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MEMS

Keep this leaf folded and tick the appropriate box according to the location of your convenience.

Name

Company

Address

Function

Country

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Tel

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TO:

FSRM
CH-2000 Neuchâtel
Fax +41/ 38 24 71 45

COURSE PROGRAMME 1993

MEMS

MEMS (**M**icro **E**lectro **M**echanical **S**ystems) are characterized by dimensions ranging from millimetres to fractions of micrometre. They integrate many functions such as sensors, electronic circuits and actuators in a small volume.
These extremly miniaturized systems are manufactured in a highly parallel manner (batch process) and can therefore reduce not only the size, but also the price of the product they are included in.

MEMS areas of application:

Measuring and **process control** systems need an ever increasing number of microsystems to achieve a higher rate of automation. **Medical** instrumentation, **watch** and **aerospace** industry are interested in the miniaturization microsystems can offer.
The low manufacturing cost resulting from batch processes is of great importance for the **automobile** and **consumer** industry.

COMETT

COMETT (**COM**munity programme for **E**ducation and **T**raining in **T**echnology) started in 1987 to promote cooperation between universities and industry regarding training in technology.

Comett activities are carried out by a network of 205 sectoral and regional UETPs University Enterprise Training Partnerships).These include courses, students and personnel exchanges.

UETP MEMS

The Swiss Foundation for Research in Microtechnology (FSRM) created the project UETP-MEMS in 1992 as a sectoral UETP for training in Micro Electro Mechanical Systems.
The general purpose of UETP-MEMS is to increase the application of microsystems in the industry by developing short, specific courses on the subject, and by supporting personnel exchanges between industry and universities, generally between users and suppliers of MEMS.

For more information about the possibilities offered by UETP-MEMS contact:

Philippe Fischer, FSRM, CH-2000 Neuchâtel, Tel:++41 38 24 52 00, Fax: ++41 38 24 7145.

COURSE PROGRAMME 1993:

The courses offered in the 1993 programme concern specific topics of MEMS. They are short, application oriented and aimed at R&D engineers and executives.They have been prepared during the second half of 1992 by following partners of UETP-MEMS:

CEM GmbH (D), Cetehor (F), ETH Zürich, Physical Electronic Laboratory (CH), Fondation Suisse pour la Recherche en Microtechnique (CH), Hahn-Schickard-Institut für Mikro- und Informationstechnik (D), HMT Microelectronic AG (CH), LPMO CNRS (F), Neu-Technikum Buchs (CH), Sextant Avionique (F), STS Sensor Technik Sirnach (CH), Université de Besançon, Laboratoire de mécanique (F), Université de Neuchâtel, Institut de Microtechnique (CH), University of Twente, MESA Institute (NL)

Course registration:

Please tick the appropriate boxes and fax or send the registration form to UETP-MEMS at least 20 days before the first course you register for.

We will confirm your registration by sending you an information package that includes accommodation and the exact location of the course(s).

FSRM

UETP MEMS

UETP MEMS

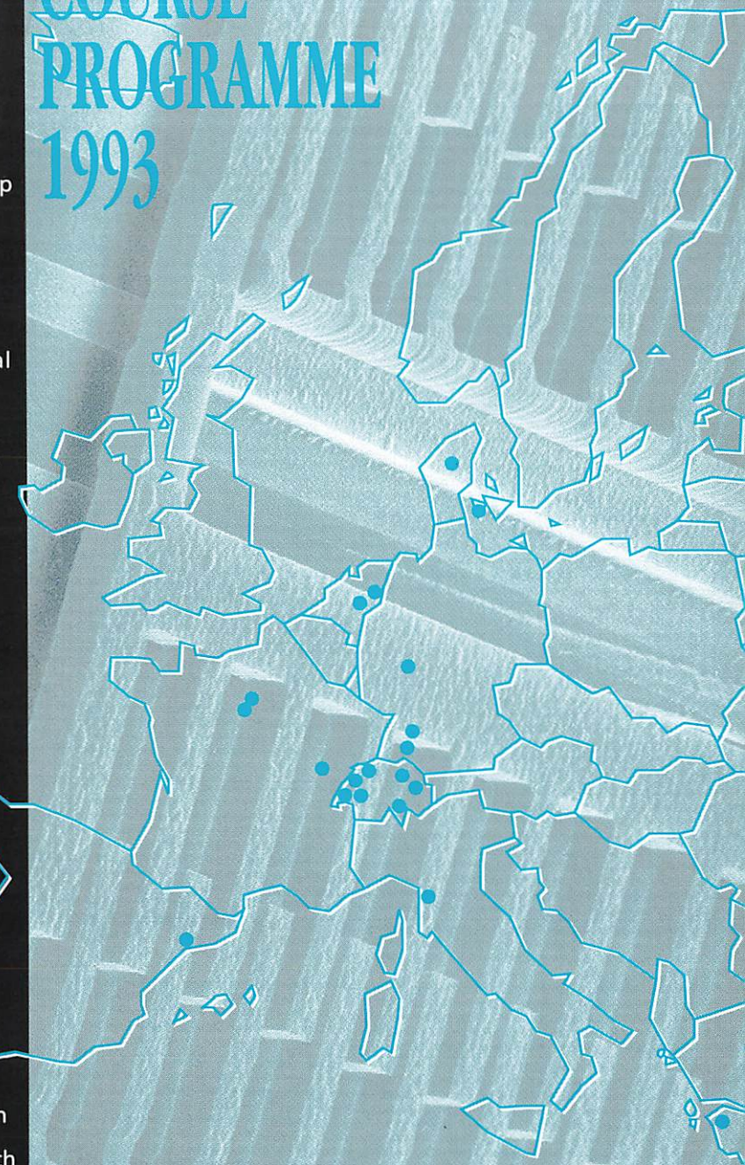
University Enterprise Training Partnership for Micro Electro Mechanical Systems

A project run under the EC COMETT Programme

Swiss Foundation for Research in Microtechnology

FSRM

COURSE PROGRAMME 1993



UETP MEMS

PROGRAMME 1993

Course 1: Micro Actuators

Valves and pumps, movable mirrors and switches serve as guideline through the course and give a good comparison of different actuating principles, their characteristics, performances and limitations, as well as the fabrication technology. Emphasis will be placed on general scaling rules leading to the micro-world. New trends in the domain of micromotors and micromanipulators will also be presented.

Duration: 2 days. Fee: 600 ecus.

Course 2: Etching Technology

Etching is very important for micro mechanical devices. The course shows the various methods used. It points out when and why dry etching is preferred to wet etching, what method needs what equipment and the kind of structures and surface quality one can obtain. The course also emphasizes surface micromachining, also called sacrificial layer method.

Duration: 2 days. Fee: 600 ecus.

Course 3: Hands on MEMS

Starting right after the Etching Technology course, it gives R&D engineers and executives the possibility to work with the equipment in a clean room and get a real, practical idea of MEMS technology. All participants can take a self made microactuator home.

Number of participants is limited to 10.
Duration: 3 days. Fee: 1200 ecus.

Course 4: Packaging

Packaging is the most difficult issue in MEMS technology. The techniques used differ from microelectronics packaging as sensors and actuators have to be in touch with the environment. There is little expertise in the domain and the preparation of the course required to call on mostly industrial know how. Packaging technique does not only depend on the device but also on the application. Medical, industrial, aircraft and automotive examples are covered in the course.

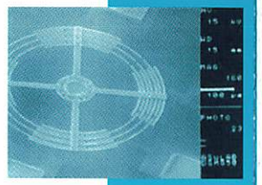
Duration: 2 days. Fee: 600 ecus.

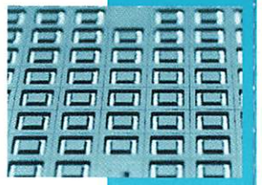
Course 5: CAD Tools for MEMS

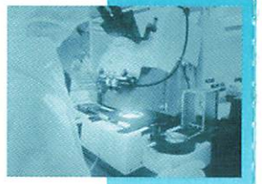
Available tools for layout design, process simulation and device simulation are described. Emphasis is laid on the interpretation and optimization of simulation programs. Research work undertaken to provide links between all levels of simulation are presented. Exercises on workstations allow the participants to use commercially available tools for the simulation of simple micromachined structures.

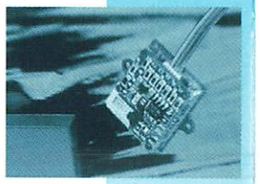
Duration: 3 days. Fee: 1200 ecus.

Dates and locations	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
CH NEUCHÂTEL		17/18										
NL TWENTE			10/11									
F BESANÇON					26/27							
D VS-VILLINGEN									1/2			
I PISA										19/20		
CH NEUCHÂTEL			8/9									
NL TWENTE			29/30									
F BESANÇON						14/15						
D VS-VILLINGEN										4/5		
CH NEUCHÂTEL			10/12									
NL TWENTE			31/2									
F BESANÇON						16/18						
D VS-VILLINGEN										6/8		
CH ZÜRICH				20/22								
NL TWENTE					11/12							
F BESANÇON										26/27		
D DRESDEN						22/23						
CH ZÜRICH					4/6							
NL TWENTE						22/24						
F BESANÇON									5/7			
D VS-VILLINGEN										9/11		









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2000 Neuchâtel
Switzerland

UETP MEMS

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