Record Nr.	UNINA9910437956103321
Autore	Zepf Volker
Titolo	Rare earth elements : a new approach to the nexus of supply, demand and use : exemplified along the use of neodymium in permanent magnets / / Volker Zepf
Pubbl/distr/stampa	Heidelberg ; ; New York, : Springer, c2013
ISBN	1-299-33788-0 3-642-35458-0
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (161 p.)
Collana	Springer theses : recognizing outstanding Ph.D. research, , 2190-5053
Disciplina	338.27494
	546.41
Soggetti	Rare earth metals
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"Doctoral thesis accepted by the University of Augsburg, Germany."
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Rare Earth Elements (REE) – what and where they are The way to the Chinese predominance – a key for understanding the REE issue Numbers about Rare Earth Elements in the (scientific) literature Rare Earth Elements in the magnets application field Scales and Relations: analysis of REPM use with emphasis on the years from 2000 – 2010 The geography of the REE.
Sommario/riassunto	This thesis deals with Rare Earth Elements (REE), especially with neodymium used in permanent magnets, from a very scientific basis by providing basic research data. Despite the fact that REE are newsworthy and very important elements for a considerable bandwidth of todays' technologies, accompanied by the monopolistic supply-situation and Chinese politics, there are inexplicable data discrepancies about REE which have been recognized frequently but usually have not been addressed accordingly. So this analysis started with the hypothesis that the four application areas, namely computer hard disk drives (HDD), mobile phones, wind turbines and e-mobility (automotive traction), account for about 80% of the global annual neodymium-demand. The research methodology was a laboratory analysis of the composition of used magnets for HDDs and mobile phones and a literature and official report analysis of wind turbine and automotive neodymium use. The result was amazing and the hypothesis had to be withdrawn as these

1.

four areas only account for about 20% of neodymium use. This result
raises some questions concerning actual use and thus potential
recycling options.