

Modeling magnetism: Permanent magnets in energy applications

Abstract for inaugural lecture

Professor Rasmus Bjørk

Permanent magnets are critical components in energy applications such as magnetic refrigeration, electromagnetic harvesting and magnetic flywheels, but also in more common technologies like in electric motors, MRI scanners and wind turbines just to name a few.

Permanent magnets contain rare earth elements, which are already in short supply, and will be even more so with the increase in the standard of living around the globe. This makes magnets expensive and therefore they must be utilized as efficiently as possible, while at the same time providing the optimal magnetic field for the given application.

In his inaugural lecture Professor Rasmus Bjørk will give an overview of how permanent magnets are used in energy applications and his research journey on how to get permanent magnets to actually generate the magnetic field that one desires. This is of course best done with a modeling approach. Besides this, listeners present in the auditorium will get the opportunity to create their own magnetic field using permanent magnets.

