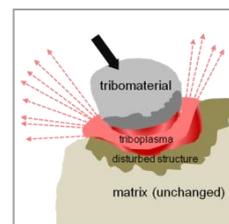




MechanoChemistry

new structures and applications by Simoloyer®
solvent-free ☀ CO₂-low ☀ cost efficient
resource efficient chemical synthesis
high kinetic processing for environmental friendly production



Industry

Chemical industry

synthesis/manufacturing of fine chemicals at lower costs | higher efficiency | environmentally friendly | less or even no solvents | less VOC

Pharmaceutical industry

production of drugs at little or no contamination | small to high quantities | lower costs | higher efficiency | single step processes

Food industry

production of food additives at lower costs

Stainless steel industry

efficient recycling of EAF dust | sustainable waste management | less recycling costs

Product/innovation ready to market proved

technologically

→ dioxine decontamination by Simoloyer® proved and patented

economically

→ cost effective production of various compounds by single step process proved

ecologically

→ recycling of EAF dust by leaching of zinc after HKP

Technical advantages

scalability

batches from few g to kg proved, tonnes possible

processing

batch operation as well as continuous operation possible

purification

dry process avoids solvents and low contamination

application

Simoloyer® plant instead of reactors

Cost advantages

solvent-free

→ less costs for supporting media, less waste management costs

high energy impact

→ shorter processing times

few to no contamination

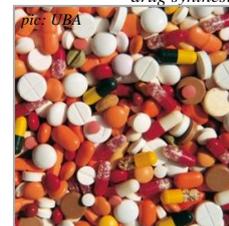
→ less efforts for purification necessary

Schedule & volumes	option (a)	option (b)	option (c)
equipment scale Simoloyer®	CM100-MC	CM400-MC	CM900-MC
	estimated annual production [t]		
5-vanillyden barbituric acid (precursor)	50	200	446
sodium tartrate (food additive)	46	182	408
ureido-glucose (precursor for antibiotics)	64	254	567
	total cost / sales [€/kg], full cost calculation, GER 2017-01		
5-vanillyden barbituric acid (precursor)	272	268	267
sodium tartrate (food additive)	105	101	100
ureido-glucose (precursor for antibiotics)	48	45	45
	time-scale, set-up/start of the new production/product line		
	10 months	16 months	20 months
total cost at partner Zoz [Mio€]	1.0	1.7	2.5
total cost at partner a, b [Mio€]	tbc	tbc	tbc

Simoloyer® CM01-s1
(auto-batch)



drug synthesis



References

EAF recycling

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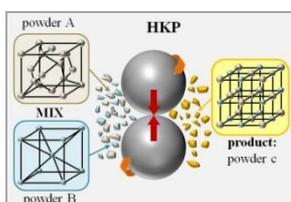
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Dioxine decontamination

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dioxine decontamination



chemical synthesis by high kinetic processing



HKP on technical scale



Zn EAF dust recycling