

Arçelik

Respecting the World, Respected Worldwide



Koç **Group**

Largest Investment Holding Company of Turkey

Founded in 1926

+93,000

Employees

~11,000

Dealers and After-Sales Services

USD 26 Billion

2020 Consolidated Revenues

(As of 2018 year-end)

8%

Combined revenue /
Turkey's GDP

7%

Total Exports /
Turkey's Export

12%

Total market capitalization
on Borsa Istanbul

A family of four is in a modern kitchen. A woman in a pink shirt is in the foreground, focused on decorating a stack of pancakes with white cream using a piping bag. To her left, a young girl in a pink shirt is also decorating a pancake. To her right, a young boy in a white shirt is using a small bottle to add a red sauce to his pancake. In the background, a man in a grey shirt is working at the kitchen counter. The table is set with various ingredients: a bowl of white cream, a bowl of blueberries, a bowl of strawberries, a bowl of orange sprinkles, and a plate with a single pancake. The text "Arçelik, a Leading Player in Home-Appliances Industry" is overlaid in white, with "We Work, Produce and Innovate Globally" below it, underlined in red.

Arçelik, a Leading Player in Home-Appliances Industry

We Work, Produce and Innovate Globally

Arçelik

Full-Range, Lifestyle
solutions provider

 arçelik

 beko

GRUNDIG

 ALTUS

arctic

 Blomberg
seit 1883

 Dawlane

 DEFY

 elektrabregenz

 FLAVEL

 LEISURE

SINGER

alic

VOLTAS • beko

HITACHI

Founded in 1955

14

Brands

43

Sales & Marketing Offices

28

Production Facilities

30

R&D and Design Centers

146

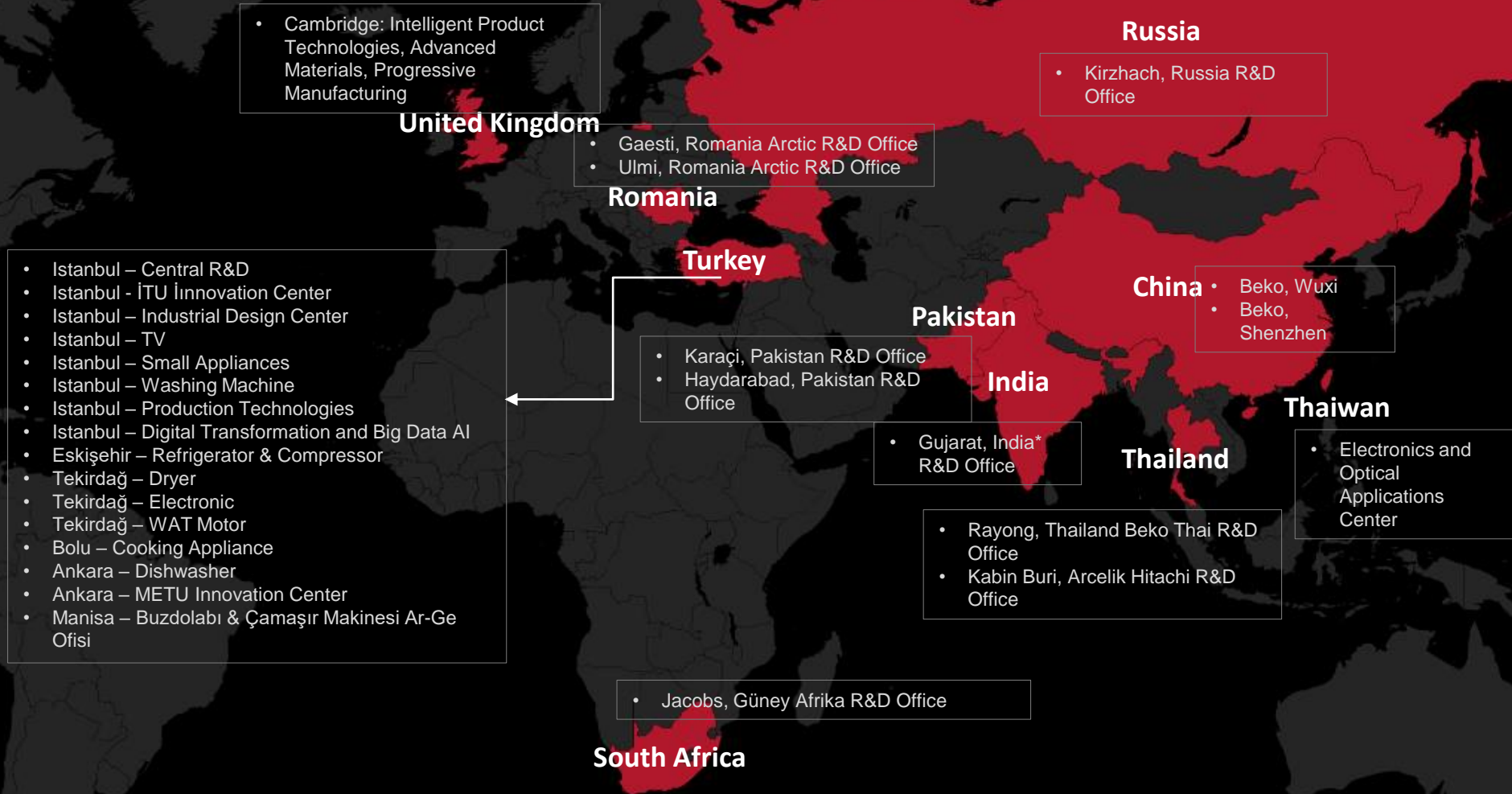
of Countries

+30,000

of Employees

R&D Network

Global Strength Driven by Technology & Innovation



R&D Experties

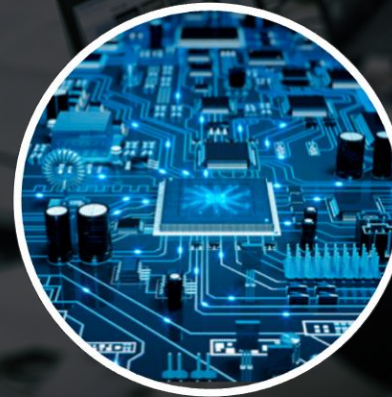
Thermodynamics
Fluid mechanics
Cooking Technologies
Cleaning Technologies
Vibration and Acoustics
Food Technologies



Computer Aided Engineering
Power Electronics
Human Machine Interface
Electronic Control Systems
Internet of Things
Cyber security



Polymer Sciences
Metal and Coatings
Sensor Technologies
Microbiology and Hygiene
Technology and Project Management
Structural Design and Analysis



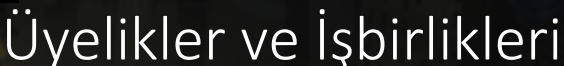
Basic Sciences
Rapid Prototyping
Embedded Software
Optical
Product / Component Test and Approval
Global R&D Incentives

Horizon 2020 Performance

With our 26 granted projects in Horizon 2020, we are the company with the highest number of projects in Turkey. In addition, we took part in 24 Eureka, 3 Eurostars and 1 Erasmus + projects.

The Most Successful Industrial Organizations in Horizon 2020	Fund Amount (Million €)	Number of Project
Ford Otosan	7.34	17
Tüpraş	7.33	16
Arçelik	6.79	26
SRDC	4.77	10
Tofaş	3.43	9
Ekodenge	2.72	12
Tekfen	2.64	1
Lojika	2.45	2
Demir Enerji	1.98	7
Sampaş	1.94	5





ARCELIK Dishwasher and Dryer Case Study



- The aim of the project is to change the surface free energy of the dishwasher and dryer fins to facilitate the drying process.
- The surface texturing itself facilitate the evaporation process. In this way, the energy consumption will decreased.

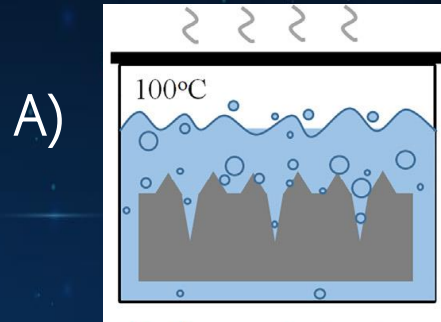
PROMETHEUS will deliver:

- Improvements in energy efficiency for **dishwasher drying of up to 4%**
- Improvements in energy efficiency for heat exchangers 5%



Dishwasher Case Study / Samples' Characterization

Contact angle measurements

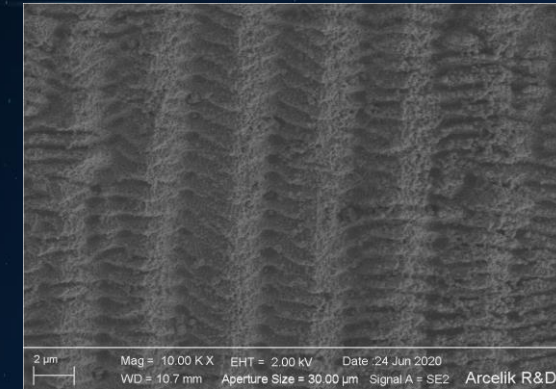
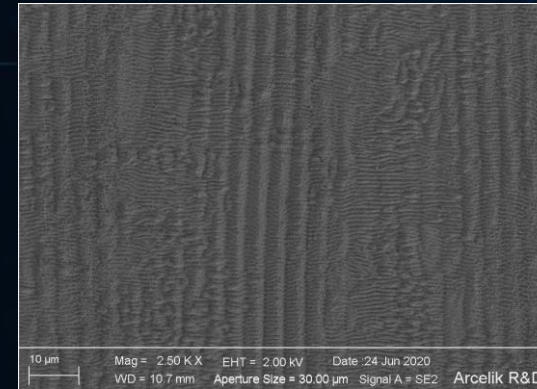


Boiling water treatment (2h)

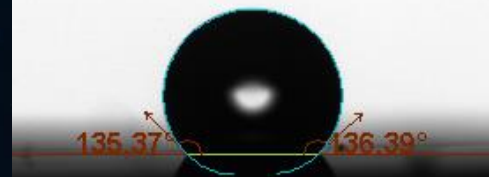


70-80 °

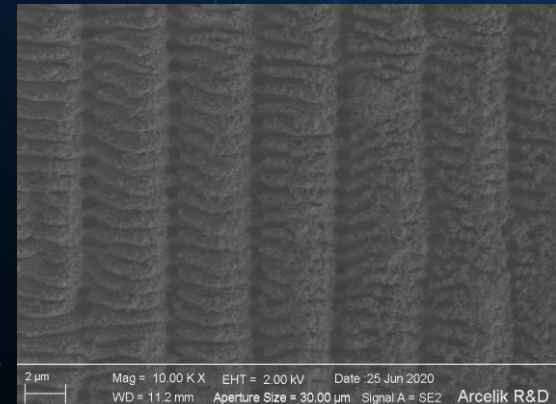
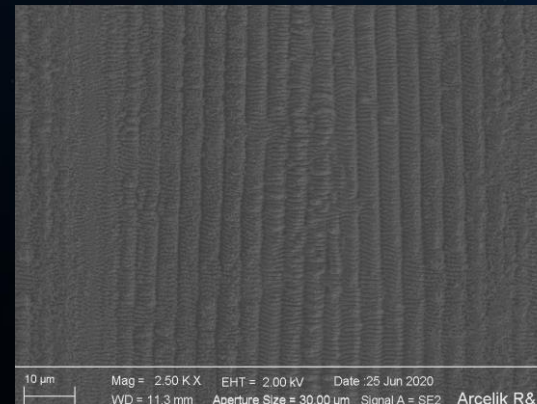
SEM Images



Low temperature annealing treatment (6h)



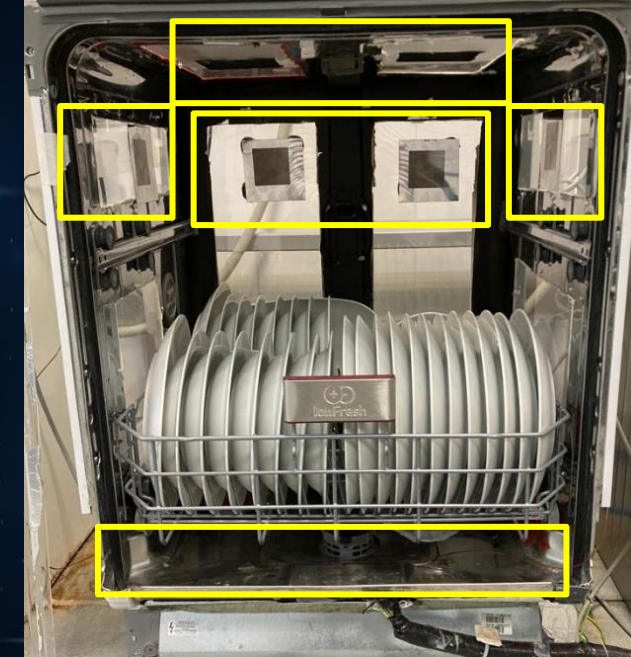
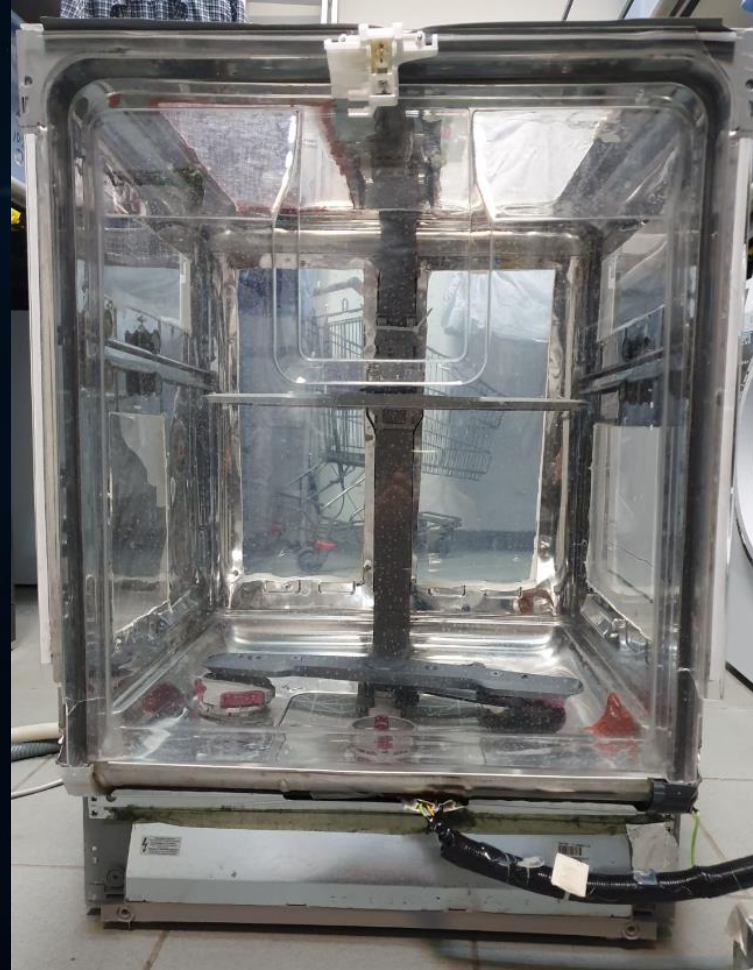
110-140 °



Dishwasher Case Study / Visual Simulator

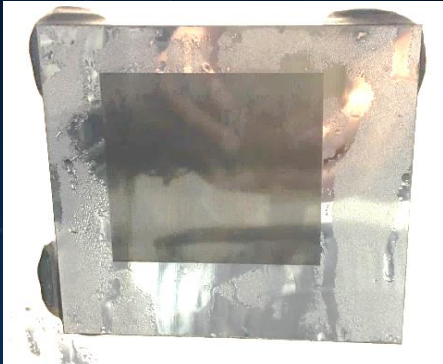


- A simulator dishwasher was created for the visual examination of materials with modified surface properties.
- In this way, the behavior of water on different surfaces can be visually examined during the drying step.
- We placed the plates on the side surfaces, bottom surface and the top surface of a dishwasher simulator.
- We aimed to examine the water movement on the surfaces during and final of the drying step.
- We measured total water after drying step in both textured area and normal area.

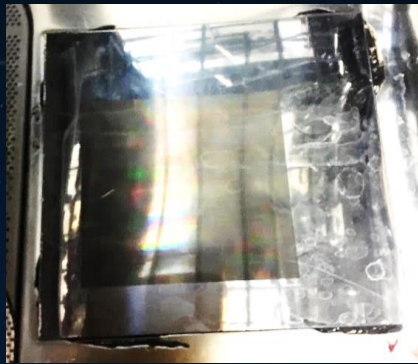


Dishwasher Case Study / Visual Simulator Test Results

Side surface



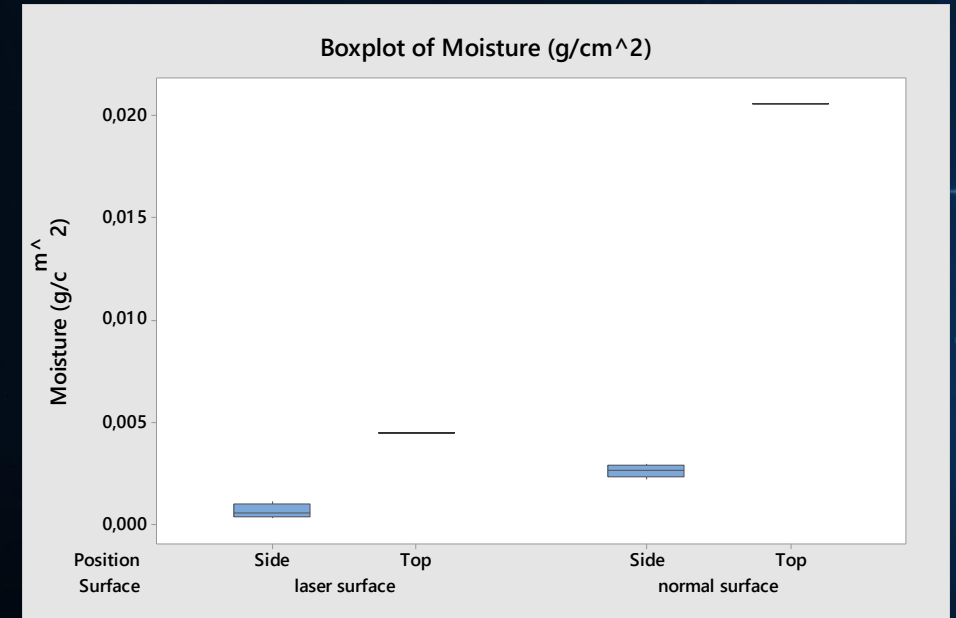
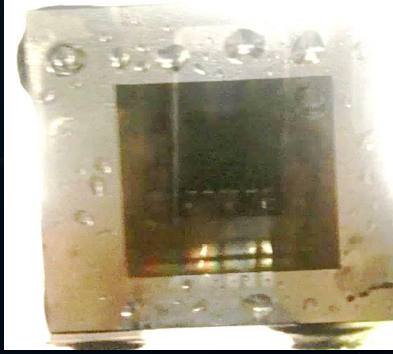
Bottom surface



Top surface

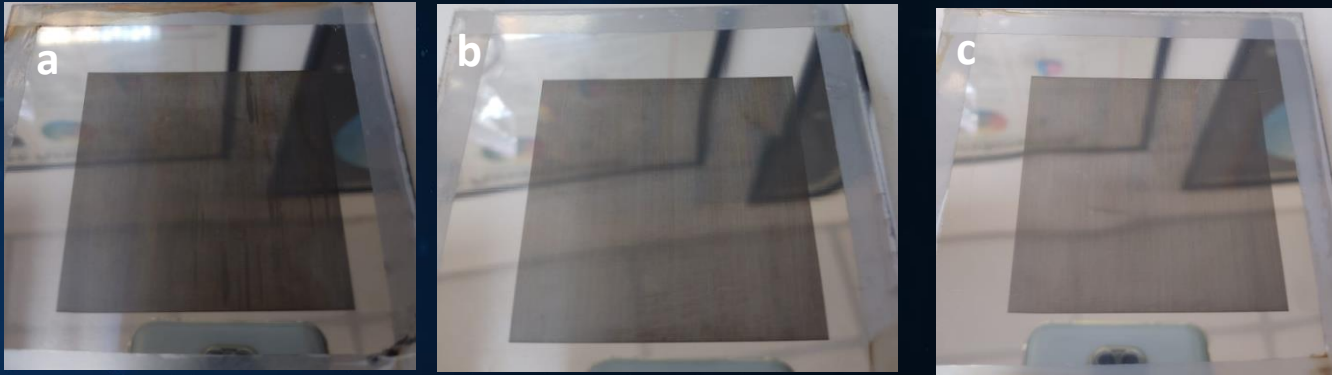


Amount of moisture



- If we compare the laser-treated and non-treated surfaces, the laser-treated surfaces dry much more easily.

Dishwasher Case Study / Corrosion Test



- Studies continue. Initially, the samples were test in the cabin.
- Corrosion test will also be carried out on the product.

PLANNED WORKS

- Dishwasher life tests will be repeated.
- The same tests will be done for the dryer fins.
- Product prototypes will be prepared and performance tests will be done on the product.

