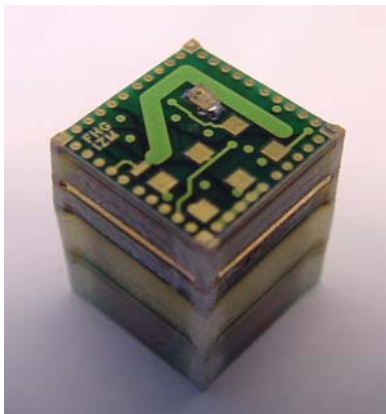




# Wireless Sensor Node for Environment Screening

The progress in system integration technologies in the last years allows the technical realization of new system concepts for highly miniaturized sensor nodes which are linked in a wireless network. These so called “**e Grains**” are able to receive, process, store and send data in an wireless network environment. The basic elements of autonomous “**e Grain™**” sensor nodes are sensor, data processing unit (microprocessor and memory), wireless communication interface and integrated power supply. The sensor node transmits the data directly to other network devices or to any wireless receiver.

The innovative “**e-Grain™**” concept represents an entirely new challenge and requires a synergy of individual technologies e.g. design, components, system integration techniques and networking. In cooperation with partners the Fraunhofer IZM (Germany) develops new integration technologies on wafer and substrate level to achieve a high degree of miniaturization.



Based on advanced printed circuit board and assembly technologies a complete **temperature sensor node** was realized in a volume of 1 cm<sup>3</sup>.

## Technical Specification:

- digital temperature sensor (TSic™ from IST)
- transmitter frequency: 2.4 GHz
- operating voltage: 3.6 V
- operating time: 500 hours
- dimension: 10 mm x 10 mm x 10 mm

## Applications:

- sensor networks for environment screening
- quality control
- logistic
- medical and health care
- security and safety
- consumer and home

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INNOVATIVE SENSOR TECHNOLOGY

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