

N362. The Brave New World Of Micro Robotics Is Here

The Europeans and Japanese are working separately on micro robotics. Seiko, the famous watch maker in Japan is working in this area. There is a European project on developing micro robotic devices at the Karlsruhe Reserach Center in Germany. Some of the Japanese devices are about the size of a bug. They can crawl, they have a micro motor for propulsion and they have various kinds of sensors and micro tools which are used as effectors.

At Karlsruhe they are developing a host of devices for various purposes: These include microstructured X-ray intensifying screens for radiodiagnosics, thin films for actuator applications in microsystems, optochemical microsensors for environmental analysis, fiber-optic sensors for in-situ analysis of pollutants and there is a project to develop an electronic nose to smell environmental hazards in the air.

Soon many nuclear applications will emerge. One can see micro robotics devices which not only crawl through pipes but actually go down cracks to carry out precise inspections. One may extrapolate further to imagine other micro robotic devices then going in to remediate the crack microstrucure. There are many other potential applications that could save radiation exposures either by significantly enhancing component reliability of nuclear power plants or by carrying out precise inspections in highly radioactive environments.

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