

Novi strateški materiali

Redke zemeljske kovine in kitajska hobotnica

OLIVER ZAJEC – RAZISKOVALEC PRI EVROPSKI SLUŽBI ZA STRATEŠKE INFORMACIJE, PARIZ

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V SLOVENŠČINI

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2. Novi materiali in nove tehnologije

REDKE ZEMLJE V PERIODNEM SISTEMU

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	
1	H																	He	
2	Li	Be																	
3	Na	Mg																	
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	
6	Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	
7	Fr	Ra	Ac	Ku	Ha	Rf													
LANTANOIDI			Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu			
AKTINOIDI			Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr			



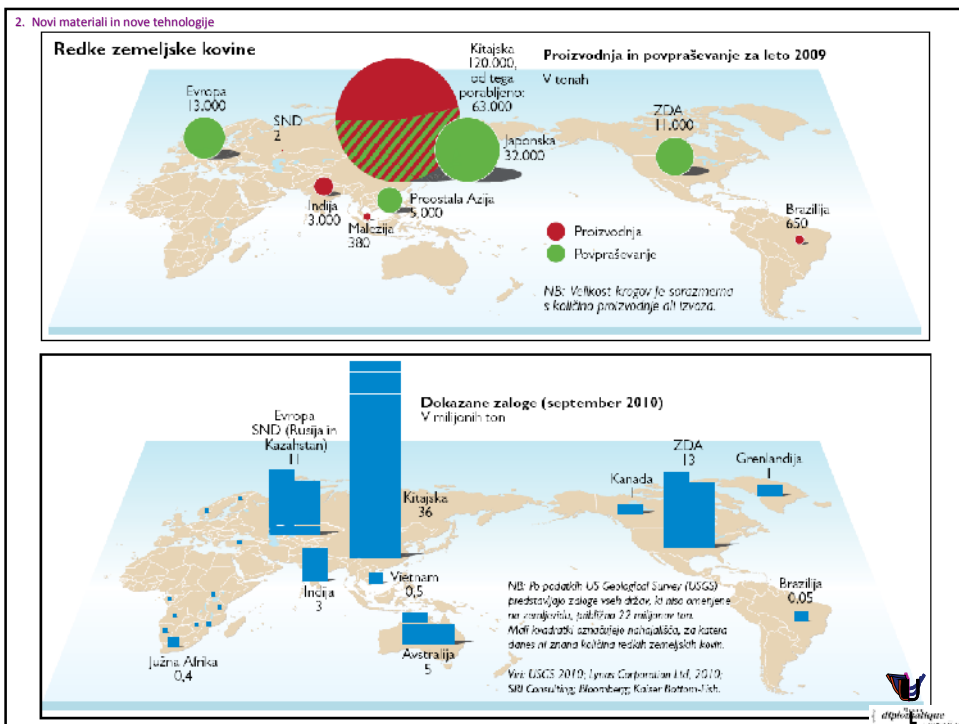
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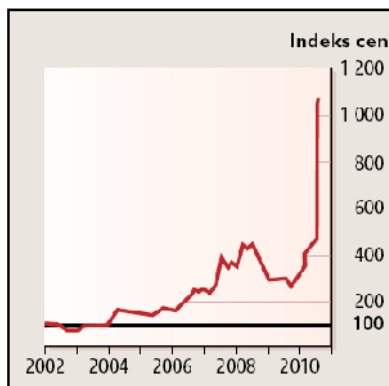
2. Novi materiali in nove tehnologije				
	Symb	Name	Etymology	Selected Usages
21	Sc	Scandium	from Latin <i>Scandia</i> (Scandinavia), where the first rare earth ore was discovered.	Light Aluminium-scandium alloy for aerospace components, additive in Mercury-vapor lamps.
39	Y	Yttrium	for the village of Ytterby, Sweden, where the first rare earth ore was discovered.	Yttrium-aluminum garnet (YAG) laser, YBCO high-temperature superconductors, yttrium iron garnet (YIG) microwave filters.
57	La	Lanthanum	from the Greek "lanthanein", meaning <i>to be hidden</i> .	High refractive index glass, flint, hydrogen storage, battery-electrodes, camera lenses, fluid catalytic cracking catalyst for oil refineries
58	Ce	Cerium	for the dwarf planet Ceres.	Chemical oxidizing agent, polishing powder, yellow colors in glass and ceramics, catalyst for self-cleaning ovens, fluid catalytic cracking catalyst for oil refineries
59	Pr	Praseodymium	from the Greek "prasios", meaning <i>leek-green</i> , and "didymos", meaning <i>twin</i> .	Rare-earth magnets, lasers, core material for carbon arc lighting, colourant in glasses and enamels, additive in Didymium glass used in welding goggles, ferrocenium firesteel (flint) products.
60	Nd	Neodymium	from the Greek "neos", meaning <i>new</i> , and "didymos", meaning <i>twin</i> .	Rare-earth magnets, lasers, violet colors in glass and ceramics, ceramic capacitors
61	Pm	Promethium	for the Titan Prometheus, who brought fire to mortals.	Nuclear batteries
62	Sm	Samarium	for Vasilii Samarsky-Bykhovets, who discovered the rare earth ore samarskite.	Rare-earth magnets, lasers, neutron capture, masers
63	Eu	Europium	for the continent of Europe.	Red and blue phosphors, lasers, mercury-vapor lamps
64	Gd	Gadolinium	for Johan Gadolin (1760–1852), to honor his investigation of rare earths.	Rare-earth magnets, high refractive index glass or garnets, lasers, x-ray tubes, computer memories, neutron capture
65	Tb	Terbium	for the village of Ytterby, Sweden.	Green phosphors, lasers, fluorescent lamps
66	Dy	Dysprosium	from the Greek "dysprositos", meaning <i>hard to get</i> .	Rare-earth magnets, lasers
67	Ho	Holmium	for Stockholm (in Latin, "Holmia"), native city of one of its discoverers.	Lasers
68	Er	Erbium	for the village of Ytterby, Sweden.	Lasers, vanadium steel
69	Tm	Thulium	for the mythological northern land of Thule.	Portable X-ray machines
70	Yb	Ytterbium	for the village of Ytterby, Sweden.	Infrared lasers, chemical reducing agent
71	Lu	Lutetium	for Lutetia, the city which later became Paris.	PET Scan detectors, high refractive index glass

Vir: wikipedia



2. Novi materiali in nove tehnologije

Svetovna proizvodnja (2009)	124.000 t
Svetovna poraba izven Krajske (2009)	61.000 t
Poraba na Krajskem (2009)	63.000 t
Svetovne zaloge (2009)	99.000.000 t
Predvideno svetovno povpraševanje za leto 2014:	80.000 t
namenjeno za naslednja proizvode:	
Magnezi	28 %
Zlitine za baterije	16 %
Prašek za poliranje	15 %
Katalitski kreking v zvrtnični plasti	14 %
Specialne kovine	7 %
Avtomobilski katalizatorji	7 %
Fosforji	6 %
Aditivi za steklo, keramiko in drugo	7 %



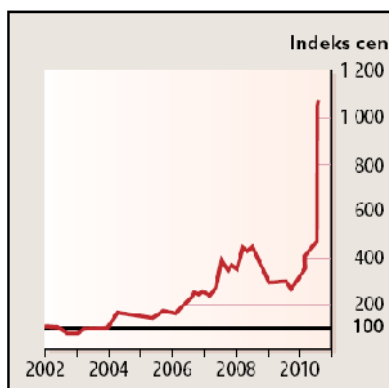
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