
ITOPP

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Liberation of Valuable Ore

Improve Ore Quality Through
High-Voltage Pulse Selective
Fragmentation



from **spark** to **lightning**

Selective fragmentation of valuable minerals with Electro Pulsed Crushing System

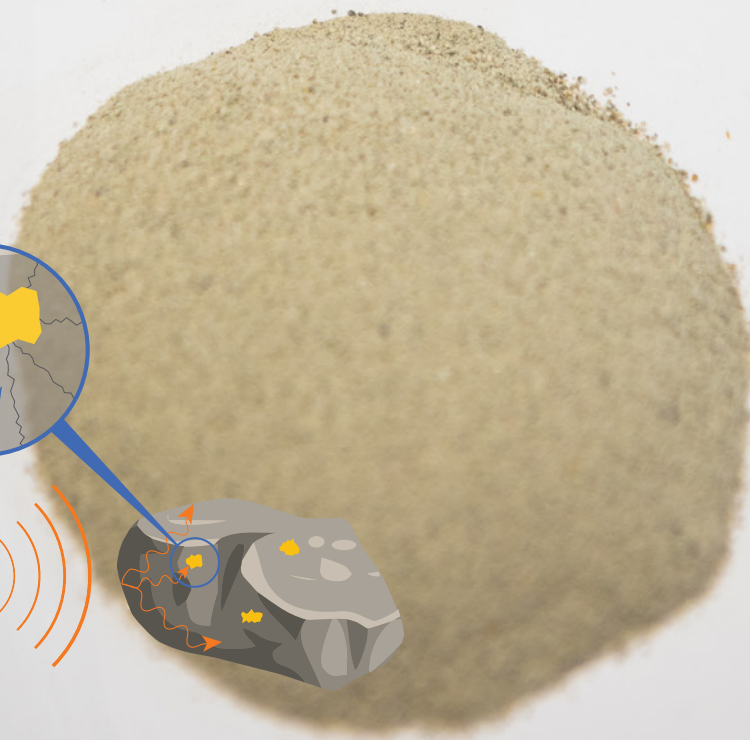
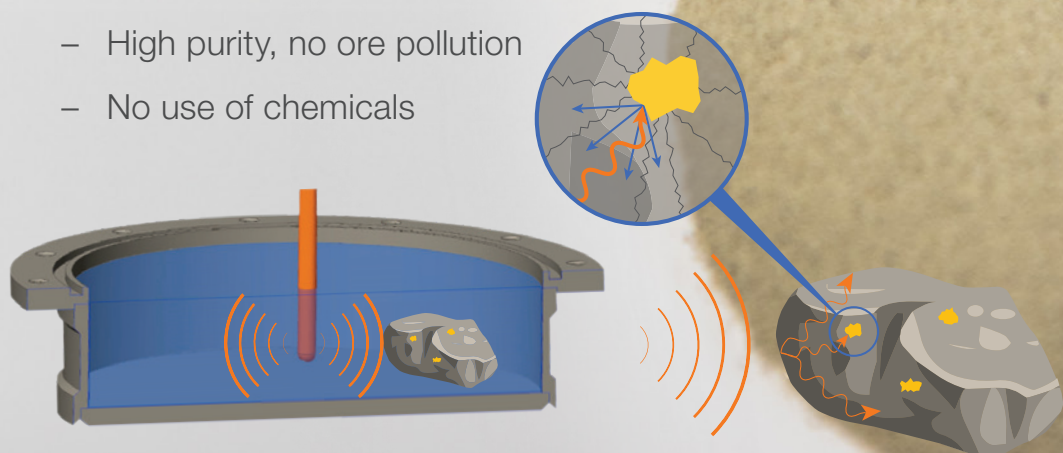
ITOPP has developed an Electro Pulse Crushing System (EPCS) based on shockwaves generated by electrical discharges to selectively fragment the ore.

This specific technology employs controlled high-voltage electrical pulses to break down materials into smaller fragments while preserving valuable components. This process involves shockwaves moving through the rock, creating cracks at mineral grain boundaries instead of randomly.

- Releases valuable components from raw materials without excessive grinding or the need for chemicals.
- Selectively targets the weakest or least conductive portions of the material, breaking them apart.
- Affects non-valuable or waste components while preserving valuable minerals or components.

Selective fragmentation improves recovery of valuable minerals

- Liberating valuable minerals
- No abrasion of the ore with metals
- Greater value
- High purity, no ore pollution
- No use of chemicals



Machine features

Material reduction of 15 cm to 100 µm

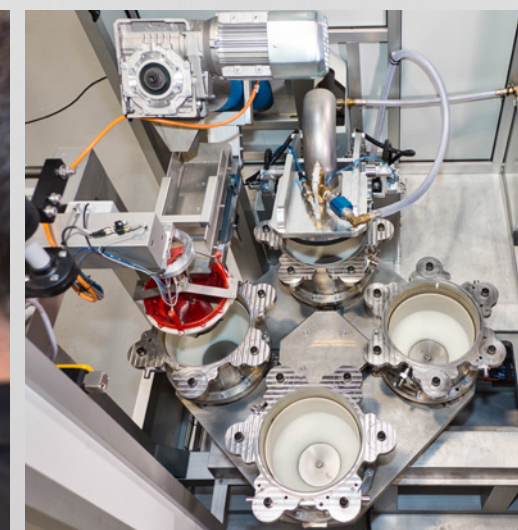
The ITOPP crusher can process between 10 and 400 kilograms and reduces samples of 15 cm in size to 100 µm.

Fully automated system, self-diagnosis during production

The machine is operated by a single operator. The crusher is composed of a conveyor system with 5 processing bowls, allowing a continuous treatment.

For laboratory use or to complement a specific industrial process.

Outer dimensions (L x l x H)	6,300 mm x 3,500 mm x 2,600 mm	
Weight»	6,000 kg	
Power	10 kW 400 V AC or 600 V AC	
Processing capacity	10 kg to 400 kg / day 2 kg / processing bowl	
Maximum initial sample size	15 cm	
User interface	Remote control and self-diagnosis	
Pulse characteristics	Voltage	290 kV
	Pulse frequency	from 0.1 Hz to 5 Hz
	Energy	250 J – 1,000 J
Sound level during treatment	80 dB(A)	





With more than 25 years of existence, ITOPP has become the French leader in pulsed power and high-power microwave technologies. Based on the customer's specifications,

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ITOPP designs and manufactures highly innovative adapted systems related to these technologies for scientific research as well as civil and military applications.

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