

**Research
and
Development
Centre
of Research
and Didactic
Equipment
COBRABiD Ltd.**



Warsaw, Poland



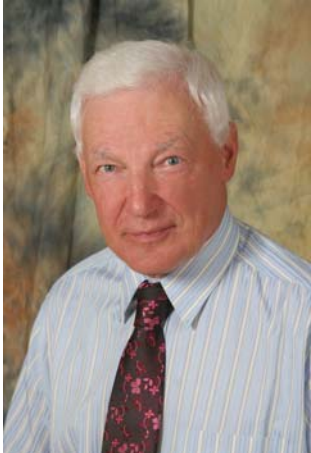
00-842 Warsaw Łucka 15 St.

Tel.: + 48 22 620 30 61 Fax: +48 22 620 30 67

E-mail: zarzad@cobrabid.pl



Piotr A. Baranowski - President of
Company COBRABiD Ltd.

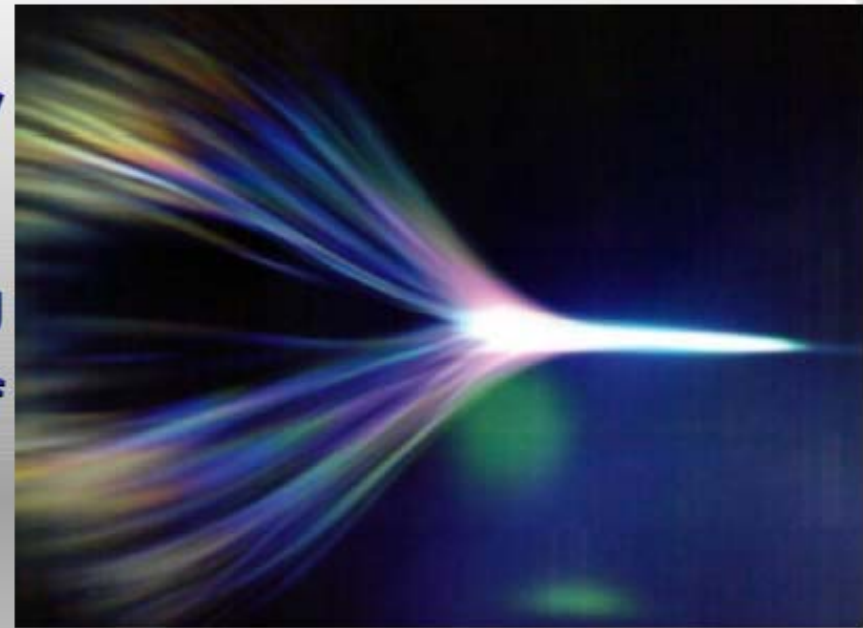


Jan Piwnik - Director of Research
Division



Artur Rusowicz – Member of Research
Division

**For more than 40 years
COBRABiD has successfully
carried out projects
associated with developing
equipment for the needs of
science, education and
industry.**



**This is proven by its
numerous awards it has
received at international
fairs.**



Our proposition for cooperation:

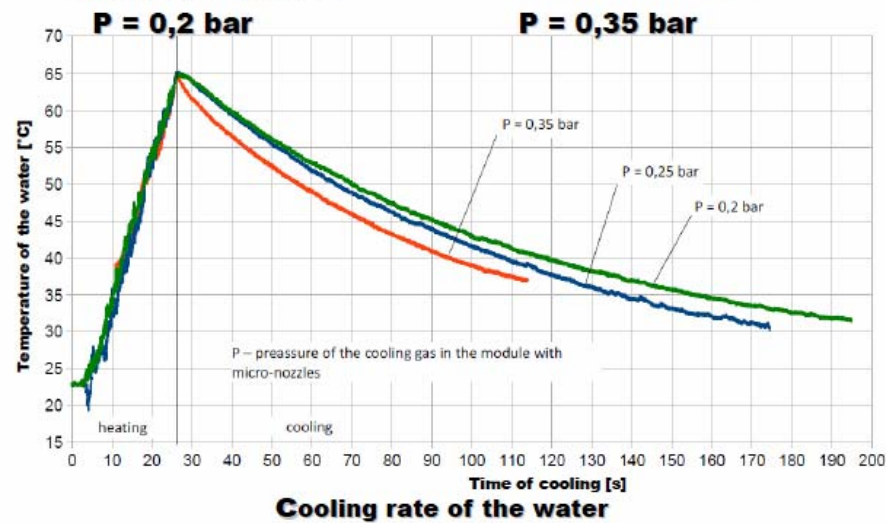
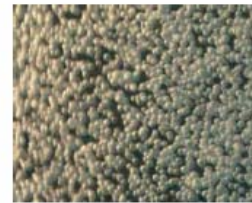
- **Method of Cooling and Heating Liquid Products Using Micro-bubbles**
- **Micro-jet Welding Technology**
- **Method of Post-slaughter Chilling of Animal Half-carcasses Using Micro-jets**
- **Micro-jet Heat Exchanger**
- **Rheological Analyser**

METHOD OF COOLING OR HEATING LIQUID PRODUCTS, PARTICULARLY LIQUID FOODSTUFFS

THE SUBJECT OF THE INVENTION IS A METHOD OF COOLING OR HEATING LIQUID PRODUCTS, PARTICULARLY LIQUID FOODSTUFFS. TECHNOLOGICAL PROCESSES OF PRODUCTION OF BEER, JUICES, EDIBLE OILS OR MILK TREATMENT OFTEN REQUIRE COOLING OR HEATING THESE PRODUCTS AT VARIOUS PRODUCTION STAGES.



Experimental equipment for chilled water



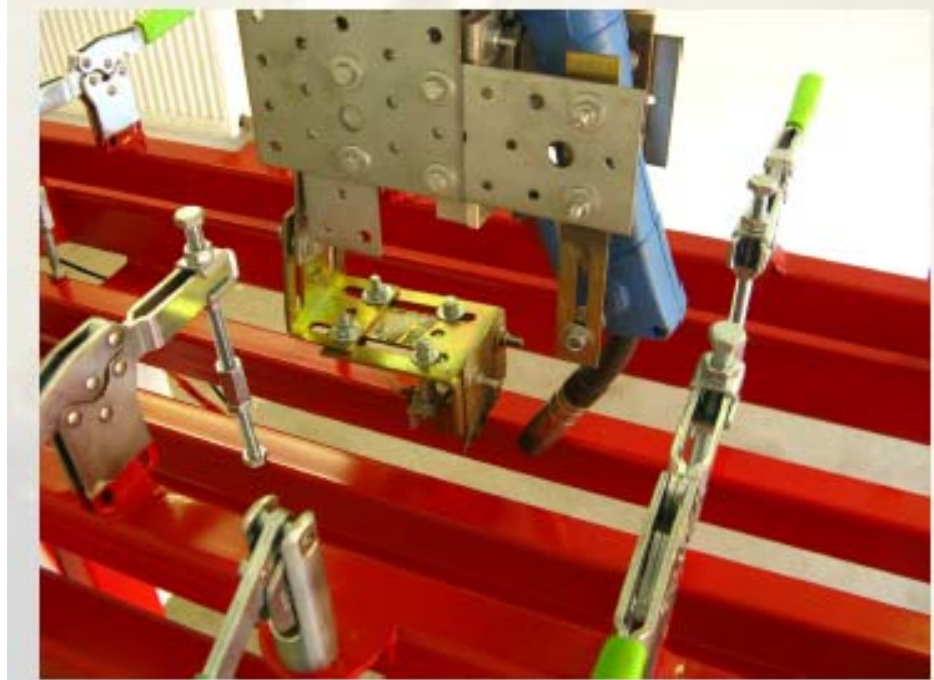
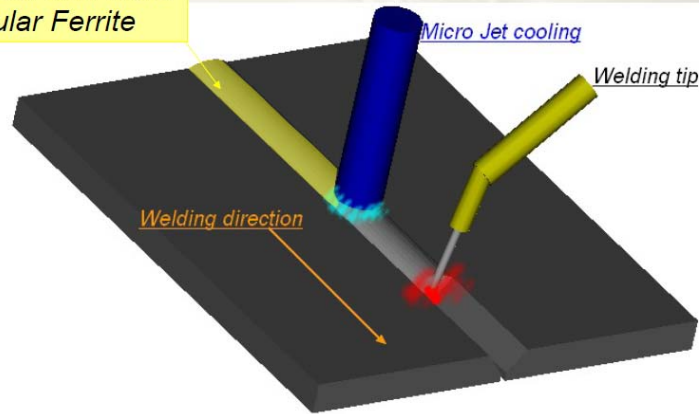
P – Pressure inside the module with micro-nozzles



Micro-Jet Welding Technology

Micro-Jet welding

Weld Metal
Deposit with more
Acicular Ferrite



Micro-Jet welding machine

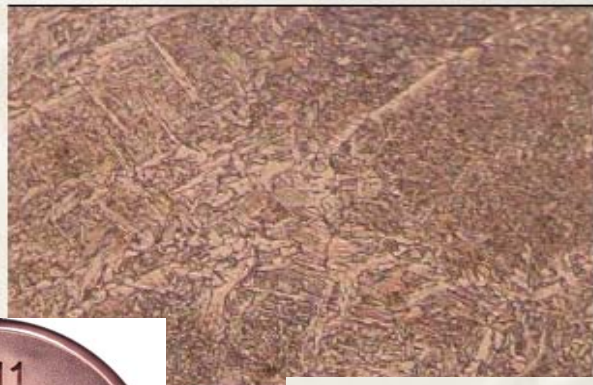
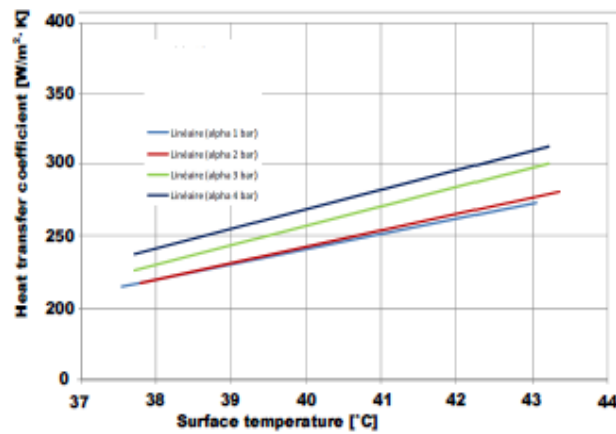


Fig. 3. Decrease of temperature in Micro-Jet Welding and WMD with high amount of Arcicular Ferrite

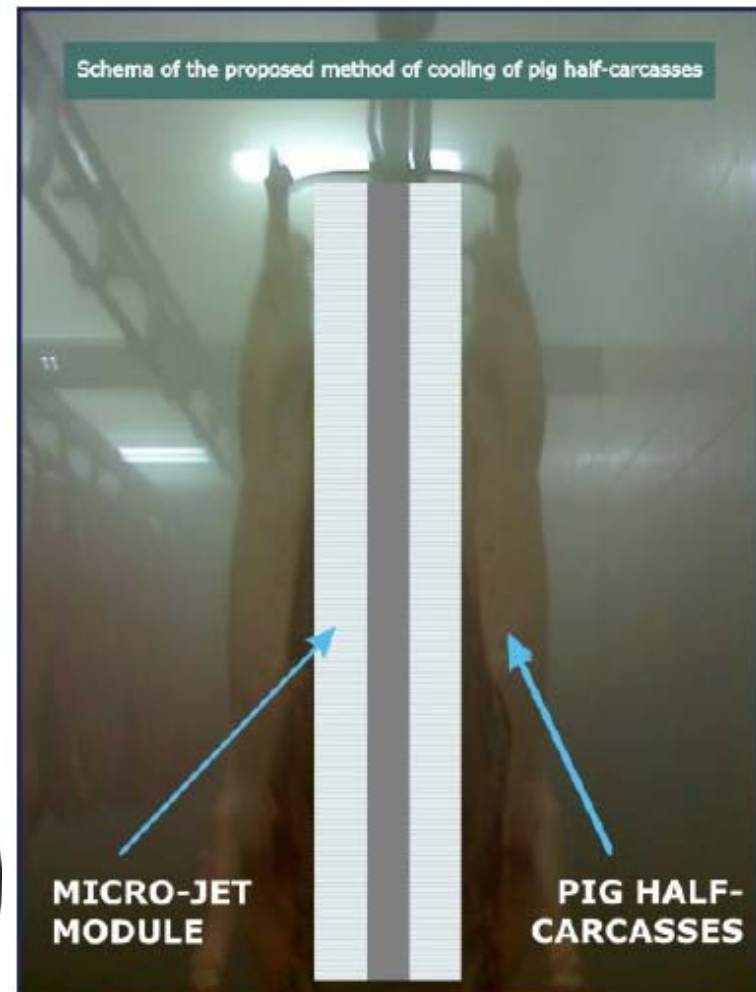
METHOD OF POST-SLAUGHTER CHILLING OF ANIMAL HALF-CARCASSES

THE SUBJECT OF THE PRESENT INVENTION IS A METHOD OF POST-SLAUGHTER CHILLING OF ANIMAL HALF-CARCASSES. POST-SLAUGHTER CHILLING OF HALF-CARCASSES HAS A SIGNIFICANT EFFECT ON THE QUALITY OF MEAT, IT'S MICROBIOLOGICAL CONDITION WEIGHT LOSSES AND REDUCE OF TIME COOLING FROM 24H TO 10H.

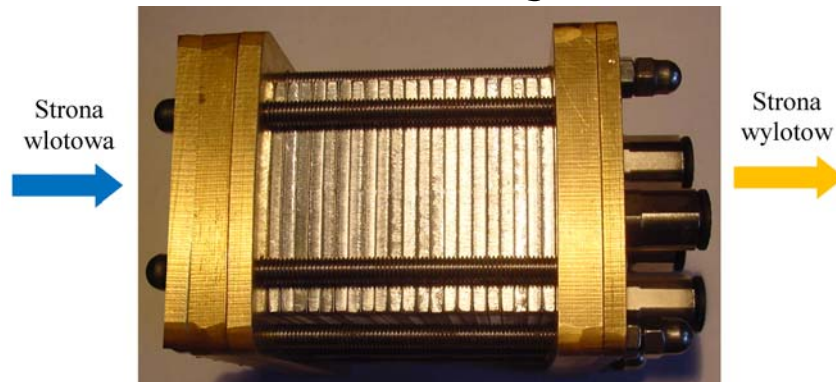


Heat transfer coefficient for different kind of meat

α = From experiment

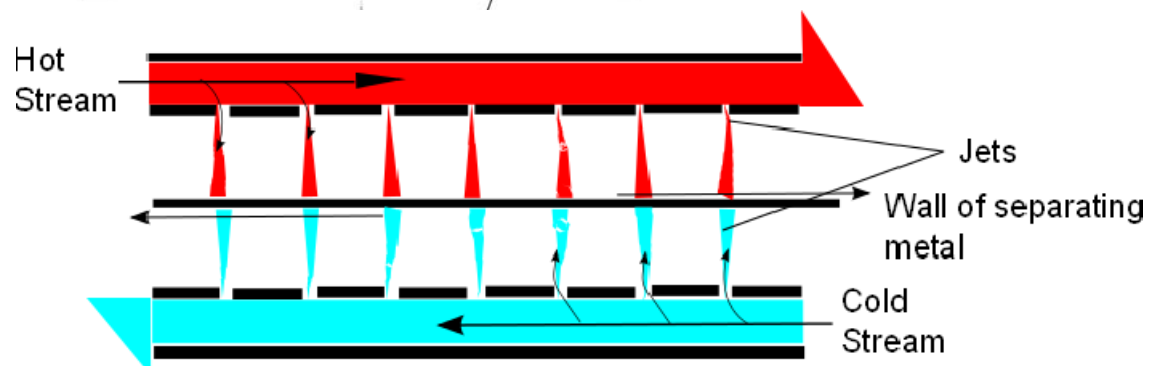
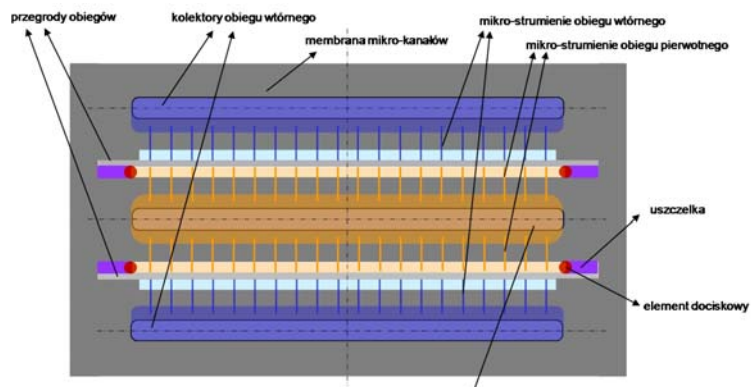


Micro-jet Heat Exchanger



Advantages:

- heat exchanger for different mediums (gas-gas, gas-fluid);
- small dimensions;
- high heat transfer coefficients
- different configurations jets in heat exchanger
- construction from different materials (metal, ceramics)



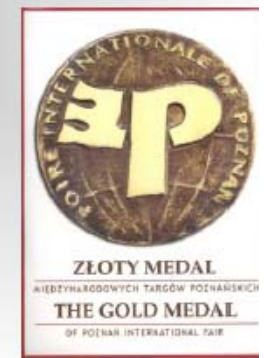
Applications:

- Heat recovery
- Chemical and Food Industry
- Solar Dish System (prototype)
- Refrigeration and Air-Conditioning
- Cooling of electronic device
- Energetics

RHEOLOGICAL ANALYSER



Food quality control



Major projects



Awards for innovative technologies





Thank You

**Research and Development Centre of Research
and Didactic Equipment
COBRABiD Ltd.**

***CENTRALNY OŚRODEK BADAWCZO ROZWOJOWY APARATURY BADAWCZEJ I DYDAKTYCZNEJ
COBRABiD sp. z o.o.***

**PL 00-842 Warszawa, ul. Łucka 15
tel.: +48 22 820 30 61, fax: +48 22 820 30 67**

e-mail: zarzad@cobrabid.pl

www.cobrabid.pl