

# ŁUKASIEWICZ – Institute of Non-Ferrous Metals

- highly-qualified research staff
- cooperation with industry
- modern research equipment
- applied research and development works, expert opinions
- pilot installations
- accredited laboratories
- lines for small-scale production
- active participation in the European Research Area

*Creative people who are passionate about developing innovations that help drive forward the national economy*



## Institute of Non-Ferrous Metals



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## MAIN DIRECTIONS OF ACTIVITY

# SUSTAINABLE ECONOMY AND ENERGY

## Efficient and environmentally friendly manufacturing technologies

- enrichment of primary and secondary raw materials
- pyro- and hydrometallurgical technologies for production of non-ferrous metals, waste recycling
- optimisation of technological processes of non-ferrous metals production
- technologies for reduction of pollutant emissions
- complex additive manufacturing technologies
- technologies for manufacturing of modern metallic materials, including composites of specific functional properties

## Material recovery

- technologies for circular economy
- recycling of post-consumer waste
- use of post-production scraps in non-ferrous metals processing

## Electricity grids

- wire materials and products
- amorphous magnetic materials for application in power transformers



# INTELLIGENT MOBILITY

## Storage of electric energy, renewable energy sources

- new materials and technologies of chemical power sources
- energy storage systems working with renewable energy sources
- technologies for elastic photovoltaic coatings
- innovative light materials for automotive sector
- materials for devices for generation of energy from waste heat

## Electromobility

- enhanced energy power sources
- hybrid power sources
- high power electrochemical capacitors
- additive manufacturing technologies in the field of soft magnetic materials
- amorphous and nanocrystalline magnetic materials for application in power electronics

## Advanced technologies in automotive industry

- technologies for production of amorphous brazing alloys
- additive manufacturing technologies in the field of monolith catalytic converters

# HEALTH

## Advanced materials and medical nanotechnologies

- antibacterial coatings
- composite materials for regenerative and reconstructive medicine
- stators for motors of heart supporting pumps

# SECURITY AND DEFENCE

## Materials for defence applications

- new technologies for additional light modular armour
- modified heavy alloys for armour-piercing shell
- 3D printing technologies for production of defence equipment
- master alloys in a form of powder mortars for modification of heavy alloys
- composite materials for electromagnetic radiation absorbers

## Power source technologies

- technologies for thermal reserve and special batteries
- power supply for manned and unmanned aircraft
- power supply for unmanned and autonomous platforms
- power supply for security systems
- power supply for rocket control systems and smart precision-guided munition