New platform metallization technology
In order to satisfy the needs of modern industry, metallization processes need to be

**SIMPLE / COST EFFICIENT / GREEN**

ORELTECH’s unique platform technology easily satisfies these three criteria

• ORELETCH provides conductive inks for printing of highly conductive silver thin films on a variety of substrates:

  PLASTIC / PAPER / TRANSPARENT SUBSTRATES / FABRIC / CERAMICS / 3D STRUCTURES

• ORELETCH inks do not contain nanoparticles, are significantly environmentally friendlier and more cost-effective than the alternatives.

• ORELTECH inks developed for variety of application:

  TRANSPARENT ELECTRODES / PRINTED CIRCUITS / EMI SHIELDING / WEARABLES/ MEDICAL DEVICES/ SENSORS

• ORELETCH unique technology utilizes inkjet/aerosol printing and further development to metal by cold plasma. This allows keeping the process temperature at <70°C and working with even the most sensitive substrates.
ORELTECH products

• Metal-based inks for different application:
  ✓ applied by inkjet or aerosol (viscosity 20-80 cP)
  ✓ 2 types of silver transparent electrodes (65 %T 3 Ω/sq. and 85 %T 70 Ω/sq.)
  ✓ silver electrodes or circuitry (0.1 Ω/sq)
  ✓ gold electrodes or circuitry (0.5 Ω/sq)

• Assistance in integration of metallization technology into customer’s production line:
  ✓ ink formulation for customer printing application
  ✓ assistance in plasma machine fit to customer application

• R&D for custom products:
  ✓ ink formulation for custom application
  ✓ development of inks based on other precious metals (platinum, palladium)
ORELTECH inks: applications for conductive films:

Electrodes printed on textile, paper, polymers and 3D objects

- Transparent conductive flexible and bendable electrodes for:
  - OLEDs
  - Solar cells
  - Touchscreens

- Highly conductive electrodes:
  - EMI shielding
  - Medical devices
  - Smart paper
  - Wearables
ORELTECH inks: applications for filters and catalysts

• Nanoparticle/nanocrystal coatings:
  ✓ Controllable particle size
  ✓ Coating on flat, 3D structures and powders
  ✓ No previous synthesis of nanoparticles required
  ✓ Silver, gold, platinum and palladium metals

• Products and applications:
  ✓ Purification filters
  ✓ Porous metal catalysts
  ✓ Energy storage devices
  ✓ Dye-synthesized solar cells (DSSC)
  ✓ Antibacterial coatings
Natalia is co-founder and managing director of Oreltech for the last 3 years. She is an expert in organic electronic materials and their applications, thin-film growth and computational chemistry. She has a Ph.D. in chemistry from Weizmann Institute of Science.

Konstantin is an expert in surface chemistry and composite materials with experience in nanoparticle synthesis and electron microscopy. He has a Ph.D. in chemistry from Weizmann Institute of Science and leading R&D team for the last 2 years.
Thank you!

Our collaborations:

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