

JSC "NOMOS-4"

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Management: I.A. Sobolev - General Director,

V.V. Bordounov - Business Director,

S.V. Bordounov - Director for production and development

Employees: full time - 7, part time - 15 persons

Previous financing: \$ 50 000

Current financing: \$ 9 000

Requested investment: \$ 150 000

Use of the requested investment: Expansion of the production (capital construction and purchase of the production facilities, new working outs, market development, increase of output of the serial products).

Company Description:

'NOMOS-4'JSC was established in 1997 to put into practice the scientific line "Physicochemical bases for the creation of wasteless technological processes". The authors of this line are the owners of "NOMOS-4" JSC. The enterprise activity aims to the creation of high-profitable technologies for the recycling of industrial sewage and waste of mines and pits, oil-producing, metallurgical, engineering and other enterprises and organizations, domestic and medical waste, in particular , plastic containers, disposable syringes, waste paper. As a result of researches and working outs performed we outline the following strategic tasks of the promotion:

Technology and equipment for electric-pulse feedstock crushing and extraction of metal concentrate, affinage of non-ferrous and noble metals.

Field and Directions of Activity:

Technology and equipment for electric-pulse crushing of the feedstock and extraction of metal concentrates, affinage of non-ferrous and noble metals.

Products/Services/Technologies:

There has been built an installation for the processing of gold-containing ores and technogenic feedstock (with the productivity of 5-15 tons/ hour) at the simultaneous application of 3 physical effects in the installation; a technology of non-electrochemical affinage of non-ferrous and noble metals has been developed. The effectiveness of this technology has been experimentally confirmed for practically all the types of ores and technologic feedstock (dumps of gold-extracting plants) in Kemerovo Oblast, Khakasia, Krasnoyarsk Kray. Promising Developments:

- Establishment and organization of the production of serial full-scale installations for the processing of gold-containing ores and technogenic feedstock with the productivity of 5-15 tons/hour. A simultaneous application of 3 physical effects in the installation allows enhancing the degree of gold extraction (due to the break-down of finely dispersed gold) by 1.6-2.1 times and at the same time removing 30-90% of the rock refuse from the installation. The customer may pay back the expenses for the purchasing of our installation due to the water saving at the following stages of gold leaching only, because the feedstock volume decreases by 30-90% after the removal of the refuse rock.
- Development of the commercial affinage equipment for the selective extraction of non-ferrous and noble metals from water solution allowing one to produce at one step, for example, high-standard gold. Electrochemical affinage used worldwide is a multistage process: to produce 24-carat gold 5-6 operations of electrochemical cleaning of cathode metal are required.

Management Team:

Private persons:

The director general is Igor A. Sobolev (coowner, 20%), Doctor of Sciences, company management from its establishment, work experience: more than 20 years in research.

The sales director is Vladimir V. Bordunov (coowner, 50%), Doctor of Sciences, Intern. Academy of Ecology and Life Protection Sciences, Academician.

The Director for production and development is Serguey V. Bordunov, work experience: 4 years in the field of plastic recycling, 5 years in research.

Markets/Competition:

Technology and equipment for the processing of the feedstock containing non-ferrous and noble metals into the end products - high-standard bars.

It is difficult to evaluate even the Russian market of the equipment for processing of ores and technogenic feedstock. In accordance with our data (confirmed by administrations of 5 mines, pits and concentration plants (in Kemerovo Oblast, Khakasia, Krasnoyarsk Krai) dumps of gold-extracting plants contain more than 100 tons of gold, their process is payable while using our technology and equipment. In accordance with literature data and the results of our studies, from 20 to 40% of gold is in finely dispersed state (1-10⁰m), it may not be leached being inside of the grains of the refuse rock. Thus, the application of our equipment allows enhancing gold production at the existing mines by 20-40%, and, consequently, the production profitability.

The most promising version of the sales of our production is the establishment of co-production with a gold-producing enterprise at its premises using its equipment and staff (including the security and transportation system of the special products) and our equipment enhancing the degree of gold extraction and gold bars production in-situ. We have already developed such a version: "Istok" JSC was established on the basis of "Artyomovskiy" pit. A copy of our letter is enclosed. Khakasia government guarantees its support, if the investments are available, to swing Saralynskiy pit from Bankruptcy, in this case this pit may be transferred to investor propriety (all the equipment is in working state).

Competitors: There are no equipment and technologies analogous to our development.

Market volume: At least the gold-producing enterprises of three above regions, whose state and prospects we have studied. There are no analogs for our potential production.

As far as concerns the technology of non-electrochemical affination, there are no analogs and competitors too. It may be confirmed by the enclosed copy of the letter by the Russian Committee for Noble Metals which was received after a careful expertise of our technology of gold extraction from sewage of the state affination plant. The gold concentration in this sewage is 1-3 mg/l, sewage volume is 5 000 m³/year; when the gold is subjected to the secondary extraction from the sewage by our technology; its concentration is 0.01 mg/l.

The mounting of our equipment, e.g. in "Zoloto" JSC (Severo-Yeniseysk, Krasnoyarsk Krai) will allow one to enhance the volume of the gold produced from 2 to 3.2 tons a year, to reduce water consumption from 1,500,00 m³ to 1.000,000 m³ a year, to reduce power consumption from 27,000,000 kWt/h to 3,000.000 kWt/h. The estimated payback period is 2-3 months after launching our equipment at the enterprise.

Achievements:

Our company obtained 14 patents (including 1 patent of USA, 1 patent of European Patent Office, 1 patent of Germany) for 'Metallurgy: Methods, equipment for feedstock crushing and extracting metal concentrates, metal affination.

- Our project was included into the Program of restructurization of coal industry in Kemerovo Oblast and creation of new jobs for miners at the enterprise for the processing of gold-containing dumps of Salair concentration plant. (This Program was not put into practice due to finance lack although it was approved by the Administration of the Russian Committee for Coal Industry and Administration of Kemerovo Oblast)

- Positive expertise of the technology of the non-electrochemical gold affinage carried out by the Russian Committee for Noble Metals, the expertise authorized us to produce gold in bars. In Russia only 4 state enterprises have this license.

Outlook: Production and sales of the industrial equipment mentioned in the present form, purchasing of own industrial premises. The investments will be paid back after 24 months of production activity.