Picture courtesy of S. Kyselova; Bulletin of the Academy of Sciences of the Czech Republic (*ASCR)*

ASCIMAT

Newsletter Issue No. 1
December 2016

Dear Readers,

Welcome to our first issue of the ASCIMAT newsletter, where you will find all the details of recent events and upcoming activities for this exciting project. The aim is to provide you with up-to-date project results and information relevant to our ongoing research collaboration in the field of advanced scintillation materials.

ASCIMAT is funded by the European Commission's Horizon 2020 programme, with an overall aim to boost the scientific excellence and innovation capacity in advanced scintillation materials of the Institute of Physics of the Czech Academy of Sciences (FZU), by building upon the existing strong research and innovation base of FZU and its Twinning partners. Their scientific excellence and technology transfer capacity in advanced scintillation materials will be enhanced by implementing a research and innovation strategy focused on three sub-topics:

1. *Radiation damage and timing characteristics of scintillation materials,*
2. *Material dimensionality influence and characteristics under different excitation modes,*
3. *Defect influence on the transfer stage of scintillation mechanisms.*

Over the course of the ASCIMAT project, international collaborations in numerous technology and knowledge-transfer activities will be performed. The consortium partners will attend and encourage participation in events such as staff exchanges, summer schools, international conferences/publications and training workshops.

We hope that you continue to keep up with our updates and success within the project.

ASCIMAT Team

Fyzikální ústav AV ČR, v.v.i.

Lyon 1

CERN

Università degli Studi di Milano Bicocca

intelligentsia consultants

Pictures courtesy of S. Kyselova; Bulletin of the Academy of Sciences of the Czech Republic (*ASCR)*

Presenting the ASCIMAT Project

ASCIMAT is a three year project coordinated by Fyzikální ústav ČAV, v.v.i. (Institute of Physics ,Czech Academy of Sciences) alongside other consortium partners from well-known and highly-respected institutions in Europe: CERN (Switzerland), Institute of Light and Matter, University Lyon1 (France), University of Milano-Bicocca (Italy), and Intelligentsia Consultants (Luxembourg). Their strong expertise in the field of advanced scintillation materials is instrumental for future success in research and innovation based on the three sub-topics developed.

Together, the consortium partners will demonstrate their shared complementary research skills and knowledge in the field to accomplish the following objectives:

- Strengthen FZU's research excellence in advanced scintillation materials
- Enhance the research and innovation capacity of FZU and the Twinning partners
- Raise the research profile of FZU and the Twinning Partners
- Contribute to the SMART Specialisation Strategy of the Czech Republic
- Support research and innovation on a European level

To achieve these objectives, the consortium partners will implement a series of short term exchanges, training workshops, conferences and summer schools, as well as a strong focus dedicated to the dissemination and outreach strategies for the ASCIMAT project.

The ASCIMAT project officially launched at the beginning of 2016. Since then, the carefully-planned activities have been consistently ongoing and will continue to do well into its second year.

Kick-off meeting

The official Kick-off meeting took place on the 21st January 2016 in the Czech Republic, where the consortium partners gathered to discuss the action plan for the upcoming year. The ASCIMAT team outlined the Work Packages in greater detail in order to meet with collective understanding of responsibilities and goals for the upcoming year.

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1st meeting

The next ASCIMAT meeting was arranged in Lyon on July 15, 2016, where the project partners contributed their insight to implement staff exchanges and project management. Dissemination and outreach of the ASCIMAT project were also addressed to prepare the materials required for completing this task. Budgetary and organisational factors of workshops were also clarified by the team.

2nd Meeting

The ASCIMAT consortium arranged their final meeting for the first year of the project on December 1, 2016. During this gathering, they exchanged their most recent activities and accomplishments thus far. Staff exchanges were addressed as well to ensure targets are met by 2017. In addition, updates to publications and the organisation of the anticipated summer school in 2017 were also of topic.

Staff Exchanges

Currently, the staff exchanges between the consortium partners' institutions have been well underway and on-track during the first year. We are proud to announce that the following exchanges (no. of days) have been successfully completed:

FZU 84	⟷	CERN 103
FZU 53	⟷	ILM 110
FZU 90	⟷	UNIMIB 135

ASCIMAT workshop in Milan, IT; 12-13 September 2016 (summer school)

The University of Milano-Biccoca hosted an international audience of students and researchers with a diverse range of presentations. The summer school also emphasised other areas where their research may be applicable, which specifically included a guest from a prominent Czech industry partner, CRYTUR Ltd. Karel Blažek gave a stimulating presentation on the company's ongoing work and accomplishments. The project participants were also given training for potential EU funding schemes where they could demonstrate their scientific capabilities and the importance of intercultural communicative practices in research, as well as training for promotion and dissemination.

The students from the *Dipartimento* di Scienza *dei Materiali* were also given the opportunity to showcase their research accomplishments by presenting their findings. The workshop concluded with a tour of the Faculty's laboratories for its visitors.

Karel Blažek (left) and Martin Nikl (right)

CRYTUR materials display

Tour of department laboratories

For more information, the presentations from the Milan workshop are available for downloading from the project website.

ASCIMAT workshop in Prague, CZ; 1-2 December 2016 (winter school)

The project team organised a 2-day winter school in Prague at the beginning of December dedicated to PhD students and researchers in the field of advanced scintillation materials. The event attracted 21 participants from the ASCIMAT partnering organisations as well as students from the Faculty of Nuclear Sciences and Physical Engineering of the Czech Technical University.

During the first session, participants received training on the H2020 Programme with a particular focus on the Marie Skłodowska-Curie Actions - Individual Fellowships. they have considerably raised their awareness on the programme and learn how to prepare a competitive proposal. On the 2nd day, the attendees received training in developing their creativity to apply it in their professional and personal projects. The students appreciated the interactivity and group exercises in facilitating multicultural and multi-disciplinary dynamic within the international group.

Other recent news…

From July 10-15, 2016, the **International Conference on Defects in Insulating Materials** (ICDIM 2016) was hosted by the Institute of Light and Matter, a research institute of CNRS and University Lyon1. The ICDIM conference is organized every four years, where Prof. Christophe Dujardin was the chairperson for the 2016 edition, known as, a *broad international forum on the science and technology of defect-related phenomena in crystalline and amorphous wide band-gap materials.* For more information regarding the conference and its future session in 2020, please visit: http://icdim2016.univ-lyon1.fr/en

Lately, the ASCIMAT team supported the submission of Dr. Jan Pejchal's grant proposal for a *Marie Skłodowska-Curie Actions - Individual Fellowship* (e.g. MSCA-IF-2016). After a 7-year stay in Japan working at the Institute for Materials Research at Tohoku University, Dr. Pejchal has returned to FZU where he had started his career. With his reintegration into the Czech Republic, Dr. Pejchal is bringing back his valuable experience in the development of several families of fluoride and oxide scintillators and sharing his unique knowledge on the micro-pulling-down method developed at Tohoku University.

If the proposal is successfully evaluated, Dr. Jan Pejchal will work on the "Design, characterization and development of high-performance multicomponent perovskite scintillators", in collaboration with Claude Bernard University (France), CERN (Switzerland) and CRYTUR Ltd. (Czech Republic).

Best of Luck!

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Recent publications

In 2016, the FZU team has published about 50 papers to date in international journals concerning scintillating materials. . For the ASCIMAT project, there are joint papers (so far) between:

FZU-UNIMIB

M. Buryi, M. Fasoli, F. Moretti, M. Trubitsyn, V. Laguta, A. Vedda, M. Nikl, Self-trapped electron at (MoO4)3- center in PbMoO4: EPR and TSL comparative study. In preparation

M. Buryi, M. Fasoli, F. Moretti, M. Trubitsyn, V. Laguta, A. Vedda, M. Nikl, Stabilized electron traps in lead molybdate scrutinized by EPR and TSL. In preparation

FZU –CERN

M.T. Lucchini, S. Gundacker, P. Lecoq, A. Benaglia, M. Nikl, K. Kamada, A. Yoshikawa, E. Auffray, Timing capabilities of garnet crystals for detection of high energy charged particles. Submitted to Nucl. Instr. Meth. Phys. Research A.

FZU-ILM

A. Hospodková, M. Nikl, O. Pacherová, J. Oswald, B. Foltynski, P. Brůža, D. Pánek, A. Beitlerová, M. Oeztuerk, M. Heuken, E. Hulicius

Devices based on InGaN/GaN multiple quantum well for scintillator and detector applications

4th SMEOS - Sensors, MEMS and Electro-Optical Systems. Skukuza, South Africa, Sept. 12-14, 2016, invited talk. Accepted for SPIE proc.

A. Hospodková, O. Pacherová, J. Oswald, E. Hulicius, A. Beitlerová, K. Blažek, G. Ledoux, C. Dujardin, M. Nikl, Influence of InGaN QW number on luminescence properties of polar multiple QW structure. In preparation.

Upcoming events and activities

The 2nd summer school on "Advanced scintillating materials" will take place in Chamonix (France) from the 18-22 September 2017. The ASCIMAT team is pleased to announce that it will be broadcast as a satellite event within SCINT 2017- *14th International Conference on Scintillating materials and their applications*.

For more details regarding this event, please refer to their official website: http://indico.cern.ch/event/388511/

To learn more about the ASCIMAT project and to keep up with its activities and achievements, please visit the website:

ASCIMAT

www.h2020-ascimat.com/

European Commission

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