

Physikalisches Kolloquium



Thursday, 03.11.2022, 16:15, HS 100

In presence

Prof. Dr. rer. nat. Clemens Hoffmann, Universität Kassel,
FG Integrierte Energiesysteme:

Zeitenwende - Wärmewende

Abstract

The provision of space heating and hot water is responsible for a significant share of the overall CO₂-emission. Since the early days of mankind heat supply is based on the combustion of chemical energy carriers, predominantly carbon and carbon hydrates. During the last 50 years in Germany and elsewhere these come mostly in the form of oil and gas. Apart from the CO₂-problem there is hardly any societal awareness of the equally unacceptable annihilation of exergy which is inherent in the combustion of chemical energy carriers.

Starting from the second law of thermodynamics it will be shown in this talk, that a completely different technological approach is feasible for heat supply which not only avoids the exergy annihilation but also solves the CO₂-problem. Yet the technical realization of this approach calls for enormous infrastructures that presently exist only in small demonstrations. A more profound understanding of the underlying principles carried by a larger part of society can pave the way for creating these novel infrastructures and can lead the way out of the self-inflicted imprisonment of our singular dependency on oil and gas for low temperature heating.



Photo: Heat in November

All of you interested in physics are cordially invited!

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