



RESCOLL
Société de Recherche

RESCOLL

**Leading to competitiveness through
innovation in materials and processes**

CONDUCTIVE POLYMERS

OUR SKILLS

RESCOLL services in the field of conductive polymers:

- Formulation of materials (paints, inks, composites, compounds) with conduction properties
- Formulations tailored to the customer's specifications
- Characterizations of the electrical and physical, chemical, mechanical properties of developed materials
- Aging / accelerated weathering experiments
- Manufacture of prototypes (examples : heating or deicing elements)
- Production of materials (from kgs to tons)

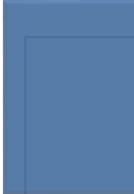


CONDUCTIVE POLYMERS

OUR APPLICATIONS & PRODUCTS



**Joule heating
paints**



**De-icing
paints**



ESD materials



**Colored
ESD materials**



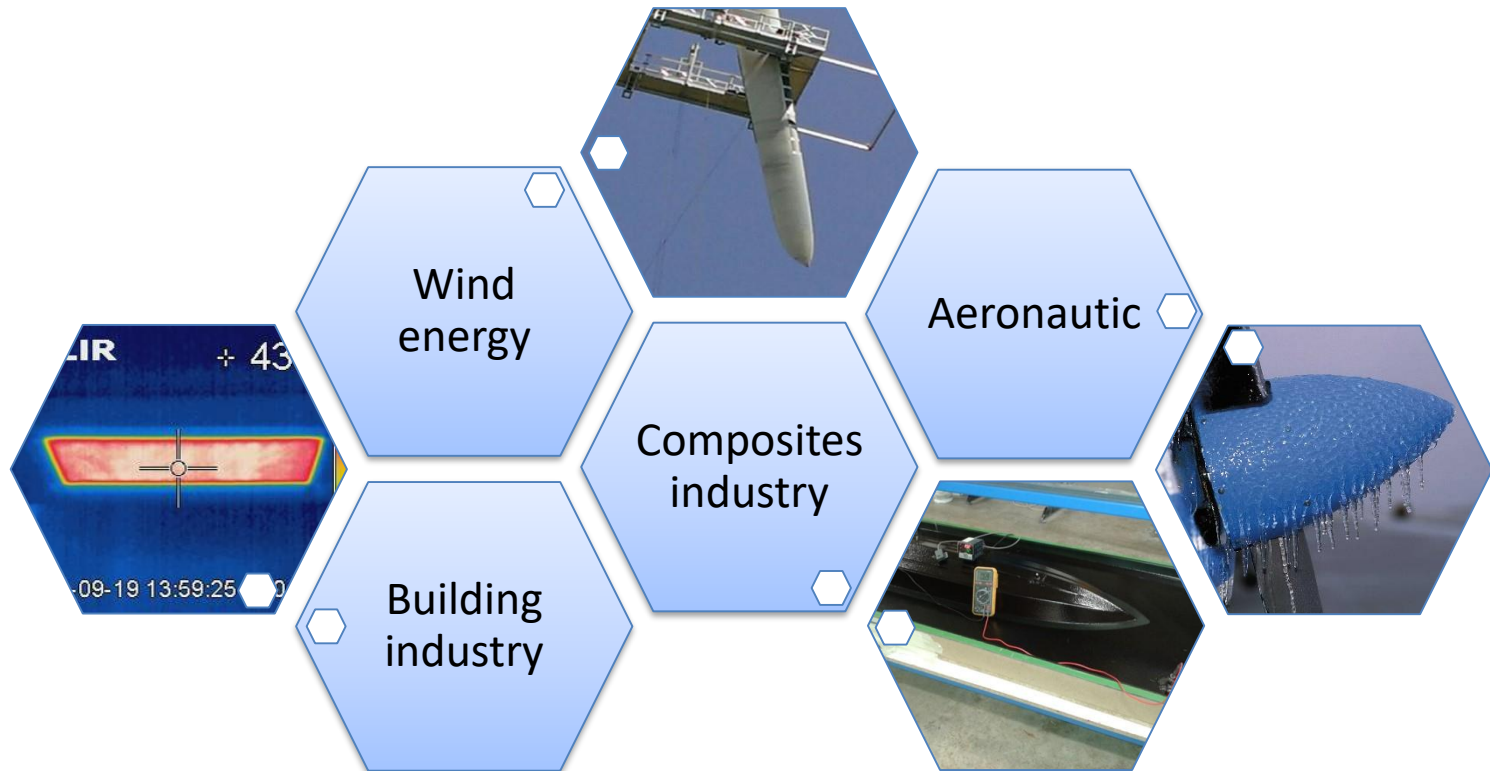
**Conductive resins for
electrostatic painting**



Stealth

CONDUCTIVE POLYMERS

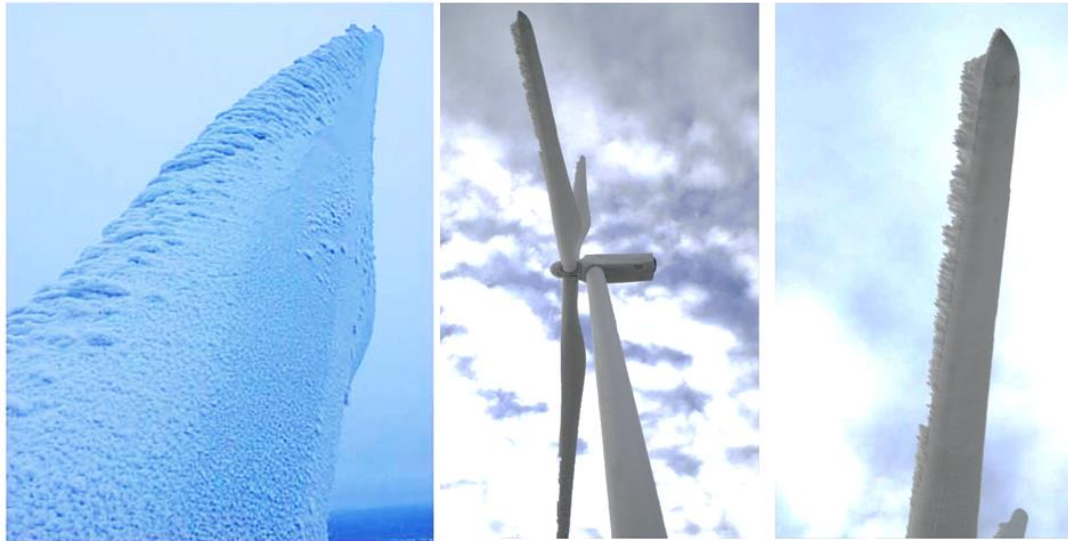
MAIN SECTORS



RESCOLL in action

CONDUCTIVE POLYMERS

ICE&WIND© : deicing system for wind turbine blades



Impact of icing:

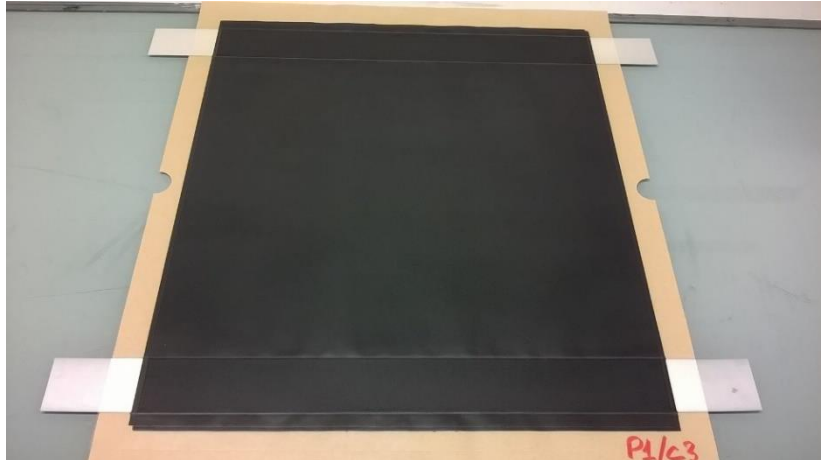
- Loss of production: up to 70% in winter
- Mechanical fatigue of the wind turbine blades increased
- Security issues: ice projections

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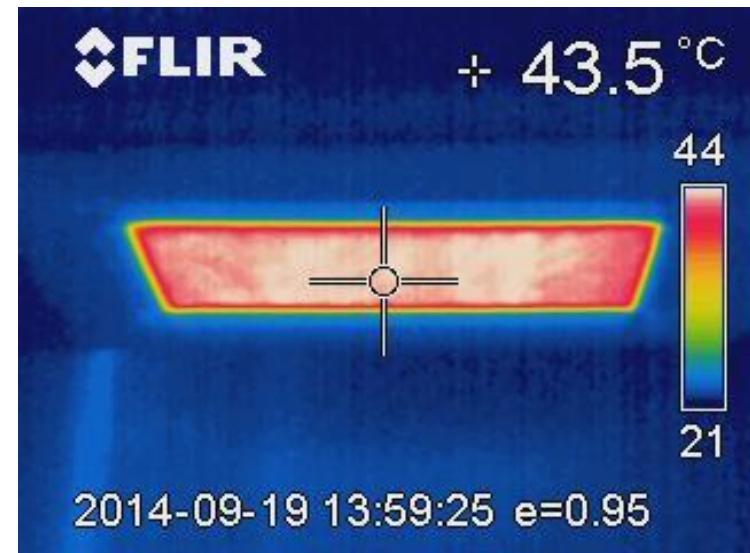
ICE&WIND© : de-icing system for wind turbine blades

Developed solution: heating patches, fitted with electrically conductive paint, ready for bonding on the blade surface

Power : from 1 to 10000 W/m²



*Joule heating patch developed by
RESCOLL*

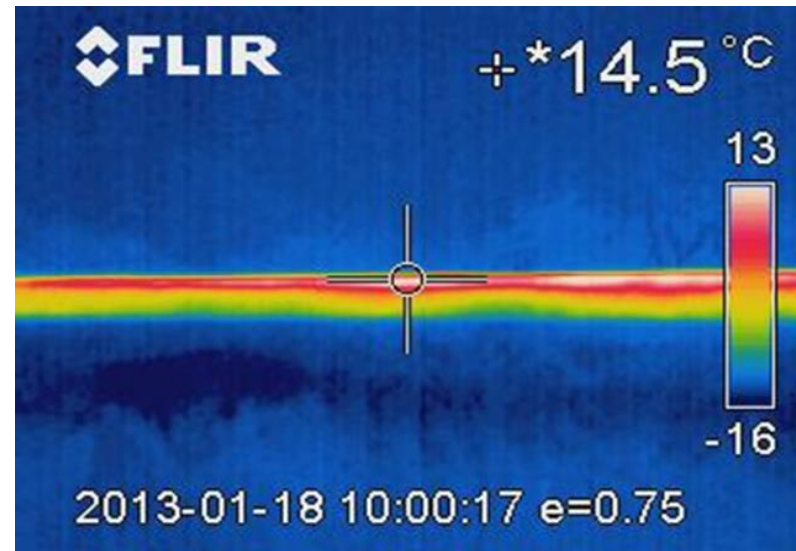


*Infrared thermography during heating
operation*

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ICE&WIND© : de-icing system for wind turbine blades

ICE&WIND© is a system specially developed for **retrofitting** wind turbines



Left : installation of deicing system; right : infrared photography of a wind turbine blade during a deicing operation

CONDUCTIVE POLYMERS

JOULE HEATING: invisible radiant heating system for construction industry



Left: plasterboard fitted with conductive paint ; right: infrared photography of a heated wall

JOULE HEATING: invisible radiant heating system for construction industry

Advantages of our technology:

- Radiant heat: excellent thermal comfort
- Energy saving: *up to 40% less energy than conventional radiator / convectors systems*
- Invisible
- Low weight ($< 150 \text{ g/m}^2$) and very thin ($< 0,15 \text{ mm}$)
- Safety: works at very low voltages : 24 or 48 Volts
- Easy installation
- Space saving
- Reduced pollution (dust and pollen circulation reduced)
- Specially suitable for buildings retrofitting: floor, plasterboard or ceiling

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DEMOCRAT : electrostatic deposition system for gelcoat painting in composite industry

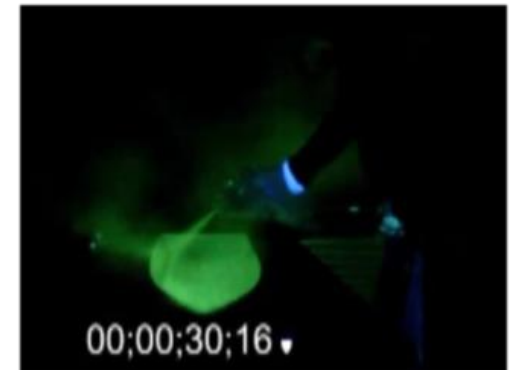
DEMOCRAT system: organic conductive molds (epoxy or polyester) associated with an electrostatic deposition system

Main benefits:

- Productivity increased
- Paint wastage reduced
- VOC emission reduced
- Paint finishing improved
- Health and safety conditions in factories improved



DEMOCRAT inactivated



DEMOCRAT activated

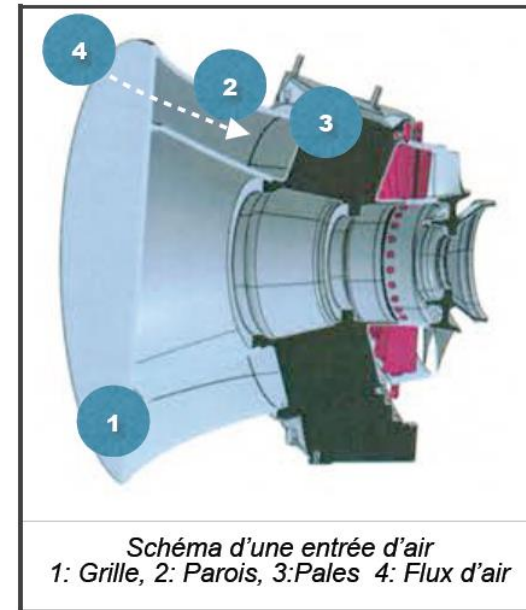
Projet DEMEA : dégivrage entrées d'air de turbines d'hélicoptères

Projet RAPID 2012-2015

Solution matériaux développée : peintures formulées qui soumises à un rayonnement micro-ondes absorbent l'énergie électromagnétique incidente et la transforment en chaleur

Objet du projet : augmenter le niveau de maturité technologie de la solution jusqu'à TRL 5

=> Essais en soufflerie climatique : Petit Anneau Givrant de la DGA



For further information:

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