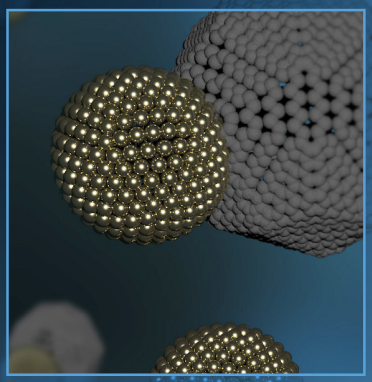

Versatile magnetic/optical device for advanced nanotherapies

ICN2 researchers have developed a low-cost device that allows the simultaneous or sequential induction of both magnetic and optical hyperthermia. For use in local treatments, this is the first time these two heat induction mechanisms have been combined in a single device.

This patented technology can also be used to control and monitor local temperature and drug release in real time, and provide detailed characterisation of new candidate nanostructures for use in magnetic/optical based nanotherapies.

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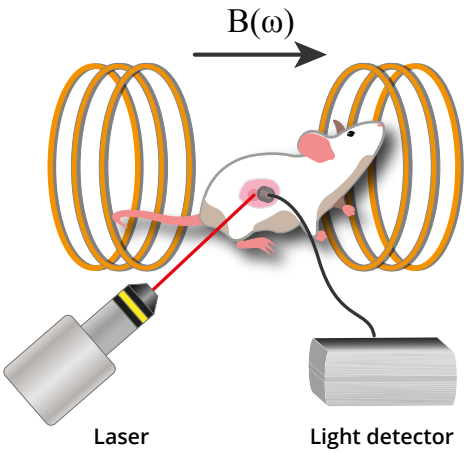
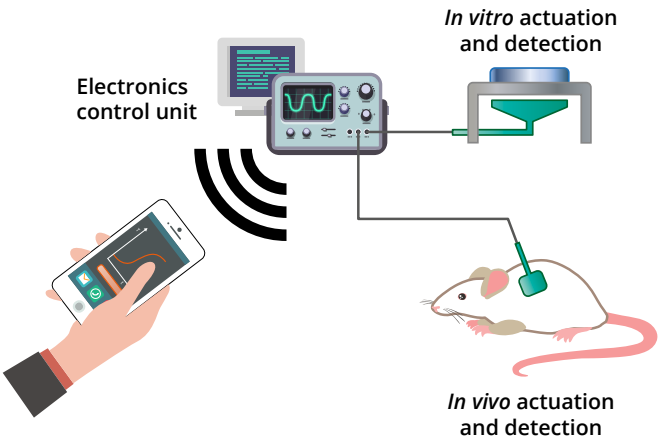
APPLICATIONS

- ✔ Combined magnetic/optical hyperthermia treatment
- ✔ Temperature-controlled drug release and monitoring
- ✔ Nanostructure characterisation
- ✔ Non-invasive nanothermometry





Advanced nanotherapies require sophisticated actuation and control methods. This device sees magnetic and optical heat induction mechanisms brought together in single device that allows their sequential and simultaneous application. It can find additional uses in nanothermometry for the non-invasive monitoring of local temperature variations in real time, and in the controlled release of drugs from nanostructures.

The technology further provides a solution to the ongoing search for new nanostructures suitable for advanced nanotherapies, allowing detailed magneto-optical characterisation of candidate structures.

Main advantages

- Full control over two heat induction mechanisms in a single device
- Real-time monitoring and control of local temperature and drug release
- Non-invasive thermometry for hard-to-reach areas
- More precise, more easily reproducible nanotherapies