

Innovation in Surface Technologies Saarbrücken, Germany

Contacts
HSM TechConsult GmbH
Im Königsfeld 29
66130 Saarbrücken, Germany
Phone: +49 (0) 681 87 26 34
Moblle: +49 (0) 171 741 57 50
+49 (0) 151 46 66 35 97
+49 (0) 151 62 51 13 15
E-Mail: schmidt@hsm-techconsult.de

New Surface Technologies Through Innovative Materials



The company

HSM TechConsult GmbH

Saarbrücken, Germany

Management

Director/Executive Partner:

Prof. Dr. H. Schmidt

New Business Development:

Dr. Ch. Schmidt Contracts, IP:

H. Schmidt

HSM stands for

- Consulting companies in the area of new surface technologies
- Setting up interdsciplinary projects from the idea to production
- Controlling projects and IP issues
- Coaching/Training

Background

Fraunhofer Organization: ISC

Würzburg, Director

Leibniz Institute for New Materials

Managing Director and Scientific Head)

EPG: CEO

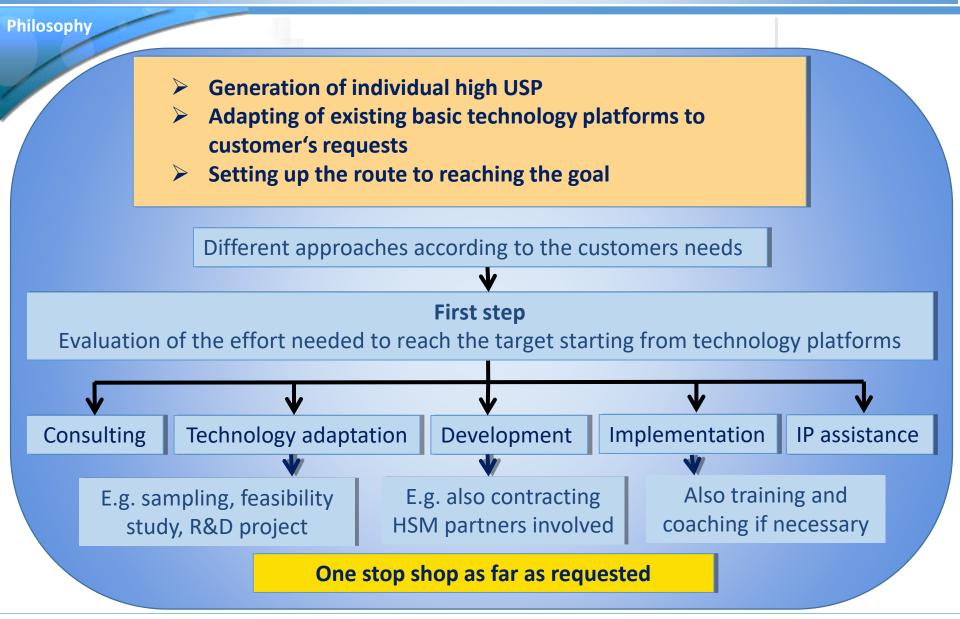
HSM: Managing Director

Partners: SurFtech, Universities

- Pioneering chemical nano materials and applications since 1975
- Long term experiences in science, technology and production
- Many successful products on the market

Our Way of Operation

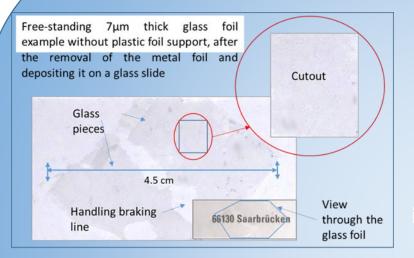




Ultrathin Glass Films



Technology Platform









Basics

Wet coating of a thermally stable carrier foil, tranfer into a glass film, transfer on a support and removal of the carrier foil

Technology

Fabrication of (sol-

gel based wet coa-

ting) thin glass on a

carrier foil and trans-

fer onto the sub-

strate to be coated

Upgrade

additional functions, texture, mulilayer, colours

IP

Patent pending; licensing and sales; technology and know-how transfer, consulting

Status of the technology

Laboratory samples; broad characterization and testing presently performed

Application and Potential

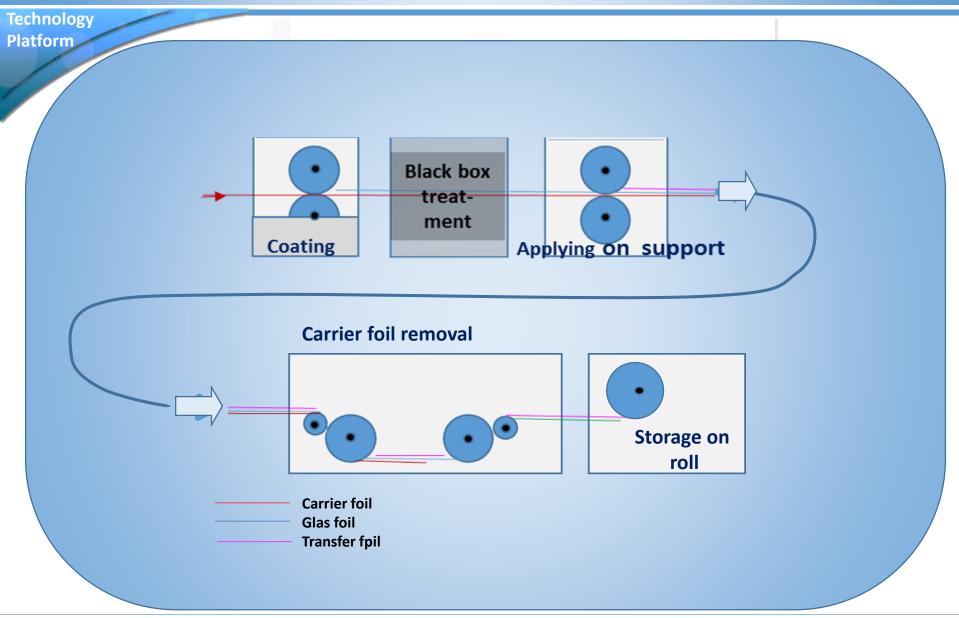
optics, display, textiles, automotive instruments, wood, plastic etc. etc.

For production

E.g. batch, contious spray and roll to roll, spin, curtain possible

Continuous Production Conception





Heavy-duty Abrasion Resistant And Anti-stick Coatings



Technology Platform



Latex emulsion, dried)

Basics

Thermally curable oligomers and specially processed ceramic additives; durable antistick effect, e.g.: Latex emulsions

Status of technology

Lab finished, anti stick on Latex customer approved; process; scalable; low to medium level temperature curing

Upgrade

Flexible multicomponent system, adaptable to many applications through propertiy tuningn to many customer requests **Technology**

Multicomponent thick film (up to 70 μm in one step) coating abrasion resistant, corrosion protection

Application potential

Transport of sticky goods; chemically reactors, valves, tubing and piping, pressing tools



IP

Know-how based; patenting possible

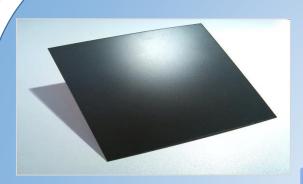
For production

Synthesis route for small scale dimension; any type of wet coating technology applicable

Easy to Clean And Sterilizable Anti-Static Coatings









Basics

Sol-gel hybrid matrix with special conductive µm and sub µm size particles with controllable conductivity

Upgrade

additional funcions, colourless/tanslucent possible

ΙP

highly secret know-how: patenting possible

Status

Lab material finished; customer tested;
sterilizable; 120 alkaline
cleaning/sterilization
cycles: no change in
hydrophobicity; cigarette ash test

o.k.

Technology

Combination of different properties and one and the same coating material: corrosion protection, antistatic and easy to clean properties

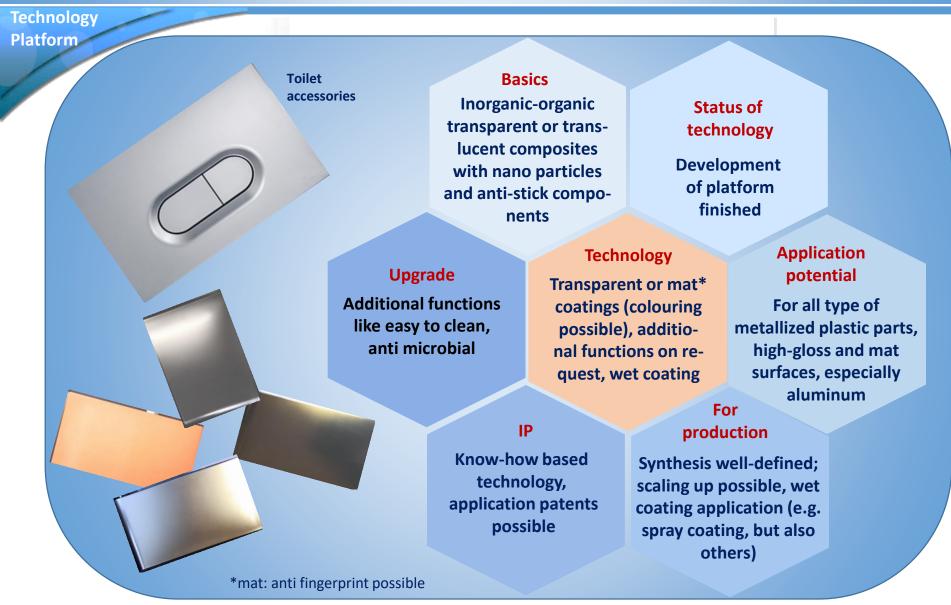
For production

Synthesis route well defined; applicable by any type of wet coating technology; low-temperature curing

Application and

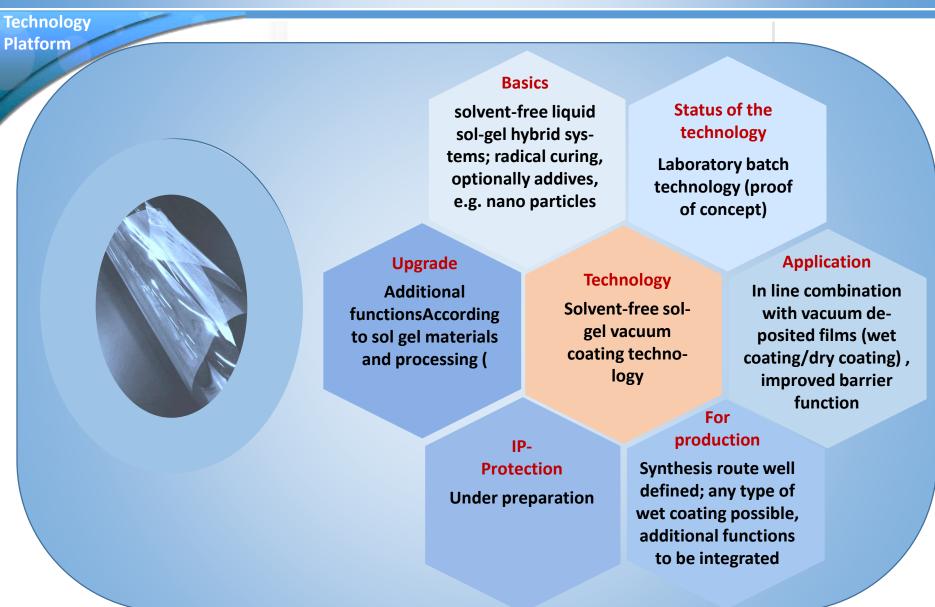
Enobling Metallized Plastic





Tranparent Sol-Gel Vacuum Coating Technology





Transparent Hard Coatings



Hard coating on transparent plastic: Up to 8H pencil hardness (e.g. on PMMA

Basics

hybrid materials
with and without
nano particles,
thermally and, photo
and flash curing

Status of technology

Laboratory technology finished, hardness tested; pencil: up to 8- 9H; Newton pen hardness: > 10 Nm:

Upgrade

Thick layer technology possoble; third functions to be incorporated; colouring, eassy to clean, antimicrobia, barrier

Technology

Transparent sol-gel nano com-posites with special composition, preparation, and low T thermal curing

Aapplication potential

Any type of solid metal and plastic surface, specific adaptation to many plastic surfaces, e.g. automotive glazing

IP

Secret know-how based; patenting in preparation

For production

Basic synthesis route defined; any type of wet coating possible



Thank you very much for your attention