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## Magnetic 4f-systems and their application in spintronics

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### Abstract content <br> &nbsp; (Max 300 words)

Magnetic semiconductors are materials that exhibit magnetic behaviour as well as typical semiconductor properties that are useful in the processing of information in conventional electronic devices. However, whereas traditional devices only control the charge carriers, magnetic semiconductors also give access to the electron spin and thus the storage of information. It is shown that a thin layer of Fe grown on top of (Ga, Mn)As induces ferromagnetic ordering of the Mn magnetic ions several layers across the interface. Furthermore, the magnetization persists at temperatures close to room temperature which makes hybrid ferromagnetic metal/semiconductor structures promising applications in spintronics. Spintronics or spin electronics is a new area of research where the results of conventional magnetism and semiconductor physics are correlated. Hybrid structures of the above type have the potential to optimize information storage and processing in the design of enhanced electronic devices.

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Yes

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