Polish SME seeks R&D partner to develop directional vibrational freezing technology for high-clarity premium ice.

Summary

Profile type	Company's country	POD reference
Technology request	**Poland**	**TRPL20260227004**
Profile status	**Type of partnership**	**Targeted countries**
PUBLISHED	**Research and development cooperation agreement**	**• World**
Contact Person	**Term of validity**	**Last update**
Enrico FRANZIN	**27 Feb 2026** **27 Feb 2027**	**27 Feb 2026**

General Information

Short summary

A Polish ice producer seeks a research and technology partner to jointly develop and implement an innovative process of vibrational directional freezing to manufacture highly transparent ice with minimal air inclusions.

Full description

The company intends to upgrade its production profile from conventional food ice to premium transparent ice products dedicated to high-end gastronomy and beverage presentation. While it possesses the facilities and expertise required for standard ice manufacturing, it lacks the research infrastructure necessary to independently develop an advanced freezing technology.

The planned innovation involves the development of a proprietary process referred to as:
Technology of Vibrational Directional Freezing (TVDF)
The joint R&D work will include:

- design and construction of a prototype freezing station,
- development of vibrational freezing in polymer moulds,
- optimisation of crystallisation processes to eliminate air bubbles,
- production of high-density, high-transparency ice cubes and spheres,
- validation of the technology under real production conditions.

The cooperation is expected to significantly improve production efficiency, product aesthetics, and service range, enabling entry into the premium hospitality market.
Need for Cooperation
The SME does not possess sufficient laboratory facilities, research personnel, or analytical capacity to conduct full-scale development alone. External scientific and engineering support is required to:

- analyse existing technological solutions and IP landscape,
- design and test innovative freezing methods,
- prepare the company for implementation and scale-up,
- support applications for European innovation funding.

Expected Results

- Development of an innovative, energy- and process-efficient freezing method.
- Launch of a new premium product line.
- Increased competitiveness and entry into international markets.
- Readiness for implementation under EU innovation support programmes.

Advantages and innovations

Technical specification or expertise sought

A Polish ice producer seeks a research and technology partner to jointly develop and implement an innovative process of vibrational directional freezing to manufacture highly transparent ice with minimal air inclusions.

Stage of development

Sustainable Development goals

- **Not relevant**

IPR Status

IPR Notes

Partner Sought

Expected role of the partner

- research institutes or universities with expertise in thermodynamics, phase-change processes, or food engineering,
- technology centres experienced in prototyping and process design,
- industrial R&D partners in refrigeration or materials engineering,
- partners interested in joint applications to European funding programmes.

Type of partnership

Research and development cooperation agreement

Type and size of the partner

- **SME 11-49**
- **R&D Institution**
- **SME 50 - 249**

Dissemination

Technology keywords

- **02002015 - Surface treatment (painting, galvano, polishing, CVD, ..)**
- **02002019 - Micropositioning, nanopositioning**

Market keywords

- **08001006 - Processes for working with plastics**
- **08001017 - Industrial chemicals**
- **08001021 - Other speciality chemicals**
- **08001009 - Speciality/performance materials: producers and fabricators**

Targeted countries

- **World**

Sector groups involved