INVESTIGATION

Valerian Sobolev's Discovery

Editorial: This story began on 12.07.01 with TV announcement of the following content: "The head of the group of authors, the Academician of Russian Academy of Natural Science, Leninist and State prize laureate, Doctor of Technical Science, Professor **Valerian Sobolev** informed that Russian scientists made the series of sensational and fundamental discoveries, which can make a revolution in industry and power engineering."

Seven fundamental scientific discoveries were made, namely:

- The process of depletion, a particular electrochemical selective process;
- New state of matter;
- New class of materials;
- Magnetic charge;
- New energy source;
- The method of low-temperature plasma generation;
- Superconductor.

The process of depletion has been experimentally discovered. It is the basic discovery, which was followed by all the others. This process is similar to the process of electrolysis and easy as well. However, **the products** of the process are metals and monolithic multiple-unit chemical compounds **such as quartz glass**. The composition of the materials corresponds to such matters as titanium diboride, silicon, ferric, aluminum, and titanium oxides. Melting temperature value of these matters lies in the interval from 1500°C and more than 3000°C.

It is declared to be technically easy to create a current source, i.e. a Self-contained Unit, which is a source of electro motive force (EMF) (the observed value is nearly 1500 Volt for 100 cm of matter volume).

It is planned to design such a self-contained device as a safe self-governing electric power station for common and industry usage. This device could be made as a current source, which has 3 kWt power and is able to produce energy in any climate condition of the Earth.

A United States Patent (#5,964,913, Titov , et al., October 12, 1999) describes the essential principles of this technology.

United States Patent *5,964,913*

Titov, et al. October 12, 1999

Method of making a vitreous material

Abstract

The invention relates to a single phase vitreous material and to its production from a melt of a glass-forming multi-component feed mix. The process includes the preparation of a single phase melt in which there are mobile cations from a glass forming feed mix. The melt in passed in contacting relationship with and sequentially between devices made of low electrical resistance material from device to device. These devices are in and complete with the melt and a direct current voltage source an electric circuit. A voltage is regulated in the electrical circuit so that a direct electrical current is created in it and the concentration of the mobile cations in the melt is lowered thereby with reduction on the cathode of the metals of the same kind as the mobile cations. The melt, lowered concentration of the mobile cations, is cooled to produce the material as a structural article. In another embodiment, the anode is separated from the melt by a medium, which is substantially inert with respect to the melt. A voltage in this electric circuit is regulated to create an electrostatic field between the cathode and anode so that a direct electrical current is created, and thus the concentration of mobile cations in the melt is lowered with reduction on the cathode of the metals of the same kind. This melt similarly is cooled to produce the material as a structural article. In another embodiment, the embodiments of both the electric circuit with the anode contacting with the melt and the electric circuit with the anode not contacting the melt are practiced simultaneously.

Inventors:	**Titov; Nikolai Fydorovich** (Volgogard, RU); **Polyakov; Sergei Vladimirovich** (Volgogard, RU); **Barabash; Vitaly Romanovich** (Volgogard, RU); **Kolesnikov; Alexander Georgievich** (Volgogard, RU); **Golovchenko; Alexander Ivanovich** (Volgogard, RU); **Polyakov; Pavel Vladimirobich** (Volgogard, RU); **Sobolev; Valerian Markovich** (Moskow Region, RU); **Skachko; Vasilly Sergeevich** (Volgogard, RU); **Baldwin; Roy Donald** (Dublin, OH); **Dunaev; Igor Mikhailovich** (Krasnodar, RU); **Burylyov; Boris Petrovich** (Krasnodar, RU)
Assignee:	**Dynelec Corporation** (Columbus, OH)
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Primary Examiner: Silverman; Stanley S.
Assistant Examiner: Ruller; Jacqueline A.
Attorney, Agent or Firm: Mueller and Smith LPA

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of application Ser. No. 08/617,620 filed Mar. 18, 1996, now abandoned, the disclosure of which is expressly incorporated herein by reference.

Claims

We claim:

1. A method of producing a single phase vitreous material from a melt of a glass-forming multi-component feed mix which comprises the steps of:

(a) preparing a single phase melt in which there are mobile cations from a glass forming feed mix, components of which feed mix are chemical compounds selected from the group consisting of a chemical compound which includes a univalent metal which in the melt is a mobile cation, a chemical compound including a divalent metal which in the melt is a mobile cation, and mixtures thereof, and

chemical compounds selected from the group consisting of a chemical compound which includes a trivalent metal, a chemical compound which includes a metal with a valence higher than three (3), and mixtures thereof;

(b) passing said melt in contacting relationship with and sequentially between devices made of low electrical resistance material from device to device, said devices in and completing with the melt and a direct current voltage source an electric circuit in which circuit there is a said device serving as an anode and there is a said device serving as the cathode;

(c) regulating a voltage in said electrical circuit so that a direct electrical current is created in it and the concentration of the mobile cations in said melt is lowered thereby with reduction on the cathode of the metals of the same kind as the mobile cations; and

(d) cooling said melt which has the lowered concentration of said mobile cations to produce the material as a structural article.

2. The method of claim 1 wherein the glass forming feed mix melt having a lowered concentration of said mobile cations is cooled in the range of the temperatures of crystallization of this melt at a rate so as to obtain a material from this melt in the amorphous state, this material being in the form of a structural article.

3. The method of claim 1 wherein the melt of the glass forming feed mix having a lowered concentration of said mobile cations is maintained in the range of the temperatures of crystallization of this melt in such a way so as to obtain a material from this melt in the crystalline state, this material being in the form of a structural article.

4. The method of claim 1 wherein said components are in the form of compounds selected from the group consisting of oxides, fluorides, bromides, carbonates, sulfates, nitrates, phosphates, and mixtures thereof.

5. The method of claim 1 wherein said components in the form of compounds selected from the group consisting of carbonates, sulfates, nitrates, phosphates, and mixtures thereof, are transformed in step (a) into components of the feed mix.

6. The method of claim 1 wherein said components comprise the chemical compound the carbonate Na.sub.2 CO.sub.3, which in step (a) is transformed into the starting component Na.sub.2 O, which includes the univalent metal sodium, and the chemical compound the oxide SiO.sub.2, which includes metal silicon with a valence higher than three (3).

7. The method of claim 1 wherein said components comprise the chemical compound Na.sub.2 CO.sub.3 and the chemical compound SiO.sub.2 and in which the concentration of the cations of the univalent metal sodium (Na) is lowered in order to obtain a single phase material of fused oxide of the higher valent metal silicon (Si) having a valence higher than three (3) in the form of quartz glass (SiO.sub.2).

Editorial: We will inform our readers about news on the topic.