

Magnetic field focusing

Improved inductive energy transfer for induction hobs

Invention

Induction cookers are becoming more and more popular than conventional hobs. The ceramic plate itself does not heat up, and induction hobs require less energy. They reduce electricity costs by 20 to 30 percent. The amount of energy savings depends heavily on the inner construction of the hob and the quality of the magnetic coupling. An invention by the Bielefeld University of Applied Sciences and Arts improves temperature distribution by improving magnetic coupling. A specially shaped ferrite disk is installed underneath the coil generating the magnetic field, guiding the

magnetic field so that inductive magnetic energy transfer is improved and the temperature distribution becomes more homogeneous. This makes inductive heaters and hobs more efficient and economical.

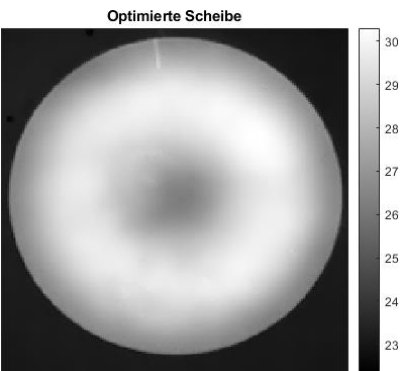
Commercial Opportunities

The market for integrated induction hobs was estimated to be \$17.59 billion in 2022 and is expected to reach \$22.11 billion by 2030, an annual growth of 3.2% from 2023 to 2030. Two key selling points for induction hobs are faster cooking speed and less energy required than for conventional ceramic hobs. The Bielefeld University of Applied Sciences and Arts invention will greatly improve both.

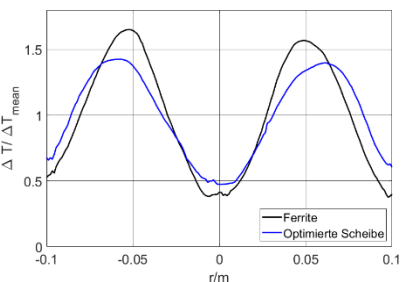
Current Status

Prototypes and various laboratory samples have been created and measured at Bielefeld University of Applied Sciences and Arts, demonstrating functional capability. An application has been filed with the DPMA and for a European patent. On behalf of the Bielefeld University of Applied Sciences and Arts, we are offering the technology for refinement and for commercial licenses

An invention from the Bielefeld University of Applied Sciences and Arts.



Thermal image of an optimized ferrite disk showing homogenized heat distribution



Comparison measurement with an optimized ferrite disk

Competitive Advantages

- Energy saving
- Homogeneous temperature distribution
- Magnetic field focusing

Technology Readiness Level

1 2 3 4 5 6 7 8 9

Experimental proof of concept

Industries

- Energy technology
- Electrical engineering

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