ASI – Maratea (Italy), September 1989  
Contact: Professor A. Huyghebaert  
Dept. of Food Technology Chemistry, University  
of Gent, Coupure Links 563  
B-9000 Gent, Belgium

**OLEFIN METATHESIS AND POLYMERIZATION**

**CATALYSTS: SYNTHESIS, MECHANISM AND  
UTILIZATION**

ASI – Kemer (Turkey), September 1989  
Contact: Professor Y. Imanoglu  
Dept. of Chemistry, Hacettepe University,  
Beytepe  
Ankara 06532, Turkey

**CONJUGATED POLYMERIC MATERIALS:  
OPPORTUNITIES IN ELECTRONICS,  
OPTO-ELECTRONICS AND MOLECULAR  
ELECTRONICS**

ARW – Mons (Belgium), September 1989  
Contact: Professor J-L. Bredas  
Chimie des Matériaux Nouveaux, Université de  
l'Etat, Avenue Maistriau 21  
B-7000 Mons, Belgium

**ELECTRONIC PROPERTIES OF MULTILAYERS  
AND LOW DIMENSIONAL SEMICONDUCTOR  
STRUCTURES**

ASI – Chateau de Bonas (France), September  
1989  
Contact: Professor L. Eaves  
Physics Department, University of Nottingham,  
Nottingham NG7 2RD, U.K.

**THE PHYSICS AND CHEMISTRY OF  
CARBIDES, NITRIDES AND BORIDES**

ARW – Manchester (U.K.), September 1989  
Contact: Dr. R. Freer  
Material Science Centre, University of  
Manchester (UMIST), Grosvenor Street  
Manchester M1 7HS, U.K.

**KINETICS OF ORDERING AND GROWTH AT  
SURFACES**

ARW – Sesimbra (Portugal), September 1989  
Contact: Professor M.G. Lagally  
Metallurgical Engineering, University of  
Wisconsin-Madison, 1509 University Avenue  
Madison WI 53706, U.S.A.

**MODELLING OF BIO-MEDICAL PROCESSES  
AND BLOOD CIRCULATION**

ARW – Cargese (France), October 1989  
Contact: Professor F. Mosora  
Inst. de Physique (B 5, Université de Liege,  
B-4000 Sart-Tilman, Belgium

**SENSORY SYSTEMS FOR ROBOTIC CONTROL  
– CLOSING WORKSHOP**

ARW – Il Ciocco (Italy), October 1989  
Contact: Professor A. Pugh  
Dept. of Electronic Engineering, University of  
Hull,  
Hull HU6 7RX, U.K.

Established scientists interested in organizing either an Advanced Research Workshop or an Advanced Study Institute should request information and application forms from the NATO Science Division, B-1110 Brussels, Belgium (TEL.(0032)-2-728.41.11).

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