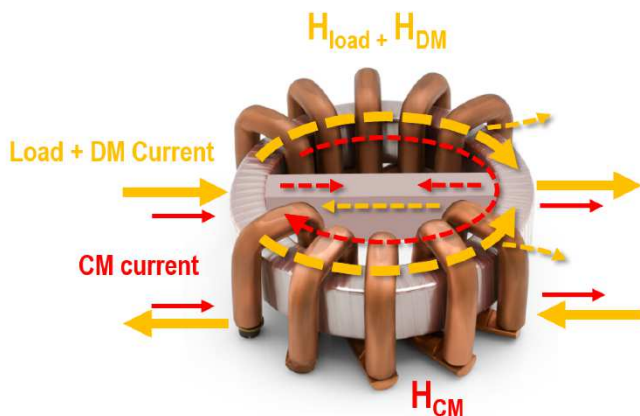


## COMBICHOKE: CMC and DMC combined

HANAU – Due to the fast switching of semiconductor components in power electronics, unwanted interference currents are caused. These interference currents consist of two main components: common mode currents (CM: common mode) flow in one direction through the application, while differential mode currents (DM: differential mode) flow in the direction of the load current.

While in some cases the leakage inductance of the CMC may already be sufficient, typically, a separate DM choke must be used. This increases the number of filter components and thus the EMC filter volume. If higher DM suppression is required but space is limited, VAC's patented COMBICHOKE technology can now help. Here, a core with low permeability is integrated into the CMC in a space-saving way, which increases the DM attenuation. COMBICHOKES are designed as a customized EMC solution.



This COMBICHOKE approach can even be combined with VACOCOIL winding optimization to achieve superior performance. The patented VACOCOIL design involves solid copper bars instead of the usual parallel windings of individual copper wires. This VACOCOIL winding design offers significantly improved attenuation at high frequencies ( $f > 1$  MHz) due to lower parasitic winding capacitances.

Main applications for COMBICHOKES are DC fast charging stations, PV inverters, wind generators, frequency converters and electric vehicles.

VACUUMSCHMELZE (VAC) is among the world's most highly innovative developers of magnetic materials, inductive components and other related products. With a global network of Sales and Field Application Engineers, VAC designs and manufactures tailor-made solutions for a wide variety of industries, comprising renewable energies, automotive, industrial automation installation technology, and aviation.