

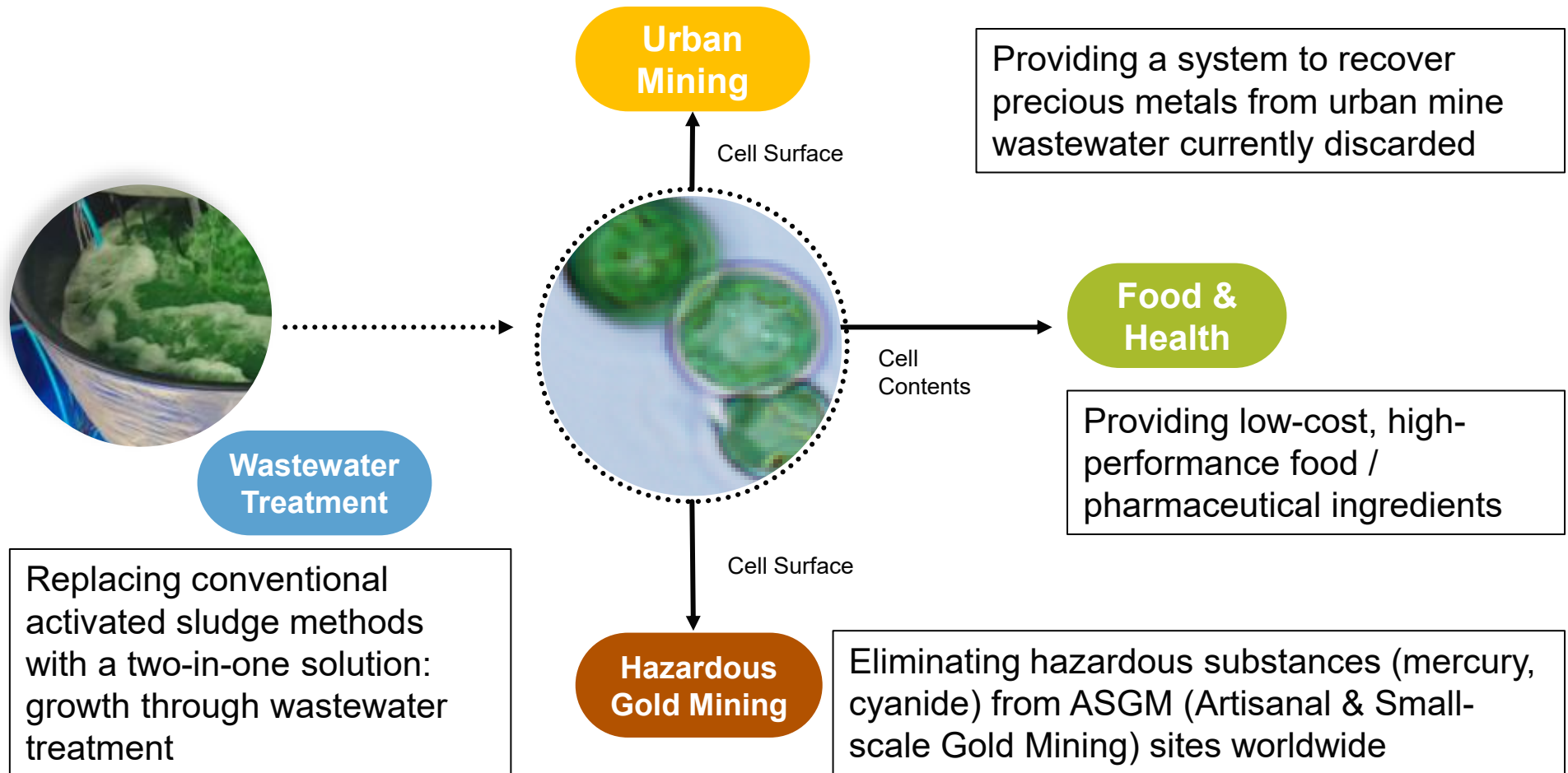
Galdieria Co., Ltd.



Galdieria Business Vision

Extracting multiple values from a single biological resource to achieve a Circular Economy

Social Challenges We Solve



MISSION

Establish an optimal ecosystem
for Earth and all living things

Establish optimal ecosystem
for earth and all living things



VISION

Materialize an environmentally and economically sustainable
circular economy through R&D of extremophiles

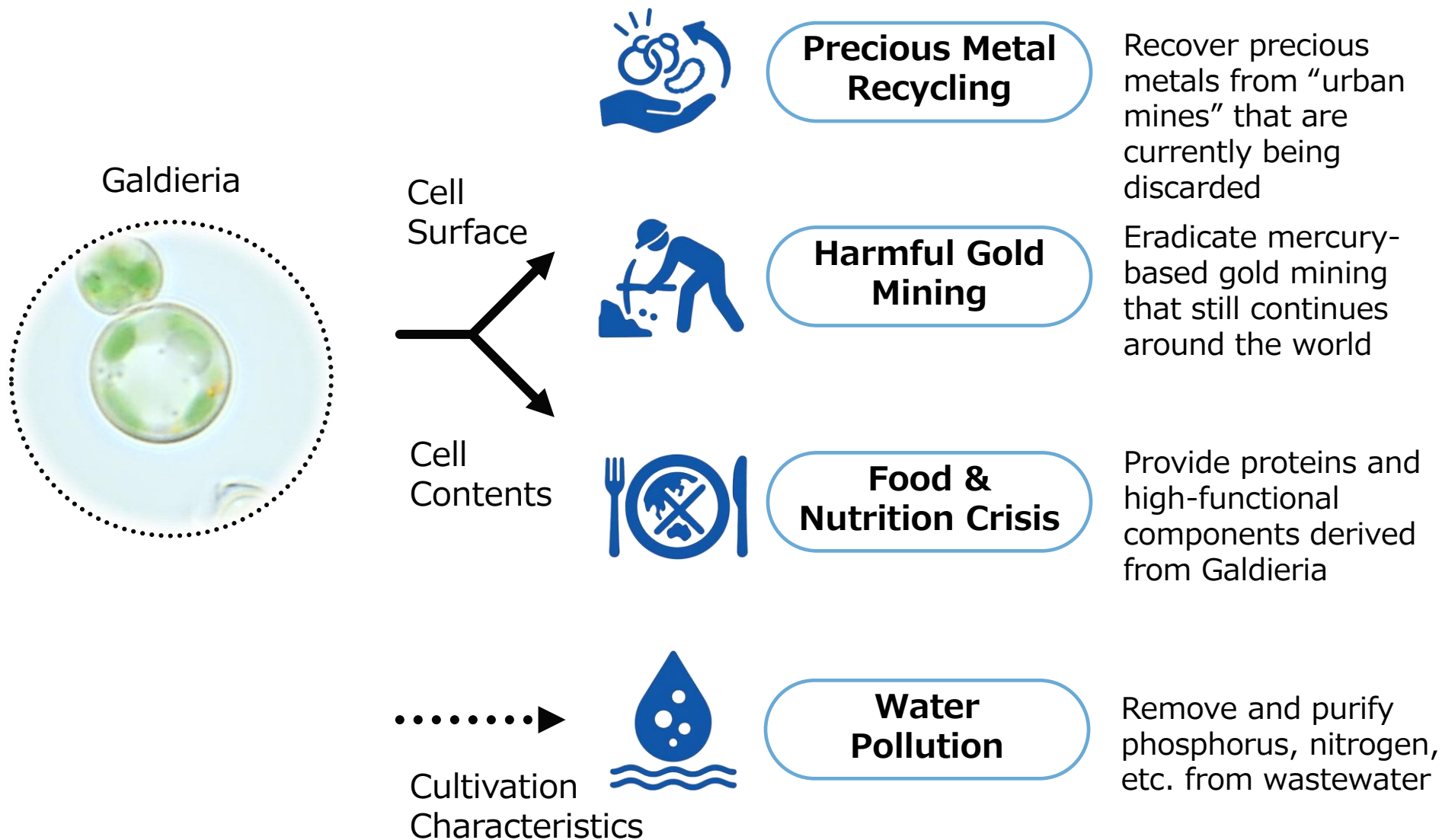
Materialize eco-friendly and self-sustainable circular economy by
advancing R&D of extremophiles for earth and all living things

Company Overview: Galderia Co., Ltd.

Company Name	Galderia Co., Ltd.
Founded	September 9, 2015
Representative Director	Tadashi Tanimoto
Employees	16
Location	HQ: 2-4-2-709 Nihonbashi-Hamacho, Chuo-ku, Tokyo Lab: Leading Venture Plaza Bldg. 2, 75-1 Ono-cho, Tsurumi-ku, Yokohama, Kanagawa, Plant: 930-1 Tsukamoto, Kannami-cho, Tagata-gun, Shizuoka
Capital History	Selected for NEDO PCA Program; raised ¥550M total incl. Miyako Capital, Kankyō Energy Investment Raised ¥400M from Arakawa Chemical Industries & Shin-Nippon Denko via J-KISS (convertible note)

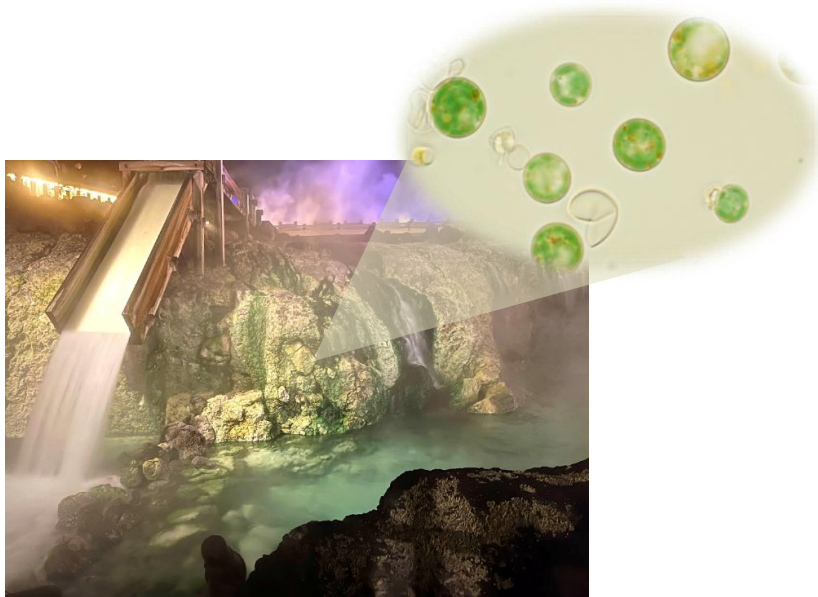


Social Issues We Tackle – Overview –



Our Technology: Hot-spring Red Alga Galdieria

Galdieria is a sulfuric hot-spring red alga and adsorbs gold, platinum, palladium and other PGMs



Acidic hot springs (e.g., Kusatsu)

Key Features

- ① Can grow in **extreme environments**
 - pH0-4, 37-56 °C
 - Resistant to contamination
 - Can grow both autotrophically (photosynthesis) and heterotrophically
 - Absorbs phosphorus and nitrogen
- ② Adsorbs trace amounts of **precious metals** (Gold, Platinum, Palladium, Rhodium, Ruthenium, Iridium) in solution onto the cell surface
- ③ Contains good amount of **nutrition**

Production Plant in Japan



Kannami Plant

Our main plant for integrated process from cultivation, harvest, processing, and packing is located in Shizuoka prefecture, Japan.

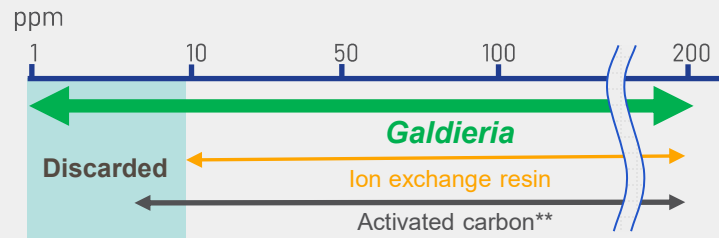


Galdieria strengths

Galdieria recovers precious metals (Au, Pt, Pd, etc.) under extreme conditions—ultra-dilute, strongly acidic (e.g., aqua regia), and base metal-rich environments



Highly Sensitive

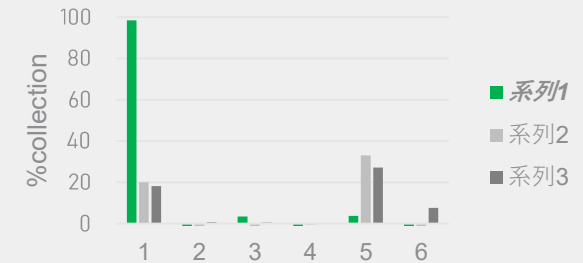


* Pd in 4M aqua regia

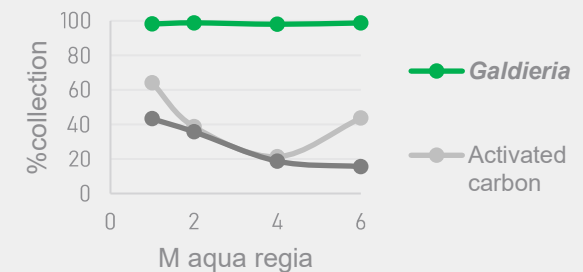
** Activated carbon is more sensitive than resin but not used because of more difficult handling requirement



Highly Selective



Tolerant to Acid



* 10 ppm Pd

1. Other PGMs: iridium, ruthenium, rhodium, etc.
2. Parts per million; 1 ppm indicates that 1 mg of precious metal is contained in 1 L of solution.

Target Metal



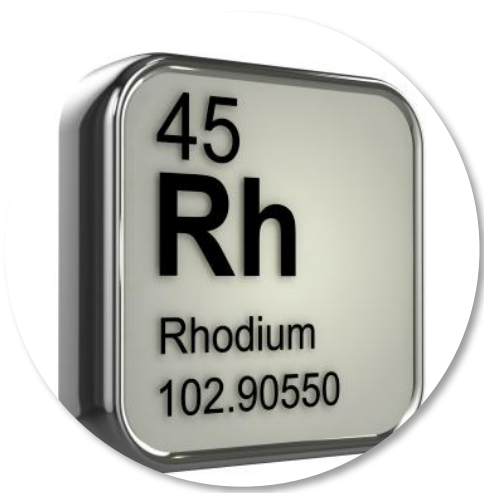
Gold



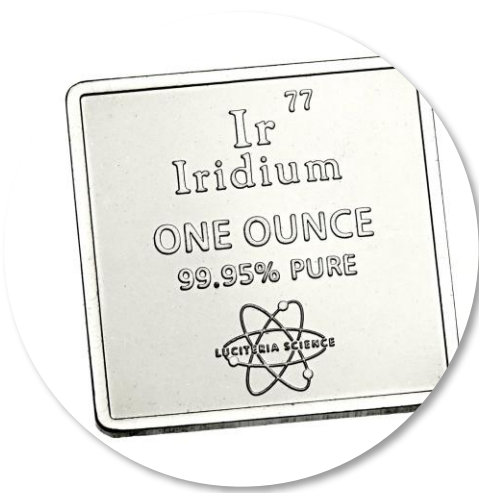
Platinum



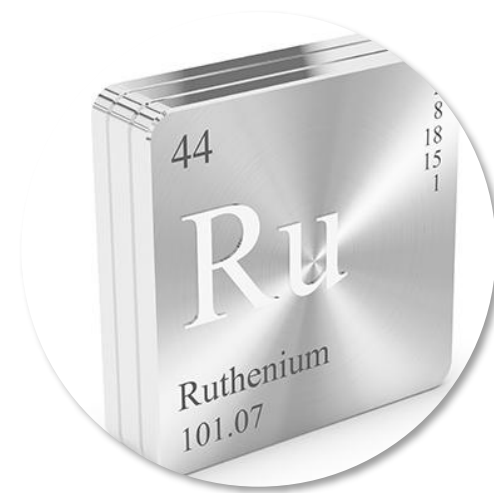
Palladium



Rhodium¹



Iridium



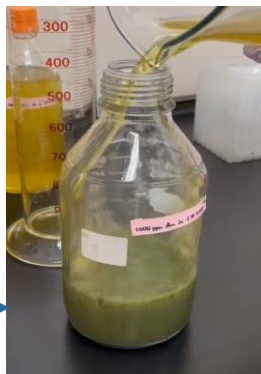
Ruthenium

Precious Metal Recovery Using Galdieria Adsorbent

By passing solutions through our proprietary adsorbent made from Galdieria, precious metals in the solution can be recovered with high efficiency.



Gold-containing wastewater(aqua regia)



Mix with adsorbent



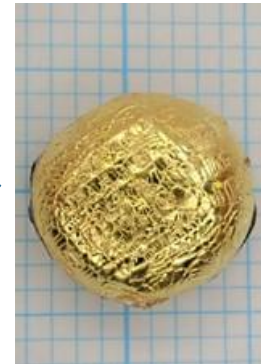
Stir adsorbent with wastewater



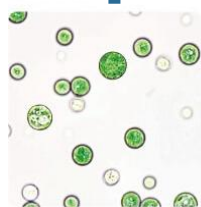
Remove the adsorbent with adsorbed gold



Calcination



Remove outer ash
Re-calcination



Galdieria adsorbent

Note: In practice, wastewater is passed through a column packed with the adsorbent, and adsorption proceeds sequentially.



Sell the recovered gold and cash back to the customer

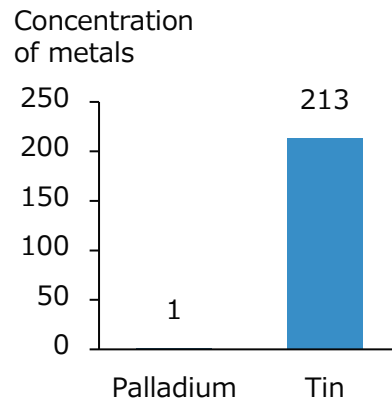
Success case with a Japanese Plating Company

We released the World's First commercial bioadsorbent platform to recover Pd from ultra-low concentrations at Japanese plating company

Before *Galdieria* System

Ion-exchange resin did not work

- Ultra-low concentration (~1mg/L)
- Much higher concentration of other metals such as tin



Galdieria System

Galdieria system makes it

- Highly sensitive : recover precious metals from diluted solution
- Highly selective : recover only precious metals
- We combine a pre-treatment mechanism to reduce Tin



We estimate wasted Pd per month is 9g and we recovered 8g (87%) from the waste

<https://galdieria.com/en/news-20260605-2/>

