

“How do I find the right pretreatment for my process”.

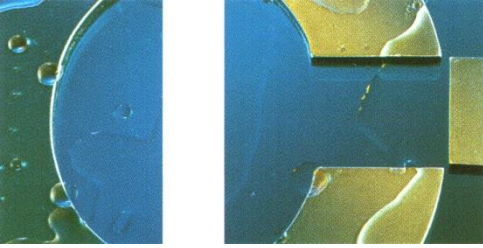
Aluminium 21/ Surface Treatment &
Finishing Moscow 2017

CANDOR Sweden AB

Jörgen Pettersson

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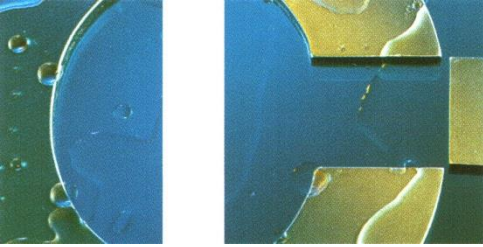


CANDOR Sweden AB

- Established in 1946
- Swedish Owned Company
- Head office in Sweden with subsidiaries in all Nordic countries
 - 50 employees
 - ISO 9000 and ISO 14000 approved
- Supplier to the Nordic surface treatment Industry

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Our service

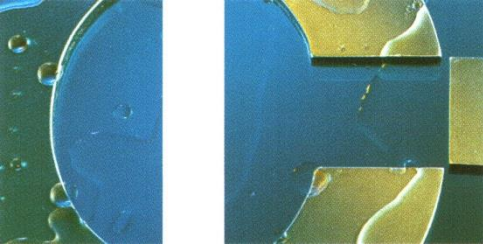
WWW.CANDORSWEDEN.COM

- » **Special chemical products**
- » **Equipment for surface treatment**

- » **Consulting**
- » **Engineering**
- » **Education**
- » **Customer service**
- » **Technical support**

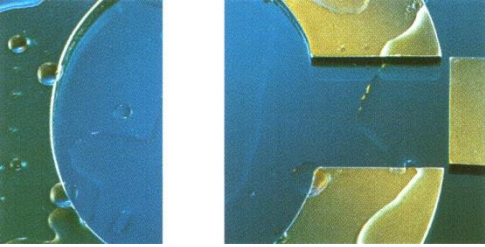


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Introduction

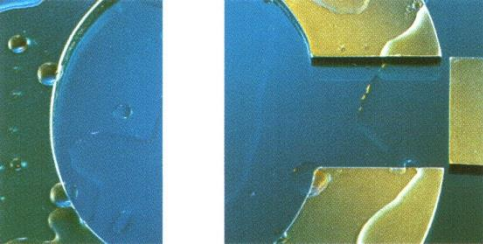
- This presentation will be a summery of Candors experience with new chrome free technology
- And guide to "answer" the question "how to find "Your" process"
- Show some industry projects and experience



- Scandinavian companies was very early to ask for New Technology products
- Candor started early, 1997 to introduce , test chrome free products for aluminium, zinc & steel as pretreatment before painting.
- Since 2002 Candor has, customers for both profile aluminium, die cast aluminium as well as for Zinc alloys and steel with good results

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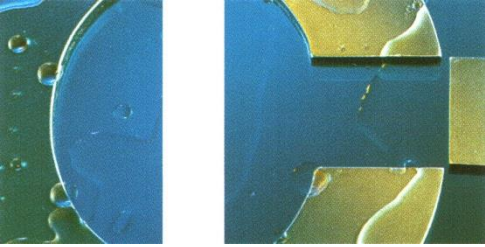
Focus in the industry today? Increased environmental demands



- **European directives:**

- **WEEE** - (Waste Electrical and Electronic Equipment)
- **RoHS** - (Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment)
- **ELV** - (End of Life Vehicle)
- **SEVESO** – max storage volume of fluoride and Cr based products
- **REACH** - (Regulation for Registration, Evaluation, Authorization and Restriction)
- Waste to air and water
- Cr6+ replacement
- Phosphate replacement

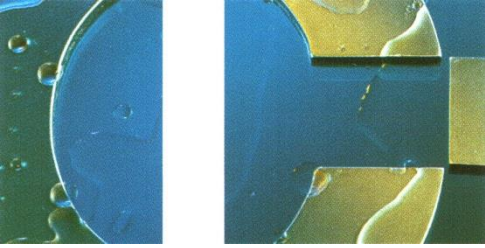




Demands/ questions from the Scandinavian Industry

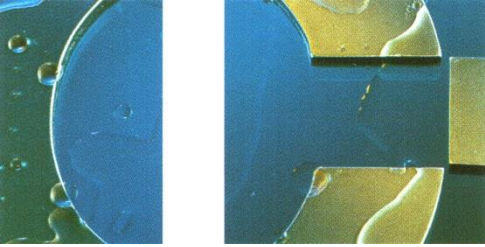
- Painted & non-painted demands
- Powder & Wet paint
- Conductiv layers (Telecom industry)
- "multimetal"
- Simple waste water treatment
- Less or no sludge
- Shorter process
- Cost effective
- How to check quality – colour ?
- Final customers demands





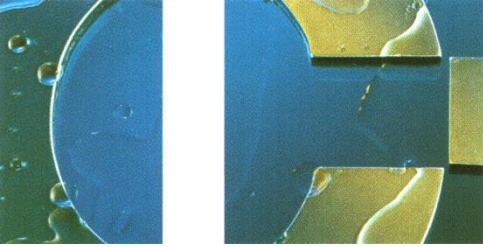
We know (Old technology)!

- Not so sensitive to impurities
- Pretreatment: cleaner, etching, deox, rinses are important but old technology are "forgiving"
- Coatings in (g/m²)
- Coloured coating



We know (new technology)!

- More sensitive to impurities
- Choice of cleaner, etching, deox, rinses has more influence on the final passivation
- Coatings in nm or mg/m²
- Mostly colourless coatings



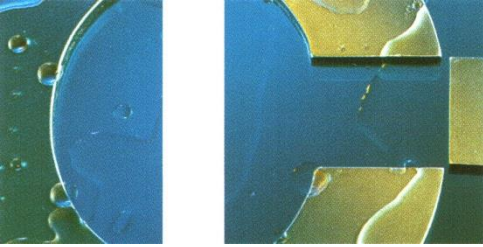
Replacement alternatives

Different products !

- Ti ?
- Zr ?
- Combination Ti/ Zr ?
- Cr 3+ ?
- Silanes ?
- Silanes/ Zr ?
- With or without polymers
- Pottasium permanganate ?
- Others ?



- Depending on metal and demands, different products are used for different applications



Industry Project



Profile
aluminium

Base station
products,
TELECOM

- "House Hold" products
(washing machine)

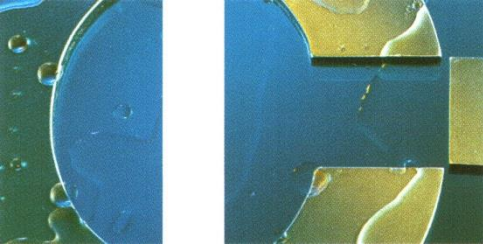


Focus on
the hatch



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Industry project

Base stations for Telecom: -Ericsson

- Conductivity demand as well as corrosion demands
- Die casted aluminium – high Si alloys
- 20 years outdoor exposure demands

Washingmaschine: - Electrolux

- – Aluminium hatch – own test method and corrosion demands
- - Die casted Aluminium and Zinc
- - Export demands

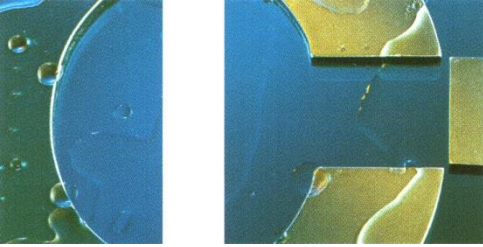
Profile aluminium: - Dancolor

- Profile aluminium alloys
- Follow GSB and Qualicoat demands

- Profile aluminium - since 2002
- Washingmaschine - since 2004
- Telecom - since 2005/2006



Investigation period was 2-4 years



Industry Project



Focus on even coating weight

Conductivity in the layer
TELECOM

- "House Hold" products (washing machine)

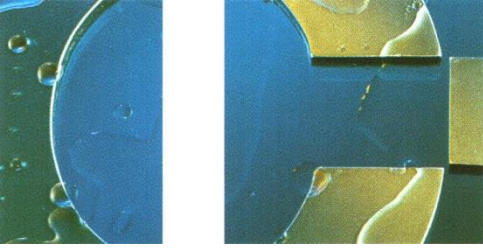


Focus on the aluminium hatch



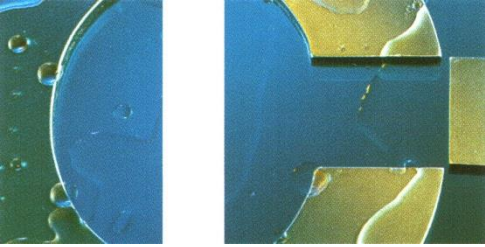
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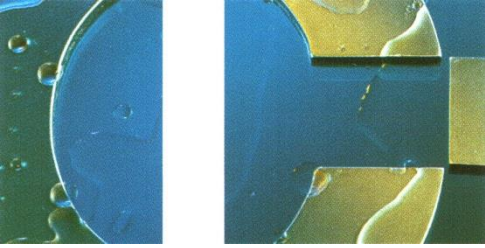
Experience No 1 One initial "problem"

- The industry is thinking yellow or green chromate and is looking for something similar.
- But reality is different.
- Colour is difficult – most products are transparent
- If not colour – how to check quality ?



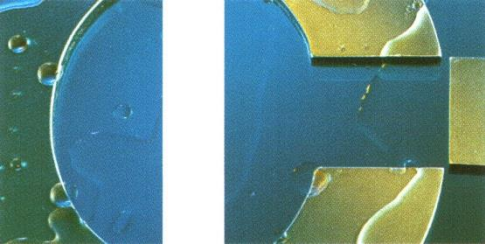
Experience No 2

- Many users, even big customers had little knowledge what they had as demand on their own products.
- "What's our demand for our production" ?



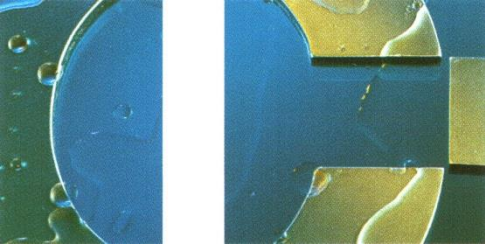
Experience No 3

- Replacement means investigation of the hole line. Not only the passivation stage
- Each stage are important regarding chemistry and equipment



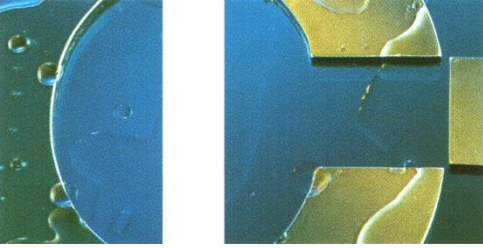
Experience No 4

- The initial test is done in lab or in small scale.
- Test results are normally good because everything is controlled.
- Testing should be done as realistic as possible



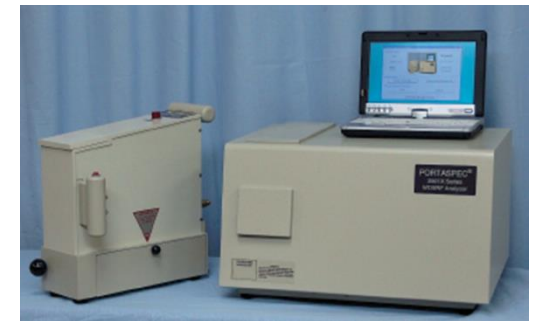
Experience No 5

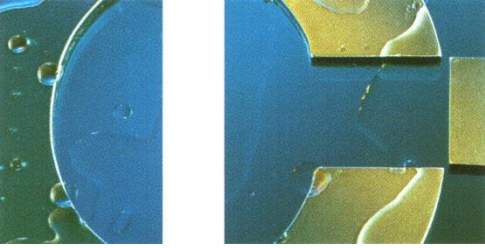
- Not all users are working with new modern lines.
- Replacement must be done often in old lines with old equipment
- Go through all steps in the line and requirements in each stage are important



Experience No 6

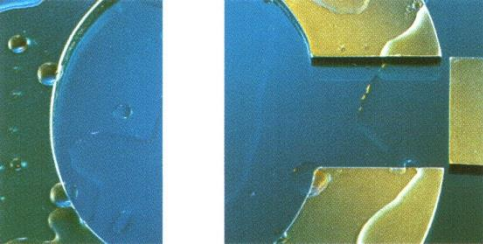
- Require good Quality control at each stage in the line
- Follow recommendations from supplier
- Quality control of the final layer





Experience No 7

- With good planning
- With good quality control and control of parameters
- With good testing and verification of the demand.
- Quality will be equal or better then "old" process technology



Rough guide line Different products !

- Al, Zn surface –
*Base of Ti , Zr , Combination Ti/ Zr ?
(with or without polymer)*

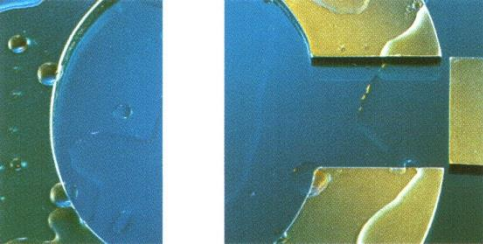


- Area with no paint/ bare metal and has corrosion demands
Base of Cr 3+

- Jobshops that paint all kind of metals (Iron)
Base of Silanes

- Coloured surface ?
Cr3+, pottasium permanganate, others ?

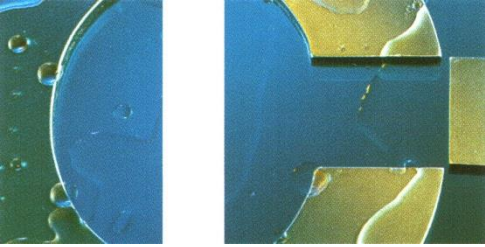




How to find ?



- Questions:
- What's our demand/ end customer demand ?
- New line or installation in old line ?
- Follow GSB, Qualicoat approval list and recommendations
- References
- Follow suppliers recommendation and experience
- Make your own tests !



Thank you

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