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(54) Title: COLLOID, METHOD OF OBTAINING COLLOID OR ITS DERIVATIVES AND APPLICATIONS THEREOF

(57) Abstract: The present invention relates to methods of stable, metallic, nonionic, micro - and - nano colloid and sole making. In particular, the herein described colloids and soles are directly derived from the either pure metals or alloys. This invention relates also to numerous examples of colloids and soles, their applications, as well as numerous colloid and sole derivatives. The method of the invention is based on a simultaneous metal desintegration and mixing with a suspending media. An electrical current pulse is used to desintegrate the solid metal sample which is the source material for the micro- and nano-particles .

INTERNATIONAL SEARCH REPORT

International Application No
PCT/PL2005/000012

A. CLASSIFICATION OF SUBJECT MATTER
INV. B22F9/14 B22F1/00

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)
B22F C02F

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 718 061 A (INSTITUTE OF PETROLEUM CHEMISTRY, RUSSIAN ACADEMY OF SCIENCES) 26 June 1996 (1996-06-26)	1-10, 12-16, 22,29, 30,35,36
Y	abstract column 1, line 3 - line 26 column 1, line 52 - column 2, line 58 column 4, line 20 - column 6, line 9 claims 1-4,7-13; examples -----	17-21
X	FR 1 316 365 A (HARTH, V.) 25 January 1963 (1963-01-25)	1,2,5,6, 9-16, 23-26,31
Y	page 1, left-hand column, paragraph 3 - right-hand column, paragraph 5	17-21
A	claims; figures; example ----- -/--	3,22

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "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)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "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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- "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.
- "&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/PL2005/000012

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	TEPPER F: "NANOSIZE POWDERS PRODUCED BY ELECTRO-EXPLOSION OF WIRE AND THEIR POTENTIAL APPLICATIONS" POWDER METALLURGY, MANEY PUBLISHING, LONDON, GB, vol. 43, no. 4, 2000, pages 320-322, XP001124633 ISSN: 0032-5899	1-10, 12-16, 22-31, 35,36
Y	the whole document -----	17-21
X	WANG Q ET AL: "Preparation and characterization of nanocrystalline powders of Cu-Zn alloy by wire electrical explosion method" MATER. SCI. ENG. A; MATERIALS SCIENCE AND ENGINEERING A JUN 15 2001, vol. 307, no. 1-2, 15 June 2001 (2001-06-15), pages 190-194, XP002355574	1-6,9, 10, 12-16, 22,29, 30,35,36
Y	page 190, 1. Introduction - page 191, 2. Experimental Procedure page 193, left hand column, 3rd paragraph - right hand column, 3rd paragraph -----	17-21
Y	US 6 660 058 B1 (OH SEONG-GEUN ET AL) 9 December 2003 (2003-12-09) column 2, line 65 - column 3, line 25 examples 1-4 -----	17-21
Y	US 6 432 320 B1 (BONSIGNORE PATRICK ET AL) 13 August 2002 (2002-08-13) column 2, line 5 - line 15 column 2, line 52 - column 3, line 3 column 4, line 19 - column 5, line 6 column 5, line 56 - line 59 -----	17-21
Y	US 2003/121364 A1 (SUN SHOUHENG) 3 July 2003 (2003-07-03) paragraph [0002] paragraph [0011] - paragraph [0013] paragraph [0025] -----	17-21
P,X	WO 2004/112997 A (JAWAHAR LAL NEHRU UNIVERSITY; SEN, PRASENJIT; GHOSH, JOYEE; KUMAR, PRA) 29 December 2004 (2004-12-29)	1,2, 5-10, 12-17, 22,27,28
P,A	page 1, line 4 - line 18 page 3, line 1 - page 5, line 30 page 7, line 12 - line 27 page 11, line 27 - line 29 claims 1-11; examples -----	3,4
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/PL2005/000012

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-31, 35-36

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-31,35-36

Method of producing colloids comprising micro or nano particles in dispersive media as well as the colloid and applications of the colloid.

2. claims: 32-34

Micro or nano particles composed of at least two electrically conductive metals

3. claim: 37

Method of fabricating spectroscopic standards by braking electrically pure metals and alloys in liquid nitrogen or helium and obtaining dry metallic material upon gas evaporating

INTERNATIONAL SEARCH REPORT

International Application No
PCT/PL2005/000012

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,A	<p>FU W ET AL: "Preparation and characteristics of core-shell structure nickel/silica nanoparticles" COLLOIDS AND SURFACES. A, PHYSICACHEMICAL AND ENGINEERING ASPECTS, ELSEVIER, AMSTERDAM, NL, vol. 262, no. 1-3, 15 July 2005 (2005-07-15), pages 71-75, XP004976912 ISSN: 0927-7757 page 71, 1. Introduction - page 72, 2.1.2. Pretreatment of nickel nanoparticles page 75, 4. Conclusions -----</p>	1-28,31

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/PL2005/000012

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0718061	A	26-06-1996	JP 9095704 A	08-04-1997
FR 1316365	A	25-01-1963	NONE	
US 6660058	B1	09-12-2003	NONE	
US 6432320	B1	13-08-2002	NONE	
US 2003121364	A1	03-07-2003	NONE	
WO 2004112997	A	29-12-2004	NONE	