Soft magnetic composites (SMCs) market continues to be influenced by a range of factors, notably rising palpability of silicon ferrite in inductors, and increasing preference for soft magnetic materials in electronic components. Worldwide sales of soft magnetic materials exceeded US$ 18,000 Mn in 2018, according to a new Fact.MR study. Focus of utility equipment manufacturers on curtailing core losses, and leveraging renewable energy sources to meet growing power demand will significantly underpin demand for soft magnetic composites.

Silicon ferrite has become the cornerstone for manufacturers of inductors and capacitors, and has fast been replacing the traditionally employed metal magnetic materials. The study opines that over 50% of soft magnetic composites were manufactured using silicon ferrite. Key attributes of silicon ferrite such as robust chemical stability, magnetic permeability, and cost-effectiveness, has further led researchers to explore its application in RF devices, voltage regulation, and power delivery systems.

Ferrite silicone coated soft magnetic composites are also gaining popularity with growing application in transformer cores, inductance coils, resonant inductors, and synchronous electric motors. Electrical resistivity in ferrite minimizes eddy current losses, this is driving its use in high frequency transformer. In order to increase the resistivity of ferrite, manufacturers are adding silicon to further reduce eddy currents in transformer cores.

The demand for supermalloy is increasing among the components manufacturers for telephony, radio engineering and telemechanics instruments. With a focus on high initial permeability and low losses, supermalloy demand is likely to grow significantly in ultra-sensitive transformers, especially in ultra-sensitive magnetic amplifiers and pulse transformers.

APEJ to Spearhead Soft Magnetic Composites Market

Fact.MR study opines that APEJ is the most lucrative region for soft magnetic composites market, with revenues exceeding US$ 5,000 million in 2018. APEJ is emerging as a vast electrical and electronics hub and growing automotive industry in the region is driving demand for cost-effective soft magnetic composites.

Soft magnetic composites manufacturers are focusing on increasing demand for high performance materials with lightweight. With the rise in energy consumption, China and India are moving towards using new transformers. Countries are also increasingly replacing old transformers in order to improve grid reliability. China is also emerging as the largest soft magnetic composites producer owing to the vast availability of raw materials, skilled labor force, and low cost of the product.

Low power motors and electrical micrometers are finding wide application in robotics, home and office apparatus, and automation in the APEJ region. This is driving demand for soft magnetic composites to low eddy current loss and design new electrical machines for high frequency applications. Growing demand for electrical appliances such as compressor, pumps, and fans is likely to trigger the growth of soft magnetic composites across APEJ region. Manufacturers in various industries are giving high preference to soft magnetic composites over traditional laminated core owing to the reduction in bearing current, no eddy current losses, and easy recyclability of the stator.

Motors to Remain a Key Application Area of Soft Magnetic Composites

Continued research on soft magnetic composites is resulting in the vast potential for AC and DC applications that improves magnetic induction of core materials. Electric motor manufacturers are focusing on offering efficient, simple and high performance motors using soft magnetic composites. According to the report by Fact.MR, the demand for soft magnetic composites for application in motors is projected to surpass US$ 6,000 million in 2018.

The United States Department of Energy (DOE) is funding research and development activities to develop energy efficient electric motors for diverse applications. New technologies are being developed including high-speed bearing designs, advanced magnetic materials. Majority of the developed countries are implementing Minimum Energy Performance Standards (MEPS). This is resulting in wide adoption of premium (IE3) and super premium (IE4) efficiency motors in these countries.

Motors of electric vehicles usually run up to 14,000 rpm creating a switching frequency above 1800 Hz, resulting in more eddy current losses. This is driving motor manufacturers for electric vehicles to shift from thin laminations to soft magnetic composites thereby minimizing high eddy current losses.

The Fact.MR report tracks the soft magnetic composites market for the forecast period 2018-2027. The soft magnetic composites market is expected to register CAGR of 6.7% between 2018 and 2027, according to the report.