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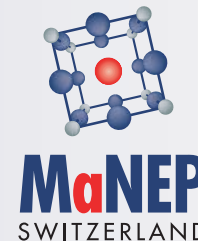
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The programme of National Centres of Competence in Research NCCR aims to encourage long-term research projects into areas of strategic importance for the future of Swiss science, economics and society.

A network of 250 researchers

MaNEP stands for **Materials with Novel Electronic Properties**.

The Centre studies electronic materials of the future with extraordinary physical properties. While these materials are very promising, little is known about them. Their potential is great enough to meet the challenges set by new technologies in the ongoing quest for miniaturisation, speed and performance.

MaNEP brings together more than **250 researchers in Switzerland** belonging to universities, institutes and industrial labs.

MaNEP is one of the National Centres of Competence in Research (NCCR) first established in 2001 by the Swiss National Fund for Scientific Research for a period of 12 years.

MaNEP members

Universities and institutes

- University of Geneva (home institution)
- University of Neuchâtel
- University of Fribourg
- University of Zurich
- University of Bern
- EPFL – Swiss Federal Institute of Technology Lausanne
- ETHZ – Swiss Federal Institute of Technology Zurich
- PSI – Paul Scherrer Institute, Villigen (AG)
- EMPA – Swiss Federal Laboratory for Materials Testing and Research EMPA



Partners in industry

- ABB**, Baden (AG)
- Bruker Biospin**, Fällanden (ZH)
- MecSens**, Geneva
- Metrolab**, Geneva
- PHASIS**, Geneva
- SwissNeutronics**, Klingnau (AG)

MaNEP's 3 core missions

Understand and manufacture the materials of the future

Conventional materials used in electronics – such as copper and silicon – are now reaching their physical limits.

Superconductors, ferroelectrics, piezoelectrics, insulators and carbon nanotubes are the components of the future. By harnessing their potential, we could conceivably develop:



memories capable of storing 1,000 encyclopaedias on a single CD-Rom



even more accurate MRI scanners for medical imaging



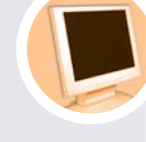
smaller, more powerful and more environmentally friendly power stations



silent, ultrafast magnetic levitation transport



very-high-frequency filters for mobile telephones



more efficient flat screens

Forging links with industry...

... Working with industry paves the way for practical applications of MaNEP research. Several partnerships have already been established, others are under way. Phasis – A MaNEP spin-off called Phasis was also founded in 2004 (www.phasis.ch).



Training future generations and promoting women



MaNEP is actively doing its part, hosting more than 70 doctoral students and organising **Summer Schools** sessions. Other projects, including a doctoral school, are under study.

This is one area of studies where women are woefully underrepresented. In a bid to encourage more women to pursue research, MaNEP sets up summer internships for 3rd and 4th year female physics since 2004, giving them a chance to work in one of its 28 research teams.