

Development of an acidic shape-selective mineral catalyst added pelletised fuel from organic wastes (ASMICAF)

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**BIO-ENERGY
ENLARGED PERSPECTIVES**

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The CRAFT Consortium

TECCON INNOVATION

Coordination; Intelligent Control Technology (D)



Waste Management (E)

SME



Waste Management (D)



HT Pyrolysis (UK)



Process Control (F)

RTD



Research, Environmental Engineering (D)



Research, Chemical
and Environmental Engineering (E)

Essence of ASMICAF

- Solid Secondary Fuel from organic waste (Pellets)
- Solution for hard to treat organic wastes
- Inertisation of Halogenides and Heavy metals during production and use of the pellets
- Additives for tar prevention during pyrolysis
- Production of Energy from waste, electrical energy, heat and/or hydrogen
- Conservation of fossil fuels
- Economically feasible even on smaller scales
- Unleachable Residues can be used for construction purposes

Whats in?

Waste Fractions

- Non Recyclable Industrial Waste
- Light shredder fraction from Car-recycling
- Sewage sludges
- Municipal Solid Waste
- Loaded Activated coal or other adsorbents

Additives

- Lime
- Coal
- Catalysts
- Adsorbents

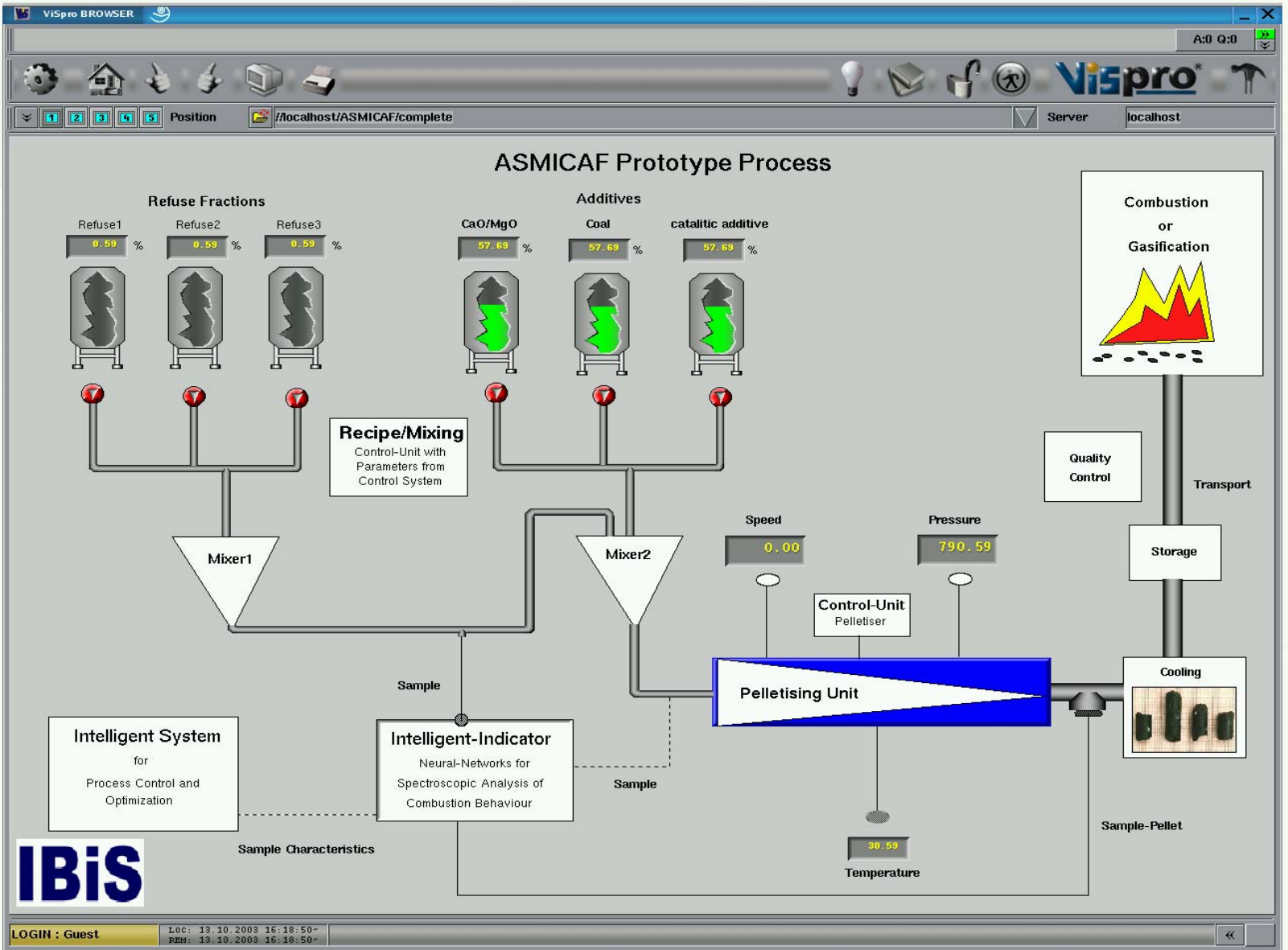


High Pressure Pelletising



Process steps

- Mixing of the composition based on a computer controlled adaptive recipe generation
- Pressing of a solid fuel (pellet) under special conditions
- Storing for settling of chemical reactions
- Combustion or High Temperature Pyrolysis
- Steam and electricity generation or Gas Motor with cogeneration of heat and power
- Almost no emissions in the flue gas and the residues can be used for construction works



Adaptive Intelligent Process Control

- Adaptive recipe adjustment on changing refuse fractions
- Based on Spectroscopic information
- Quality assurance of the product
- Process Monitoring
- Use of available sensorics

Economics

- Only low cost additives are used
- Profitable even on small scale (22.400 t/a)
- Profit from Waste acceptance
- Profit from sale of electrical energy
- Profit from sale of heat energy
- Profit from possible generation of Hydrogen in the future
- Possible selling of the residues as construction material
- Low costs for Flue-Gas cleaning
- New governmental regulations that forbid EU-wide disposal of untreated wastes, will boost the European market

Conclusion

- ASMICAF provides Clean Energy out of solid fuel from organic wastes
- Is economical profitable even on smaller scales
- Conserves fossil fuels
- Can adjust its recipes to changing refuse fractions
- Has an Hydrogen option for the future