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(54) Title: POLYCRYSTALLINE ABRASIVE COMPACTS

(57) Abstract: A method of manufacturing polycrystalline abrasive elements consisting of micron, sub-micron or nano-sized ultrahard abrasives dispersed in micron, sub-micron or nano-sized matrix materials. A plurality of ultrahard abrasive particles having vitreophilic surfaces are coated with a matrix precursor material in a refined colloidal process and then treated to render them suitable for sintering. The matrix precursor material can be converted to an oxide, nitride, carbide, oxynitride, oxycarbide, or carbonitride, or an elemental form thereof. The coated ultrahard abrasive particles are consolidated and sintered at a pressure and temperature at which they are crystallographically or thermodynamically stable.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
 INV. C22C29/06 C22C29/12 C03C1/00 C03C14/00 C09K3/14
 E21B10/567 C22C26/00 C22C29/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 C22C C03C C09K E21B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
 EPO-Internal, WPI Data, COMPENDEX, INSPEC

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* Special categories of cited documents :

A document defining the general state of the art which is not considered to be of particular relevance	*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
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O document referring to an oral disclosure, use, exhibition or other means	*&* document member of the same patent family
P document published prior to the international filing date but later than the priority date claimed	

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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Ceulemans, Judy
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