

Recent advances In gold Dore refining

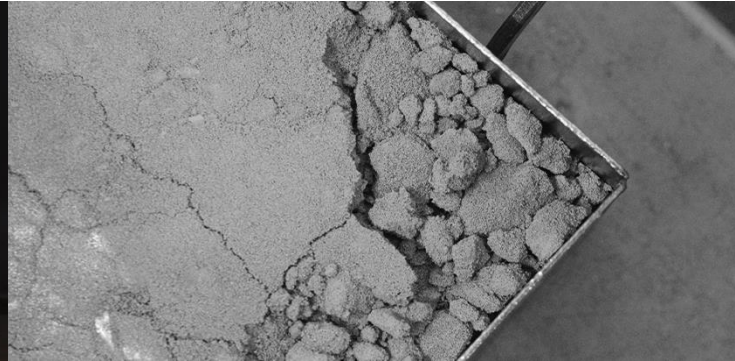
India Gold Conference
29 – 31 July 2022, Chennai

Kristina Kern

Outline



Krastsvetmet:
who we are?



Recent advances
in Au refining
technologies

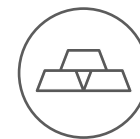


Our team &
cooperation
opportunities

Krastsvetmet processes primary and secondary materials and produces 8 precious metals



Key activities



Precious metals production



Industrial solutions including technical products of precious metals



Chain and bracelet production

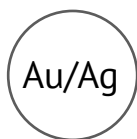


100% of the company shares are owned by Krasnoyarsk state region



From 99.50% to 99.99% fineness

Products



Gold and silver bars, granules and powders



Platinum group metals as bars and powders



Precious metal compounds as solutions and powders, perhenic acid

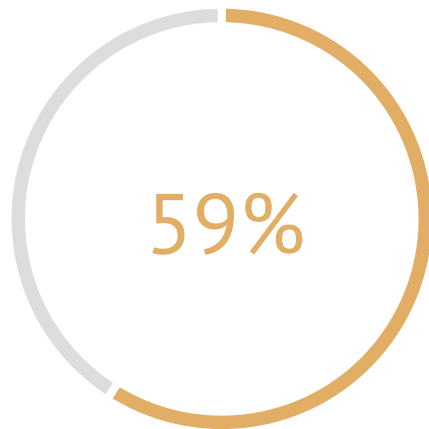


Related services of logistics, customs clearance, assaying, financial instruments, IT services

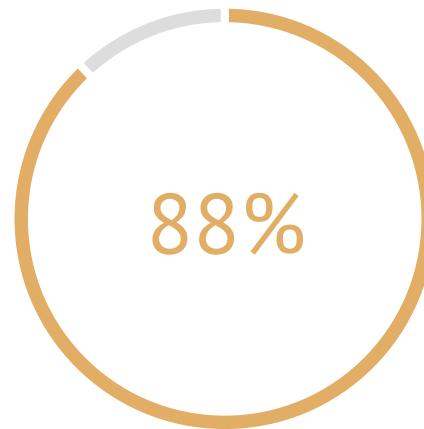


Krastsvetmet keeps the lead on the Russian precious metals market

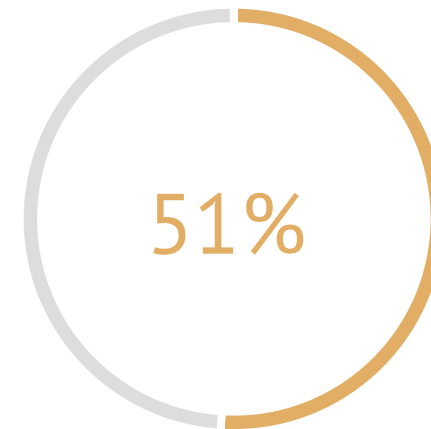
203
tons of gold



102
tons of PGMs



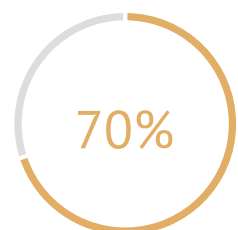
484
tons of silver



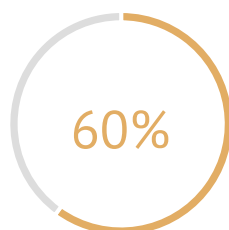


Precious metal products are used in a number of industries

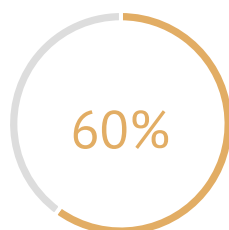
Krastsvetmet's market share in Russia



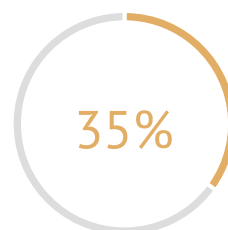
Process equipment
cleaning for
nitrogen plants



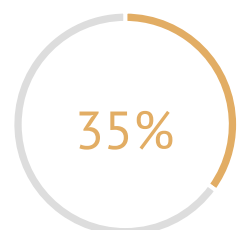
Ammonia oxidation
catalysts



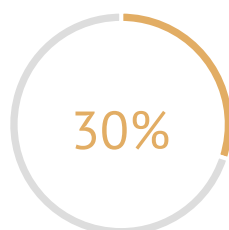
Reference materials
for laboratory
equipment calibration



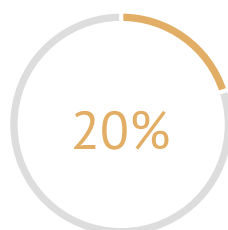
Labware



Silver sputtering targets



Glass melters
and glass bushings



Thermocouple wire



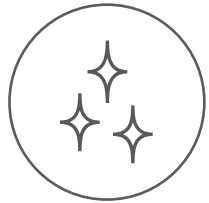
Krastsvetmet implements comprehensive solutions for industrial plants and develops a business service model in many markets



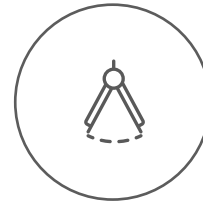
Nitrogen plant upgrading



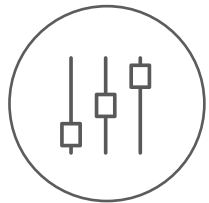
Scrap items recycling



Process equipment cleaning



Engineering for nitrogen plants and basalt fiber manufacturers



Management of the Client's metals



Krastsvetmet is the leader
of gold chain production in Russia

220

weave styles
of chains and
bracelets

Colors of gold

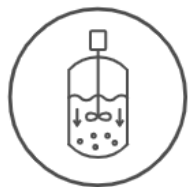


Coatings of silver





Own RnD Park is working on improving existing and development of new refining technologies for company as well as for commercial transfer



Precipitation



Electrochemistry



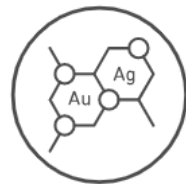
Ion-exchange



Solvent extraction



Pyrometallurgy



Synthesis of new products



Outline



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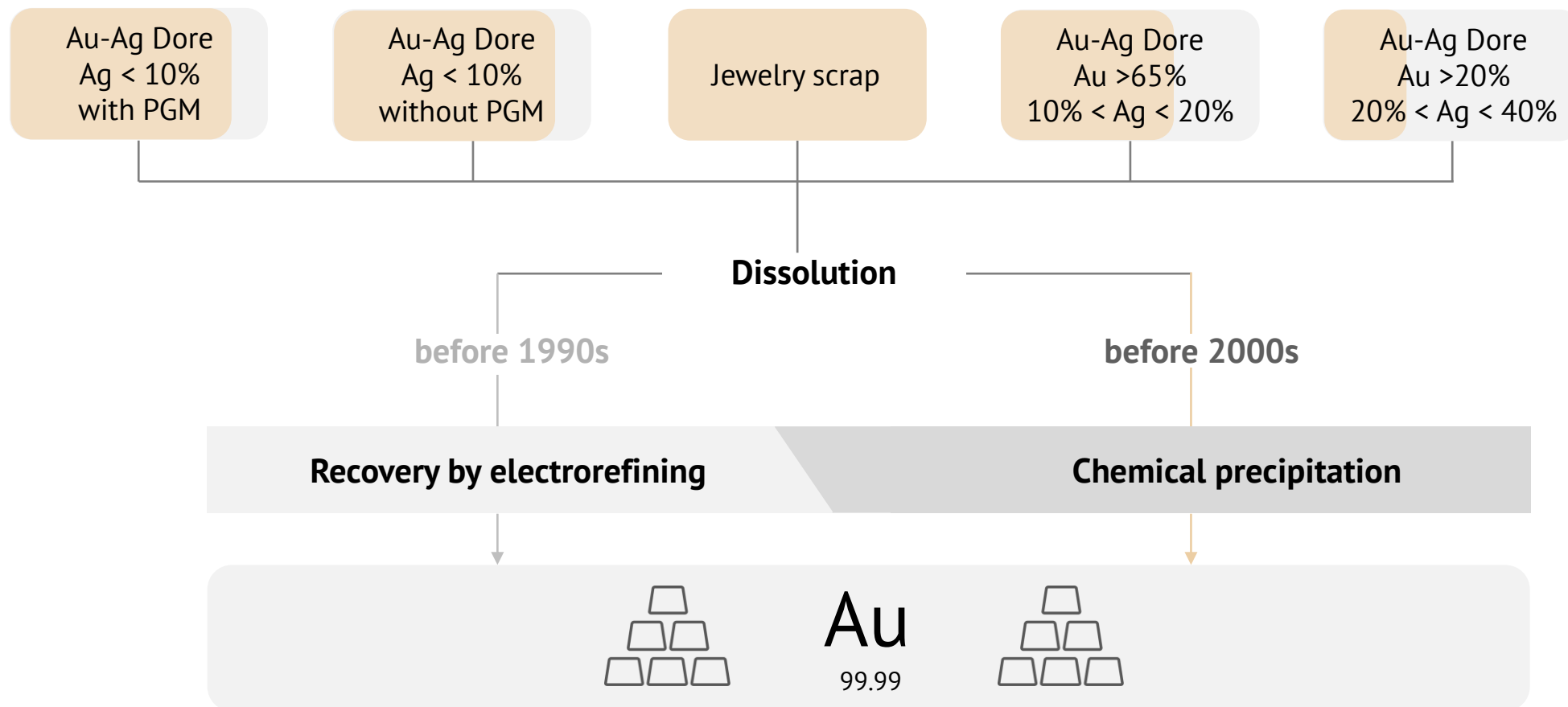


Recent advances
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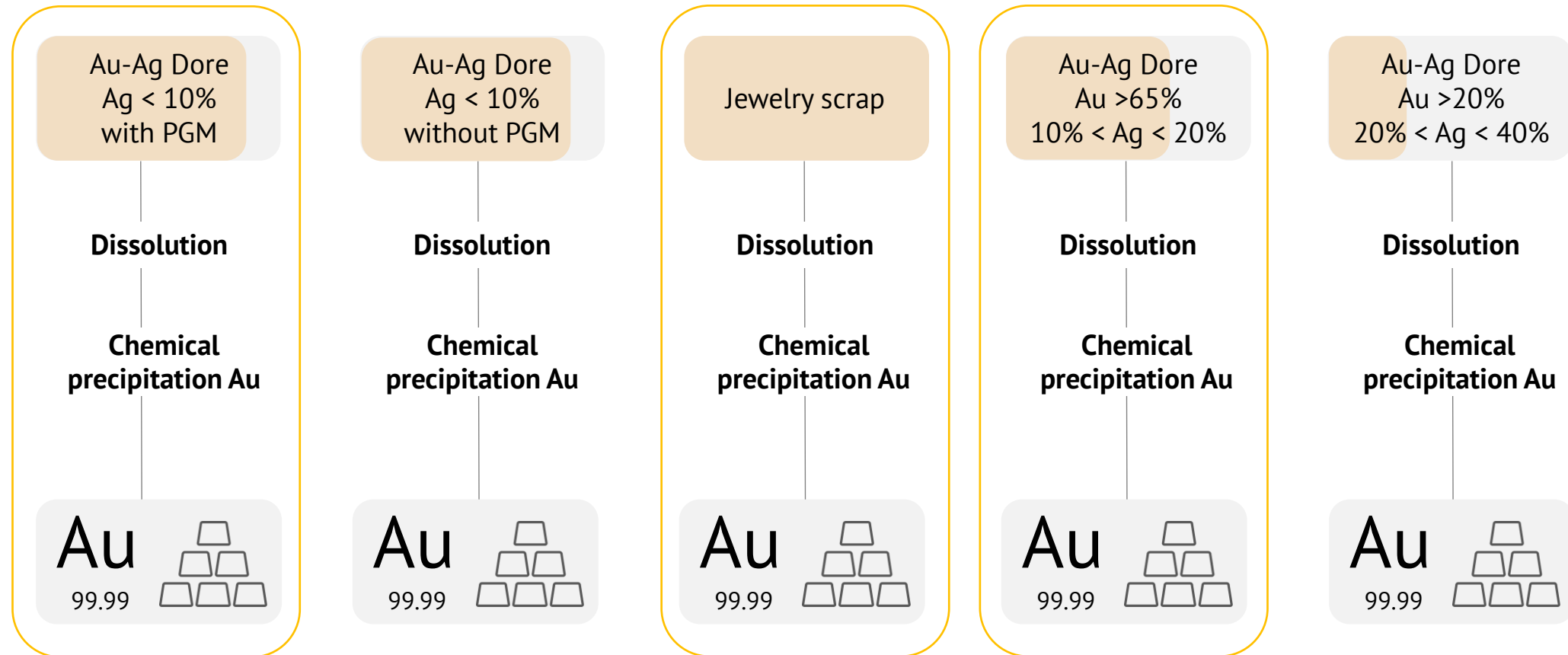


Our team &
cooperation
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Recovery of gold from the entire range of raw materials earlier

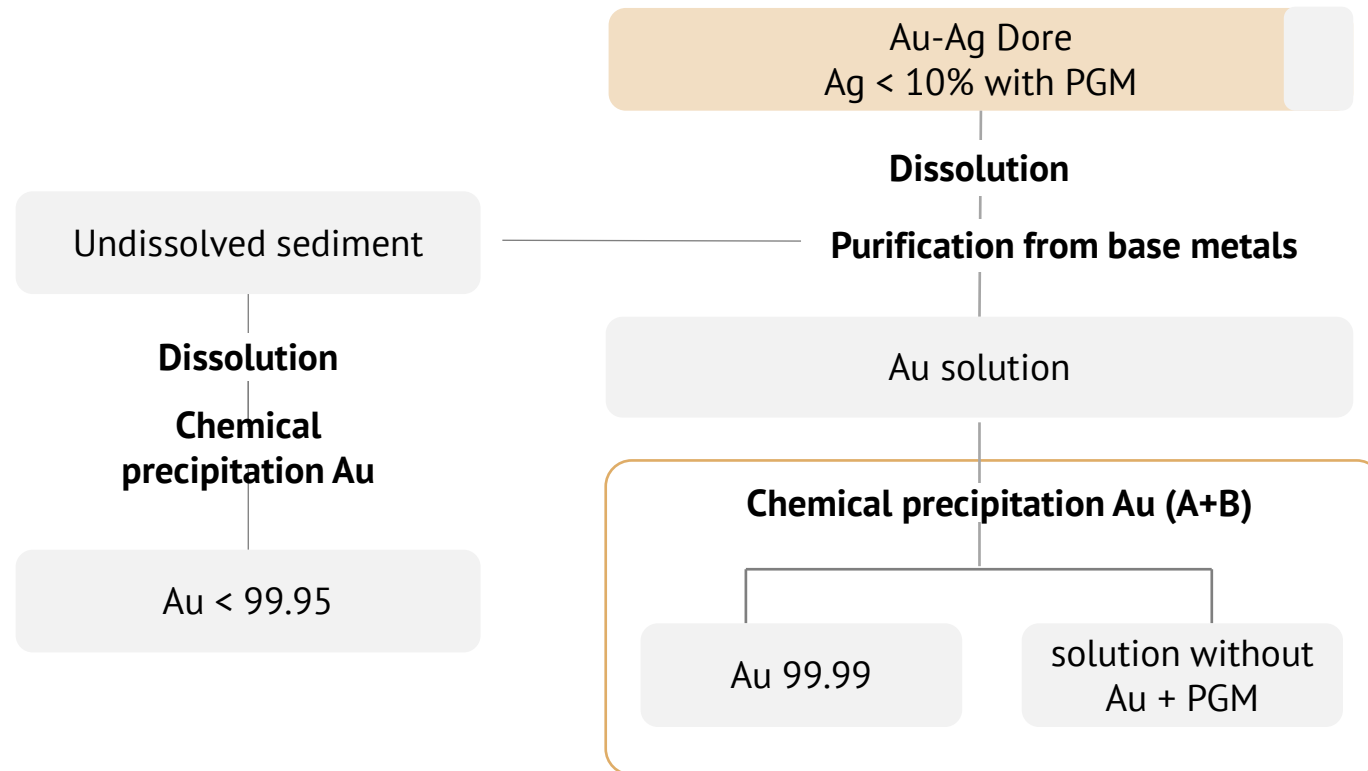


Active scientific research has led to the separation of schemes depending on the content of silver and PGM



Refining of Dore with PGMs was improved at the Au recovery stage due to the use of an additional precipitator

Intellectual
property of Krastsvetmet



Before: precipitator A

After: precipitator A+B

Effects

↑ Refining acceleration
by 10%

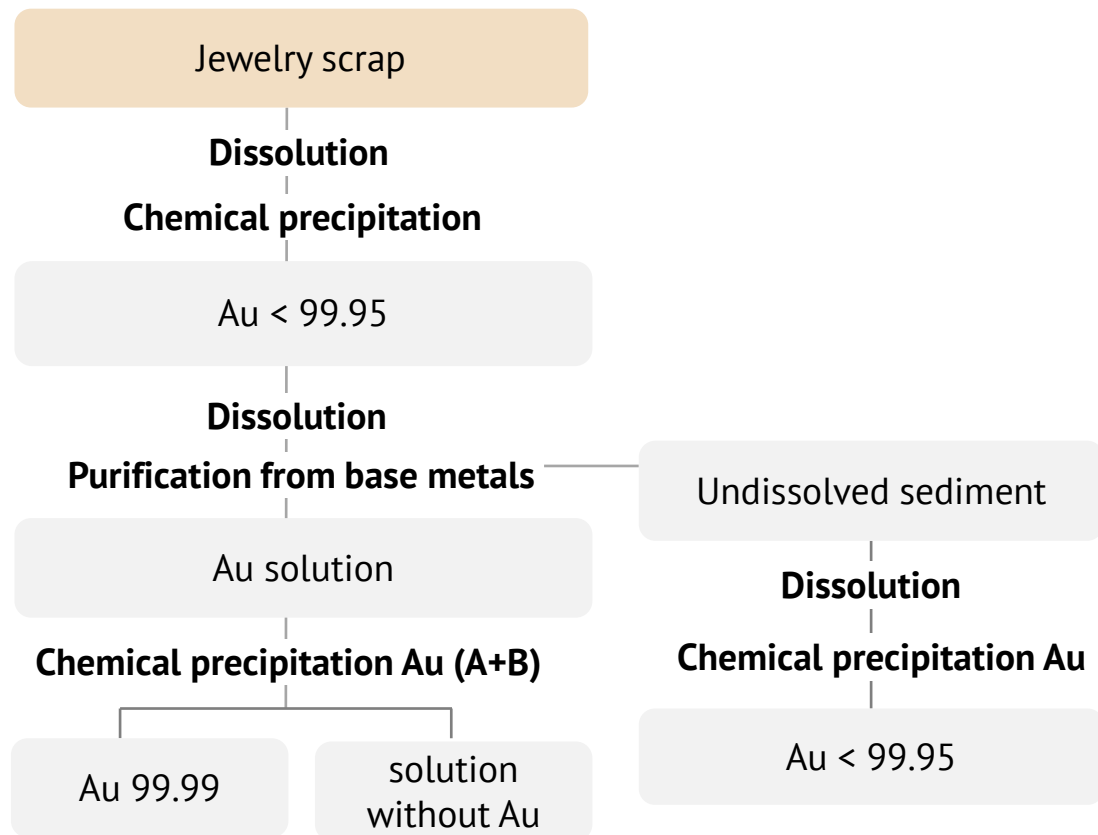
↓ Reduction of gas
emissions by 5 times

↑ Selective precipitation of
gold without PGM

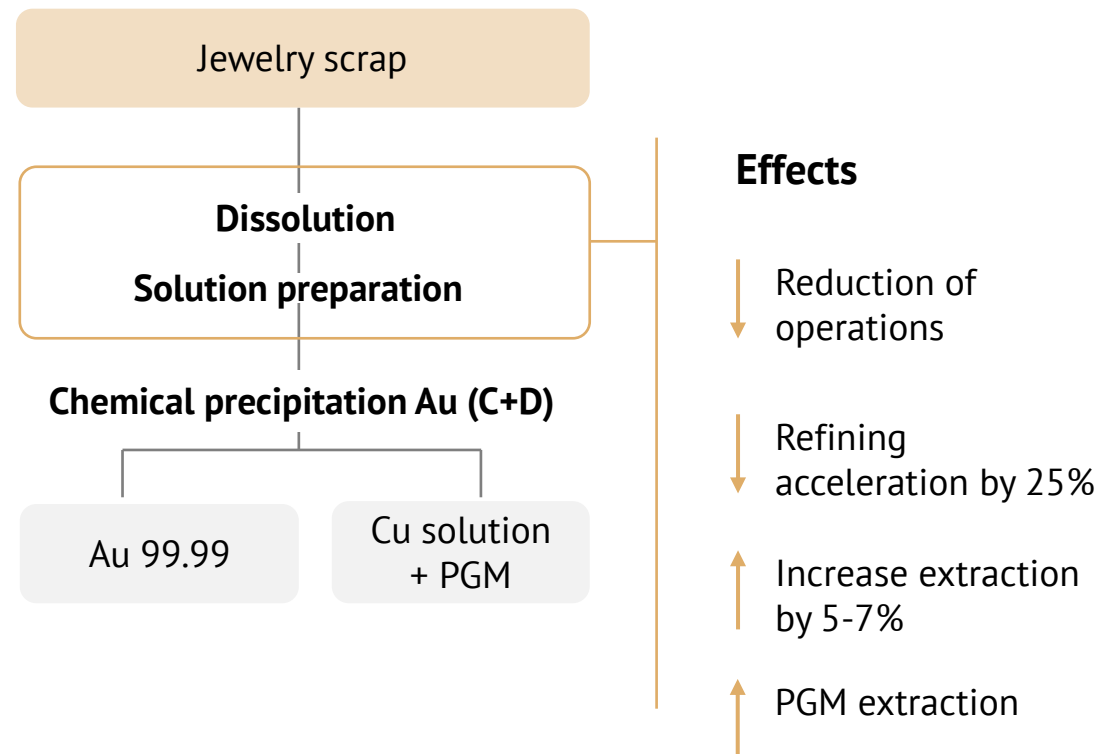
Jewelry scrap refining has been improved in terms of reducing operations

Intellectual property of Krastsvetmet

Before

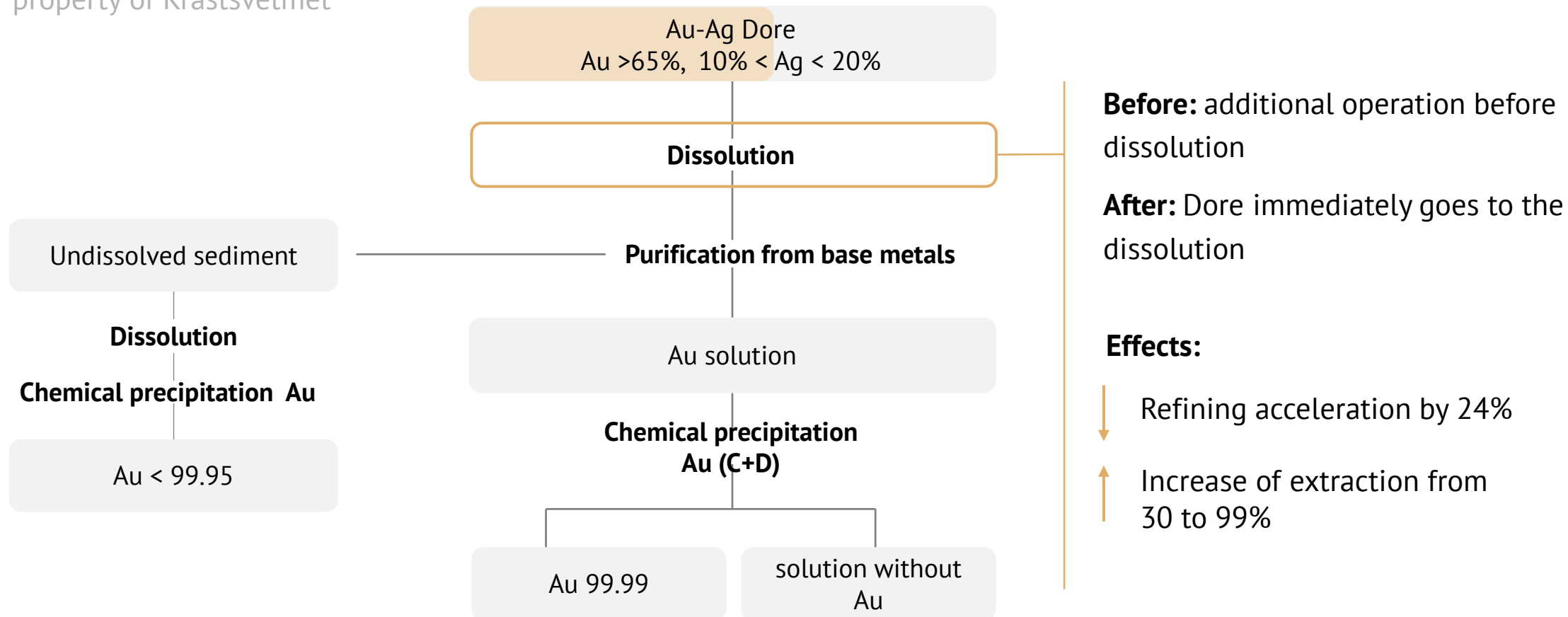


After



New dissolution method for the refining of 20%+ Ag Dore

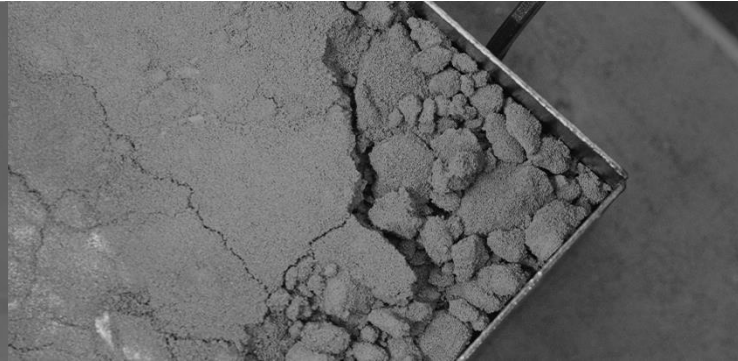
Intellectual
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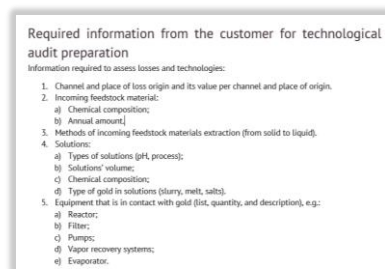
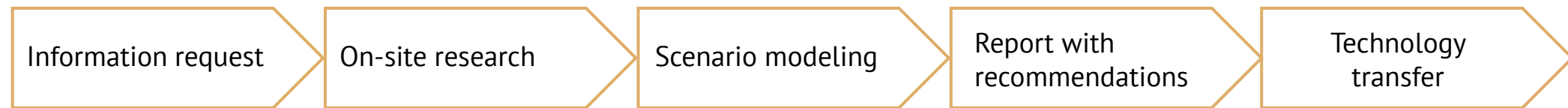
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Our team &
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Krastsvetmet offers cooperation opportunities in terms of the transfer of advanced refining technologies

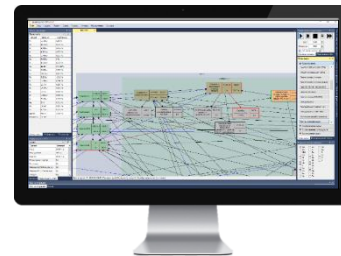
Main stages



A brief questionnaire to be sent to the client with fields to fill in.



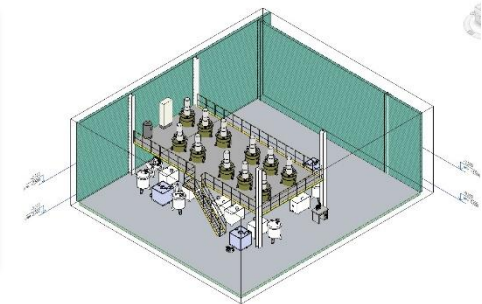
Study of technology, equipment and work of employees at the client's site.



The simulation model based on collected data to build effective scenarios.



The technological audit report is sent to the client in PDF format or printed form.



Preparing a license for gold refining technology.

Krastsvetmet technological solutions references are represented by the following



We are open to support your projects and ideas



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