

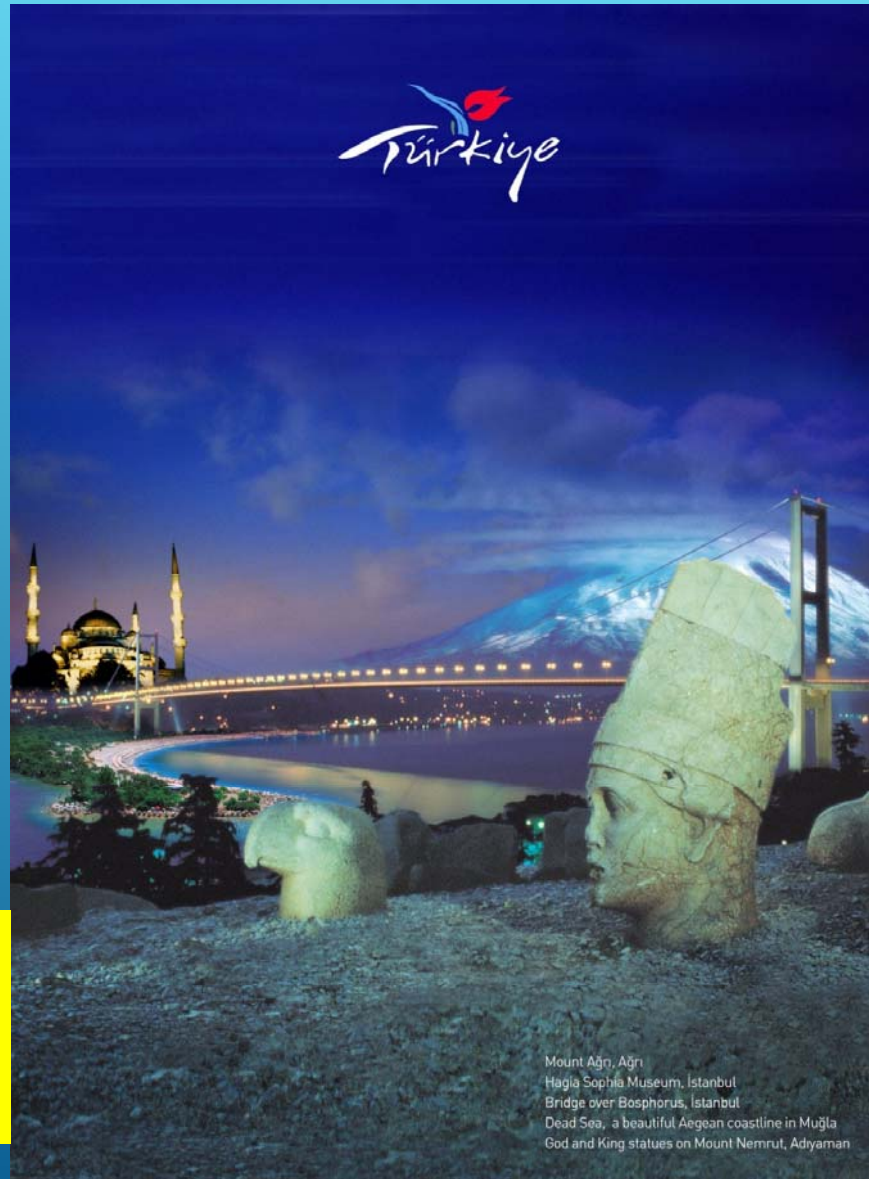
**NON DESTRUCTIVE
TESTING...**

WELDING...

EU FUNDS...

**NEW ORLEANS,
USA
SEPTEMBER
2016**

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floteks®



**Knows
How To...**

- ✓ Research and Innovate
- ✓ Design and Engineer Products
- ✓ Manufacture Molds
- ✓ Rotomold for Elite Customers
- ✓ License Innovative Products

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Good Morning, Ladies and gentlemen,



**I am delighted to attend the ARMI meeting in New Orleans,
for the 40th anniversary of ARMI, to meet many friends from
all around the world.**

The biggest achievement of ARM in USA has been to disseminate the idea of cooperation between rotomolders, throughout the world.



**All rotomolders throughout the world should thank the
founders of ARM in USA to set an example**

I am honored to be a member of this wonderful organization

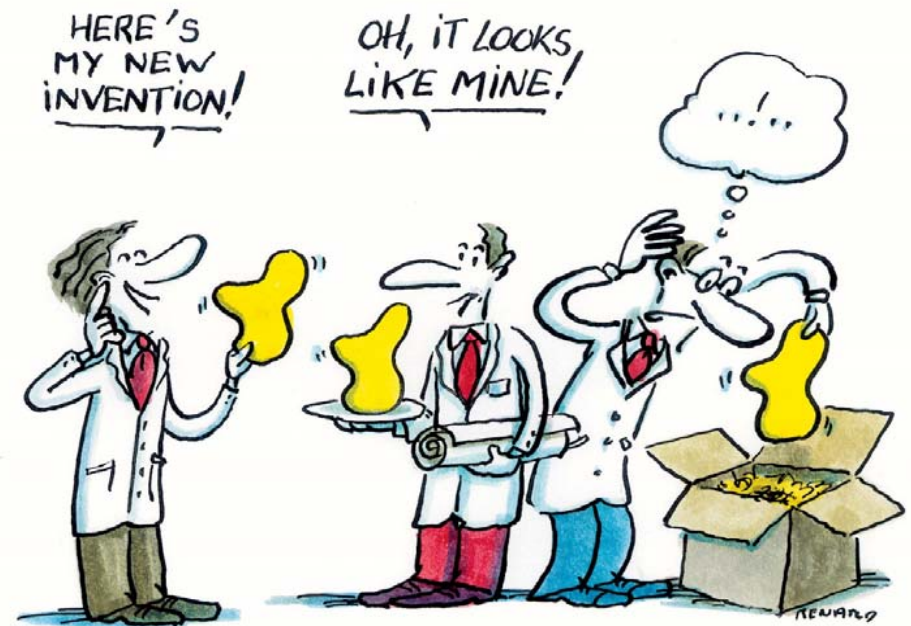
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Today, I have divided my presentation in 2 parts:

- First, I will shortly speak about Floteks and show a film of 3 minutes about my company, Floteks.
- Then, I will be talking about some of the research work we have been working on in the last 5 years, using our own as well as EU's funds.
In this part, I will show 2 films of 2 minutes each.

Starting Rotomolding in 1983, my company enjoyed being the pioneer and sole rotomolder in the Turkish market for about 10 years and grew rather fast.

In 90's, suddenly many other rotomolders appeared and we started losing some of our market to unfair competitors.



- ▶ We needed a competitive edge to survive the copycats
- ▶ My vision for a competitive edge was **to be different** and ahead of others,

researching,
developing,
innovating,



Now, the film about Floteks







Knows How To...

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Floteks is leading the
EU-SME-I Project



LEAKFREE



Floteks is the coordinator of the
EU-FP7 Project



SAFEHPOWER



Floteks is Partner in
EU-FP7 Project



DEICE-UT



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As the film suggests, we do various innovative research and development work, beside our production.

In the last 16 years,
Floteks have completed various Projects
working with turkish universities
and research institutes.

Since 5 years, we are doing
EU funded Projects...

Floteks is Partner in
EU-FP7 Project
DEICE-UT



First F7 Project Floteks was involved in was Delce UT.

With this Project,
the ice building on the wind turbine blades are being stopped
with the use of **Ultrasonic Guided Waves** and a vibration
system.

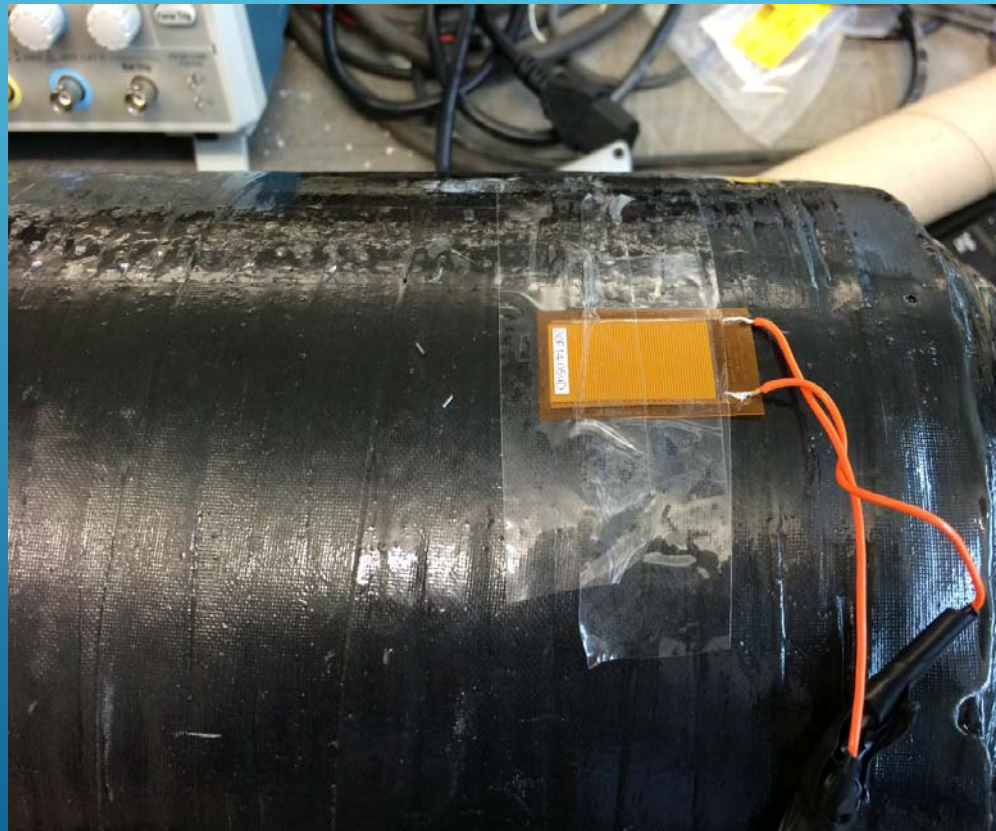
The Project was completed in August 2015, successfully.

Second F7 EU Project was called Safe H Power.
This Project would try to detect microcracks
of high pressure
Hydrogen storage
tanks





Type IV tanks
have
rotomolded PE
liners wrapped
with carbon fiber
and composit
material

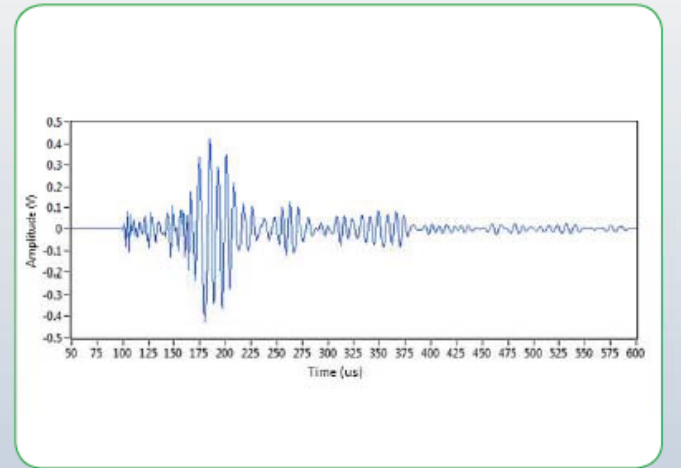




The Project was completed
in February 2016



**Miniature AE
package with
embedded
microprocesor
was
developed...**



**Typical AE signal
produced by a defect**

Floteks is leading the


EU-SME-I Project




LEAKFREE



- ▶ The latest Project we are doing is called Leakfree.
- ▶ This project tries to develop a new and reliable leak detection system for fuel tanks.

- ▶ Today, the tank producing companies make 100 % leak test on all the tanks produced.
 - ▶ There are various techniques in this area, all of them by pressurizing the tank , mostly under water .
- 
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**Pressurizing is common to all detection systems,
but the detection technique varies:**

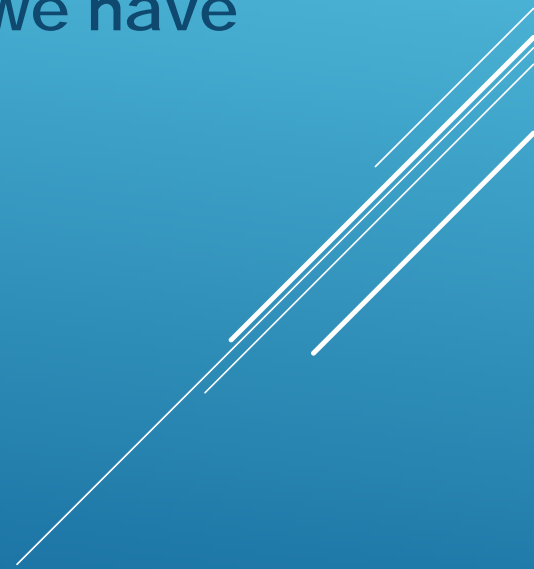
- ▶ Trying to see bubbles evolve.
 - ▶ Trying to detect pressure loss in tank
 - ▶ Trying to sense air flow into the tank, to maintain a stable pressure in the tank
 - ▶ Trying to detect bubbles with ultrasound
- 
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► As all these techniques have their own problems,
we have decided to find a different way ,
for leak detection:

detecting bubbles by just listening to them,
via hydrophones.



- ▶ Here is a 2 minute film on the Leakfree system we have developed:






We have been working
on this project
since 14 months.


The product is expected
to be ready for the market
within 2017.



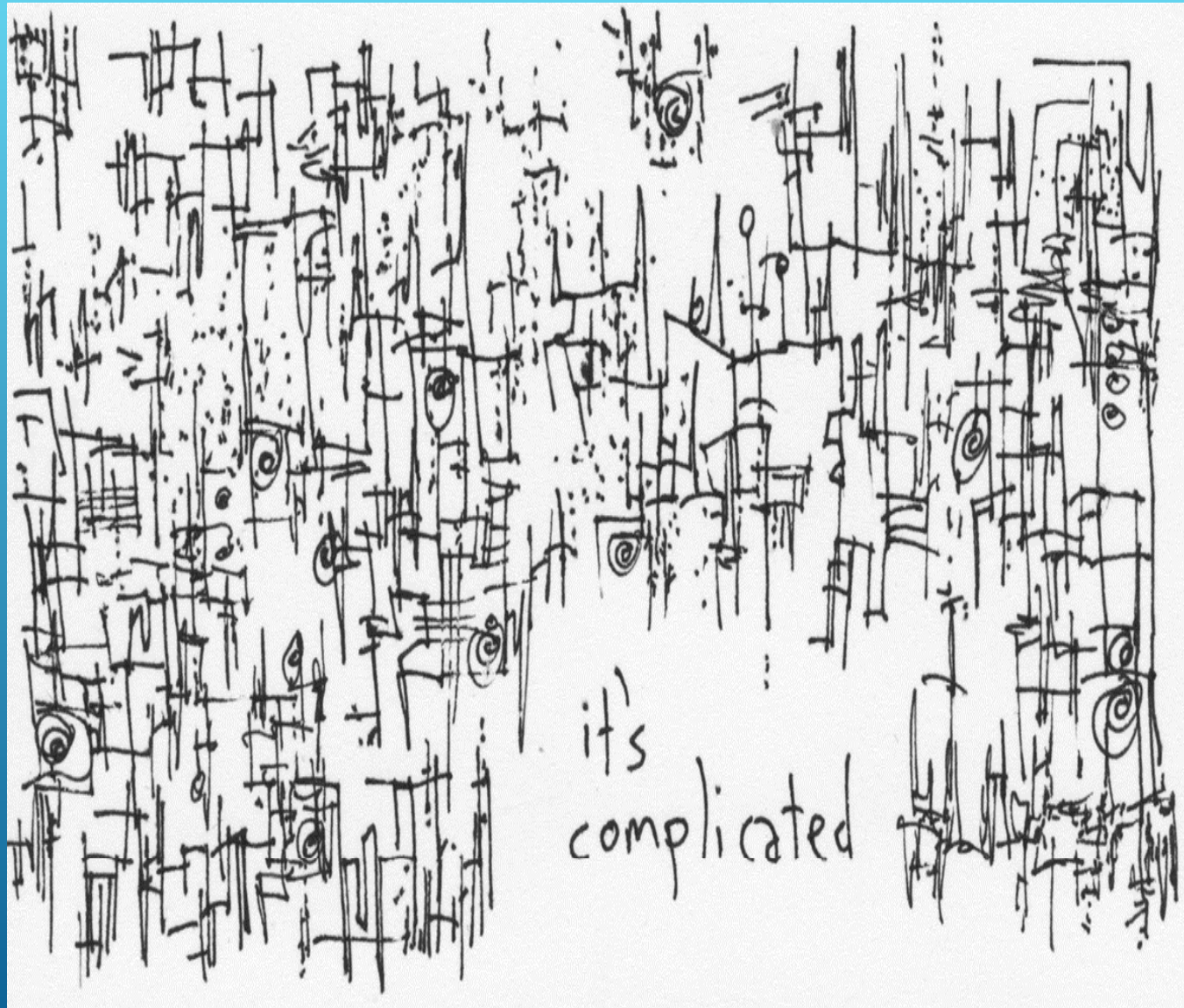
ANOTHER IMPORTANT PROBLEM:

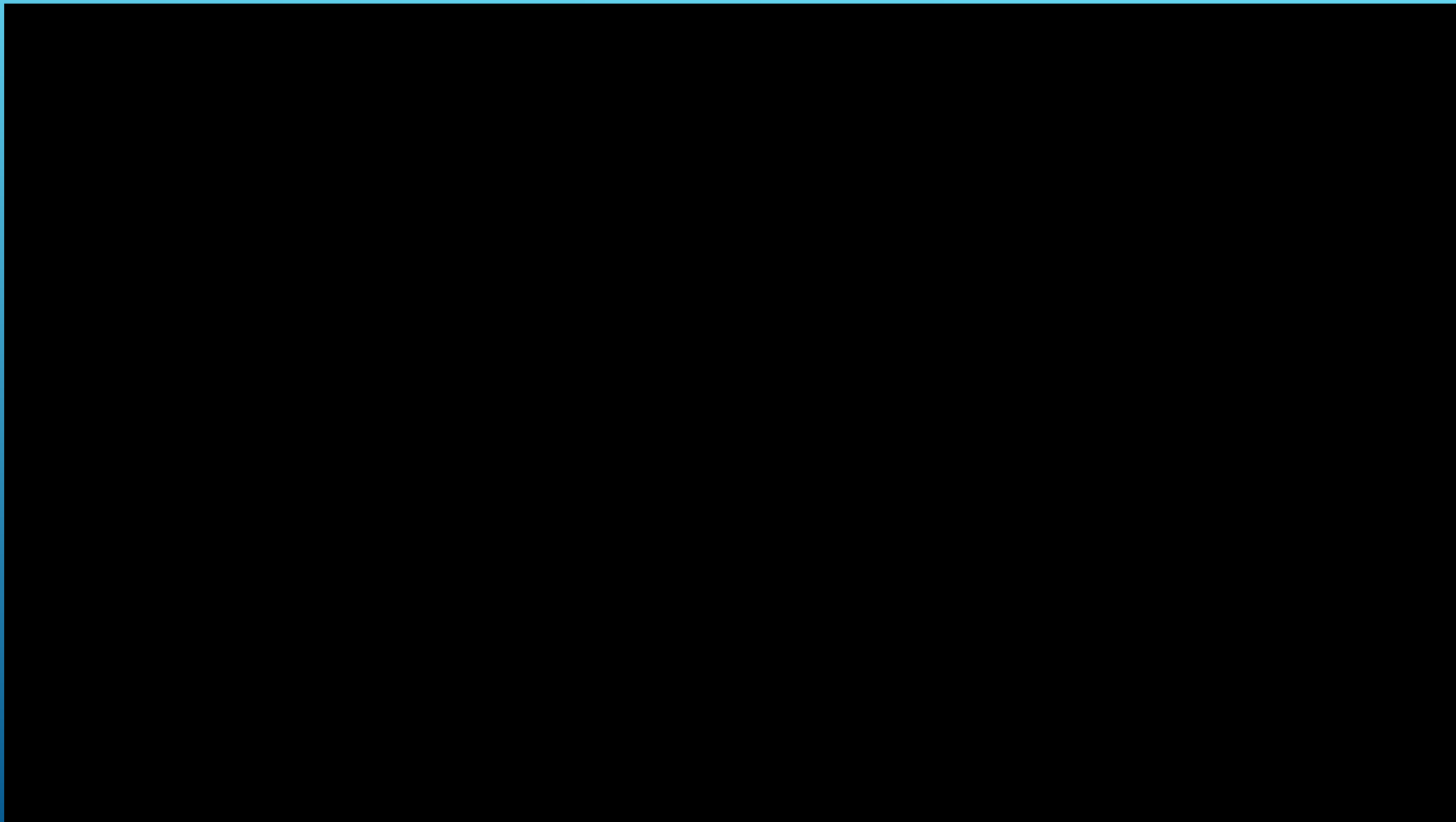
- ▶ Accessories of technical products are sometimes more expensive than the rotomolded product itself.
 - ▶ So, it is crucial for a rotomolder of technical parts to have a perfect welding system.
- 
- A series of white diagonal lines of varying lengths and thicknesses, located in the bottom right corner of the slide, creating a modern, abstract graphic element.

Within the leakfree project,
we have planned to construct
a reliable hot plate welding automat,
where the machine variables can be regulated precisely,
to achieve leakfree weldings at all times.


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Here a 2 minute film
on the
3-station, 12 axis
welding automat
we have developed
in-house:





With this automat,
we achieve 100 % leakfree weldings
not losing a single expensive accessory.


A series of white diagonal lines of varying lengths and thicknesses, located in the bottom right corner of the blue background.

A DIFFERENT RESEARCH PROJECT:

Rotomolding has limited access to different raw materials

New materials need years of testing, for being reliable.

Since about 4 years, we are making rotomolding trials with a newly developed PP for a company in Australia.

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**These trials, these projects altogether give us a
broader insight in rotomolding process,
also self confidence to use different materials
for heavy applications,**

**in short, a valuable competitive edge
in the rather unfair environment of our industry.**

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So ladies and gentlemen,
With my presentation, I tried to show you

- the research we have been doing in Floteks,
- the NDT systems we are working on,
- the automatic welding system we developed,
- in short, our strategy , which has to be the strategy of all the rotomolders in the World:

BE DIFFERENT , DON'T JUST COPY...

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THANK YOU...

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