



Gap Analysis at the Start of New Process Development

Challenge

Existing technologies for recycling platinum group metals (PGMs) require multiple purification steps with long lead times and large inventories of precious metals.

Associated changeover and cleaning downtime was estimated as equivalent to one-month offline per annum - with a substantial associated "invisible factory" cost.

Johnson Matthey engaged in a collaborative research and development programme to develop an improvement approach to recycling PGMs, but needed a framework for dialogue with partners who were from different market sectors in order to scope out the programme and agree priorities.

Approach

Britest facilitated a large process study involving scientists and engineers from both principals and key technology and key equipment suppliers.

Britest tools were used to gauge the range of possible pathways for the programme against business drivers and the current knowledge and evidence base available to the partners.

The Britest tools enabled the team to capture the current state of process understanding and identify areas where more knowledge would be essential for successful project

Benefits

- Minimisation of research risk and identification of uncertainty - early elimination of high technical risk options and critical gaps in process understanding spotted up-front.
- Priorities set for initial research programme - key experiments to discriminate between hypothesised mechanisms proposed.
- Key stakeholder buy-in to the approaches taken and acceptance of the value of interrogating the underlying scientific understanding of processes.
- Effective knowledge capture of the subsequent new technology developed, and a methodology to support key decisions (e.g. batch vs continuous processing).

“ The common language of Britest enabled us to establish a framework for effective collaboration between chemists, engineers, suppliers and technology partners. ”

PETER ASH, TECHNOLOGY MANAGER
Johnson Matthey Technology Centre

Supporting organisations in gaining value from process understanding

Key Features:

Client - Johnson Matthey

Industry - Application Area

Precious metal recycling - manufacturing, plant cleaning, pre-competitive dialogue

Challenge

Partners from different market sectors united by a cross-industry challenge needed a framework for technical dialogue

Solution

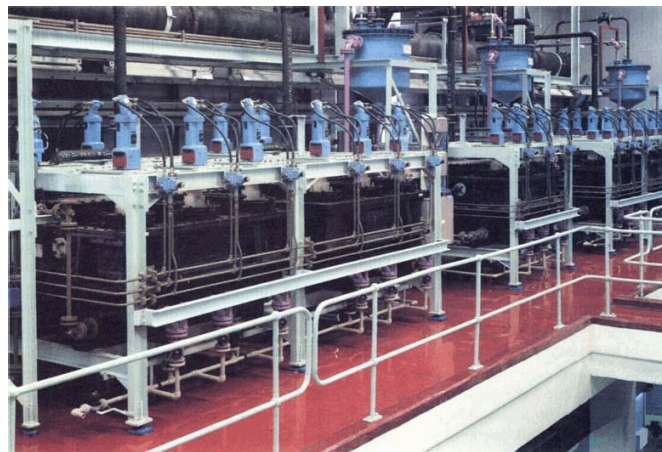
Facilitated process for open dialogue between manufacturers, equipment providers and key stakeholders

Outcomes

Minimisation of research risk and identification of uncertainty

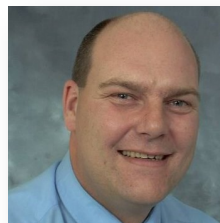
Stakeholder buy-in

A framework for effective collaboration



Counter-current mixer-settler equipment: platinum, palladium and iridium are selectively extracted from the aqueous phase by an immiscible organic solvent.

Courtesy of Johnson Matthey Technology Review



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