



Horizon2020 Information Days on Public-Private Partnerships

Brokerage event
21 October 2014

ALUMINIUM FOILS WASTE STREAMS VALORISATION

Enrico Callegati
Callegati.e@crit-research.it

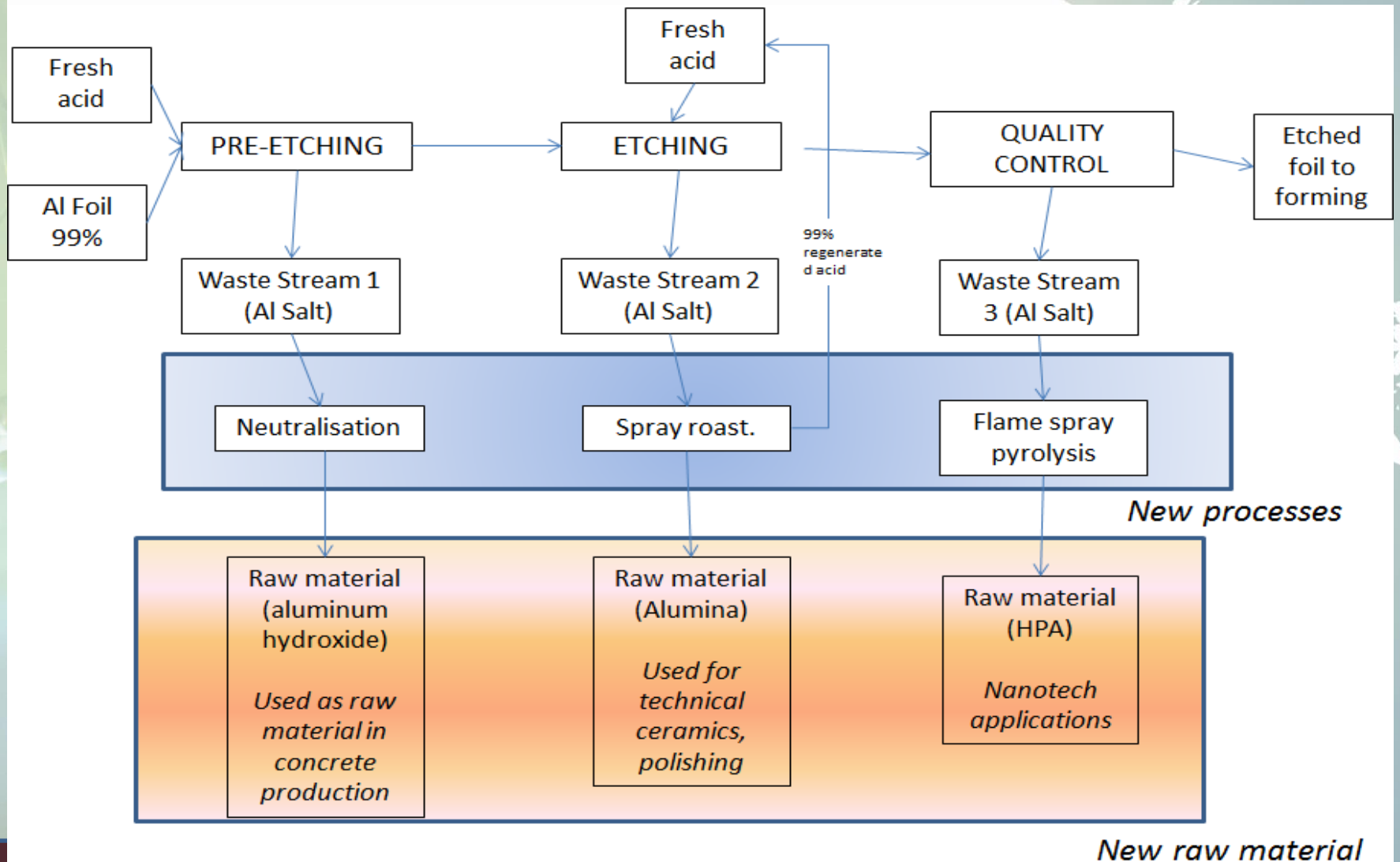


BECROMAL

ALUMINIUM FOIL FOR ELECTROLYTIC CAPACITORS

- Started in **1955** as family-run business, now owned by EPCOS (TDK group)
- Multiphase **electrochemical processing** of aluminum foils
- **Raw material for electrolytic capacitors**, used in electronic circuits and electrical appliances, power supplies.
- Manufacturing sites in **Milano, Italy** (HQ, etching) and **Iceland** (forming).
- One of the **main players worldwide**, one of the few left in Europe

INNOVATIVE APPROACH TO RECYCLE AND VALORIZE WASTE STREAMS COMING FROM ALUMINUM ETCHING PROCESS



LINKS TO SPIRE ROADMAP – H2020 CALL TOPICS

- Link to SPIRE roadmap:
 - Key Component 4 - Waste2Resource - KA 4.3: Technologies for **(pre)treatment of process and waste streams** for re-use and recycling
 - Involving **innovative business models** (commercialization of by-products in new markets – concrete, polishing, nano)
 - Shorter/medium term impact measures – new plant to be ready by 2017
- Link to SPIRE-07-2015 Recovery technologies for metals and other minerals:
 - *Innovative technologies for **minerals and metals treatment** from waste streams*
 - *Solutions should be **easily integrated** with the currently existing plants/technologies*

EXPECTED IMPACT – 1

- Increased **resource efficiency** in aluminum foils production;
- Reduce **dependency from imports** (HPA now mainly imported from US, China, Japan);
- New, **more sustainable way to obtain alumina** (see Danube red mud disaster in 2010)
- Improved sustainability of **downstream user processes** (i.e. polishing, technical ceramics, concrete production)

EXPECTED IMPACT – 2

- Innovative **business model** (selling by-products and not just aluminium etched foils)
- Life cycle **assessment**
- End users:
 - High quality Alumina powder currently used as a raw material in **high-tech ceramics, precision polishing, etc.**
 - Other **process industries** (magnesium, nickel, chrome) for **cross fertilisation**

CONSORTIUM

- Existing:
 - BECROMAL (Italy – Large Industry) – Plant owner, technology developer
 - ISTECCNR (Italy - RTD) – Process and new by-products characterisation & testing
 - SINTEF (Norway – RTD) – Life Cycle Assessment
 - Scholl Concepts (Germany, SME) – End user (polishing products)
- Needed:
 - **Coordinator?**
 - Other process industries for cross-fertilisation (non ferrous metals)
 - Other end users (technical ceramics, concrete industry)

CONTACT DETAILS

Enrico Callegati - CRIT Research
Via Confine 2310, 41058 Vignola (MO)
Tel +39 059 776865
callegati.e@crit-research.it
www.crit-research.it