



The Magnetic Materials Group (MMG) is located in the [School of Metallurgy and Materials \(/schools/metallurgy-materials/index.aspx\)](/schools/metallurgy-materials/index.aspx) and has been at the forefront of alloy development and processing of magnetic materials for many years working on ferrite, samarium cobalt and neodymium iron boron magnets. The group is recognised internationally for its work on hydrogen processing of rare earth magnets from both primary and secondary sources.

The research group was founded in the early 1950's by G.V.Raynor with Professor Rex Harris taking over in 1964. At this point the name changed from the Alloy Chemistry Group to the Applied Alloy Chemistry Group. Work concentrated on general alloy systems up to the late 1970's when the emphasis moved towards the use of hydrogen for processing of SmCo (1:5 & 2:17). With the announcement of NdFeB in 1984 this area of research took over but still with an emphasis on hydrogen processing. During the 1990's the research group was heavily involved in the research into hydrogen storage media and batteries.

In 2005 the Applied Alloy Chemistry Group split into the Magnetic Materials Group headed by Dr Andrew Williams and the **Hydrogen Materials Group** (</research/activity/metallurgy-materials/hydrogen/index.aspx>) headed by Dr David Book. Around this time the group began to investigate recycling strategies for rare earth magnets which has led to several major UK and EU projects in this area. The group has developed a hydrogen based route to both extract and to reprocess NdFeB magnets from electrical waste. Sadly in 2011 Dr Andrew Williams passed away and since that time the group has been led by Dr Allan Walton. The main research within areas of the MMG are: hydrogen processing of materials, recycling of rare earth magnets, nanostructured magnetic materials, non-equilibrium processing of rare earth alloy systems.

The group has extensive lab facilities for processing and characterisation of magnetic materials.

On this MMG web site, you will find information about:

- [Members of the MMG \(/research/activity/metallurgy-materials/magnets/Members-of-the-MMG.aspx\)](/research/activity/metallurgy-materials/magnets/Members-of-the-MMG.aspx)
- Facilities
- [Current research activities \(/research/activity/metallurgy-materials/magnets/research/index.aspx\)](/research/activity/metallurgy-materials/magnets/research/index.aspx)
- [Magnetic materials background information \(/research/activity/metallurgy-materials/magnets/Magnetic-Materials-Background-Information.aspx\)](/research/activity/metallurgy-materials/magnets/Magnetic-Materials-Background-Information.aspx)
- [Publications \(/research/activity/metallurgy-materials/magnets/MMG-Publications.aspx\)](/research/activity/metallurgy-materials/magnets/MMG-Publications.aspx)