

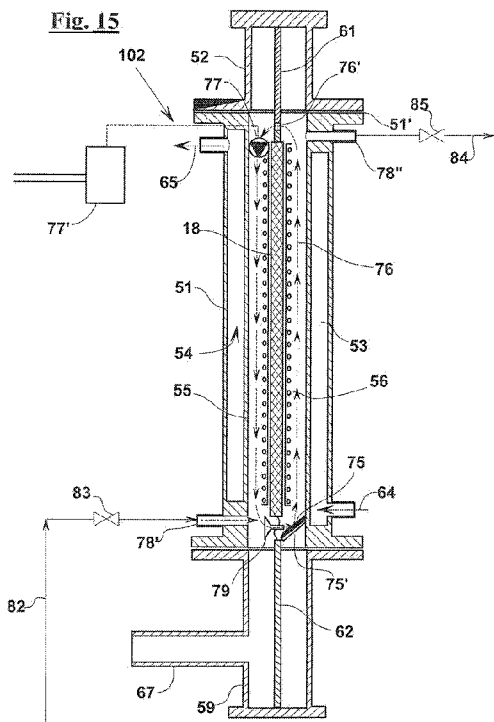


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[Continued on nextpage]

(54) Title: METHOD AND APPARATUS FOR GENERATING ENERGY BY NUCLEAR REACTIONS OF HYDROGEN ADSORBED BY ORBITAL CAPTURE ON A NANOCRYSTALLINE STRUCTURE OF A METAL



(57) Abstract: Technical problems: to increase the energy that can be obtained and to make it possible an adjusting the power supplied according to a method and an apparatus (101) to obtain energy by nuclear reactions between hydrogen (31) and a primary material (19) of an active core (18) comprising cluster crystal nanostructures a transition metal, where the hydrogen is kept in contact in a generation chamber (53) with such clusters at a temperature of process predetermined, and wherein by an impulsive action on the primary material, is caused an orbital capture reaction of H- ions by the clusters and then of capture by the atoms of the cluster, generating thermal energy associated with the reaction heat of said reactions and removing thermal power starting from this thermal energy. Solution: Prearranging means for generating (60) of in H- ions, in order to cause a transition from a first concentrating said H- ions to a second concentrating said H- ions in said hydrogen (31) in contact with cluster active core (18), in particular by means of ionizing said hydrogen (31). The ionization can be carried out for impact of the hydrogen (31) on an electron-donor material, in particular selected between the alkaline metals and alkaline-earth and arranged near the active core (18); or supplying to the hydrogen (31) an energy vector (69) as a radiations ionising, for example of type  $\alpha$ ,  $\beta$ ,  $\gamma$ , X, laser, UV, or as a beam of particles for example protons, hyperons, mesons, leptons, metal ions which, through a source or owing to reactions between a suitable for secondary material and protons coming from the transition metal during the orbital capture; or reducing the collection of thermal power for causing an increase of temperature of Active core (18).



**INTERNATIONAL SEARCH REPORT**

International application No  
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<p>A. CLASSIFICATION OF SUBJECT MATTER INV. G21B3/Q0 ADD.</p>		
<p>According to International Patent Classification (IPC) or to both national classification and IPC</p>		
<p>B. FIELDS SEARCHED</p>		
<p>Minimum documentation searched (classification system followed by classification symbols) G21B</p>		
<p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p>		
<p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal , WPI Data, INSPEC</p>		
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	wo 2010/058288 AI (PIANTELLI SILVIA; BERGOMI LUIGI [IT] ; GHIDINI TIZIANO [IT] PIANTELLI S) 27 May 2010 (2010-05-27) cited in the appl icati on the whole document  -----	1,2,8,9
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<p><input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.      <input checked="" type="checkbox"/> See patent family annex.</p>		
<p>* Special categories of cited documents :</p>		
<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p>	
<p>Date of the actual completion of the international search</p> <p align="center">17 December 2012</p>	<p>Date of mailing of the international search report</p> <p align="center">03/01/2013</p>	
<p>Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016</p>	<p>Authorized officer</p> <p align="center">Capostagno, Eros</p>	

INTERNATIONAL SEARCH REPORT

International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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