

PROJECT CONSORTIUM

HORIZON EUROPE PROJECT

Institute for Scintillation Materials

National Academy of Sciences of Ukraine



Institute for Scintillation
Materials of the National
Academy of Science of Ukraine

 Ukraine


ISMA has existing knowledge of BSGO crystal production. Now, through the feedback from BSGO crystal characterisation studies to be performed at CERN and ILM in TWISMA, ISMA will improve the BSGO's optical and timing performance by adjusting the Ge/Si ratio, thermal conditions of crystallization using the Czochralski method, and the regimes for thermal annealing.

ISMA has experience of Czochralski and Edge-Defined, Film-Fed Growth (EFG) processes to fabricate oxide crystals in Mo and W crucibles in reduced Ar+CO conditions. With the support of CERN and ILM, ISMA will learn how to scale-up the processes to enable the fabrication of larger and higher-quality ingots in a single growth run.

This will significantly improve ISMA's capability to develop advanced scintillation materials for next-generation calorimeters for HEP.



Organisation Europeenne
Pour la Recherche Nucleaire

 Switzerland



Centre National de la
Recherche Scientifique CNRS

 France



Universite Lyon 1 Claude
Bernard

 France



Twinning with ISMA to develop
innovative calorimeters for
high energy physics based
upon advanced scintillation
materials

PROJECT COORDINATOR

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RESEARCH SUB-TOPICS

A

Bulk crystal production of innovative Ce-doped garnets and BGSO

B

Fibre-shaped crystal production of innovative Ce-doped garnets

C

Design and fabrication of scintillation detector prototypes for homogenous and sampling calorimeters



Exploratory Research Project

Innovative calorimeters for high energy physics based upon advanced scintillation materials



Research Internships

Research internships and trainings for early-stage researchers



Staff Exchanges

Short-term staff exchanges and trainings for experienced researchers



Soft skills

Research management and administration skill development

ABOUT

TWISMA is a Twinning project funded under the Horizon Europe programme of the European Union.

The overall aim of the project is to boost the scientific excellence and innovation capacity of the Institute for Scintillation Materials (ISMA) and its high-quality Twinning partners - European Organization for Nuclear Research (CERN) and Institute of Light and Matter (ILM) – to develop innovative calorimeters for high energy physics (HEP) based upon advanced scintillation materials.

To achieve this aim, TWISMA will implement a research and innovation strategy on innovative calorimeters for high energy physics based upon advanced scintillation materials and a series of knowledge exchange activities.