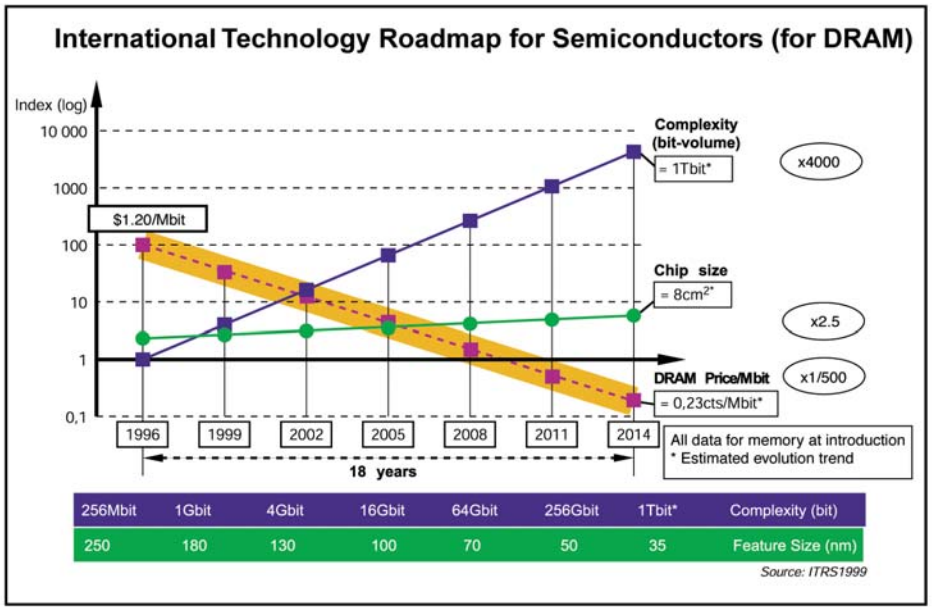
accuracy of the method is similar to that of microcontact printing methods.

Nano-wires are expected to be promising candidates for building post-CMOS nano-transistors. The process could also be used to produce arrays of biofunctional beads that can identify certain cells or markers in the body, such as in tests for cancer tests or to detect heart attack markers.

Nanoparticles interact with light, so the technology could be used in optoelectronic devices. For example, optical materials with new properties could be created, as if the printed structures are as small as the wavelength of the light shining on them, they could form lenses that band light inside future optical chips.

The method is considered to be relatively mature for its optical and biotechnological applications, but for electronics applications the long range accuracy has yet to be optimised before industrial solutions can be realistically considered.

EUROPE CHOOSES ITS NEXT COLLABORATIVE RESEARCH PROGRAMME



A new program named CATRENE (Cluster for Application and Technology Research in Europe on NanoElectronics) will follow the extremely successful MEDEA+ program, which concludes in 2008. The new program is a public-private partnership whose object is continued development of European expertise in semiconductor technology and applications. It will build on the success of MEDEA+ and earlier programs that lifted the former floundering European industry into a truly global competitive position, by benefiting from international collaboration across Europe. CATRENE will involve collaboration by industrial companies of all sizes with research institutions and universities.

The program will address healthcare provision, energy, transport, entertainment and security by projects directed at these sectors in which microelectronics will play an increasingly important part. It is believed changes such as those due to ageing populations, rising healthcare and energy prices will present both a challenge and an opportunity for the industry to address the new markets.

Jozef Cornu, chairman of MEDEA+ and designated chairman of CATRENE, said: "Nanoelectronics will offer enormous opportunities to those who are the first to master and bring to market new technologies and applications. We believe that CATRENE will play a vital role in helping Europe's microelectronics industry to go from strength to strength."

MEDEA+ and previous programs have been divided into technology and applications sectors, but these are now increasingly converging. CATRENE will therefore focus on large identified application markets, deriving from these a roadmap of the required technologies. Its key technological goals include maintaining and increasing European strength in IP across the whole electronics supply chain and its leadership in lithography and SOI materials. It must also ensure that European companies are among world leaders in advanced semiconductor technologies that allow entire systems to be integrated into a single package and strengthen expertise in applying semiconductor process technology to efficient design.

CATRENE is a 4-year program, starting on 1 January 2008, which is extendable for another 4 years. Resources required will be some 4,000 person-years each year, corresponding to about $8.5bn for the extended program. This may be compared with the 20,000 person-years of the 77 MEDEA+ projects.

The MEDEA+ program (2001–2008) helped the European industry to become a world leader in such sectors as automotive electronics, smart card technology and image sensing and to obtain some 10% of the world markets.