

## Results of the staff-exchange visit of the University of TWENTE, the Netherlands in frame of the project ERASMUS+ KA-107

- Delegation of the UTM, department MIB, consisting of coordinator of the project, professor of the Department MIB academician Sidorenko Anatolie, head of the Department MIB professor Oleg Lupan, associated professor Dr. Sergiu Railean, lecturer of the Department MIB Cristian Lupan, Lecturer of the Department MIB Birnaz Adrian have visited the University of Twente for the period 10.11.2021 – 16.11.2021.

**According to the plan of the working visit of the TWENTE University, members of delegation have done the following:**

- 1) participated in the conference – Training Workshop “**Advanced methods of nanostructures characterization**” at the University of Twente, organized by the project coordinator Prof.Dr. Sidorenko Anatolie, who presented the lecture with the theme “SPINTECH project - goals and achievements” on 11<sup>th</sup> November Prof.Dr. Valery Vinokur, from Argonne National Laboratory, USA, on 12<sup>th</sup> November, at 10:00 - 11:00, presented for participants of the workshop the lecture “**Topological nature of high-temperature superconductivity**” about Trends in superconductivity, as shown in Fig.1.

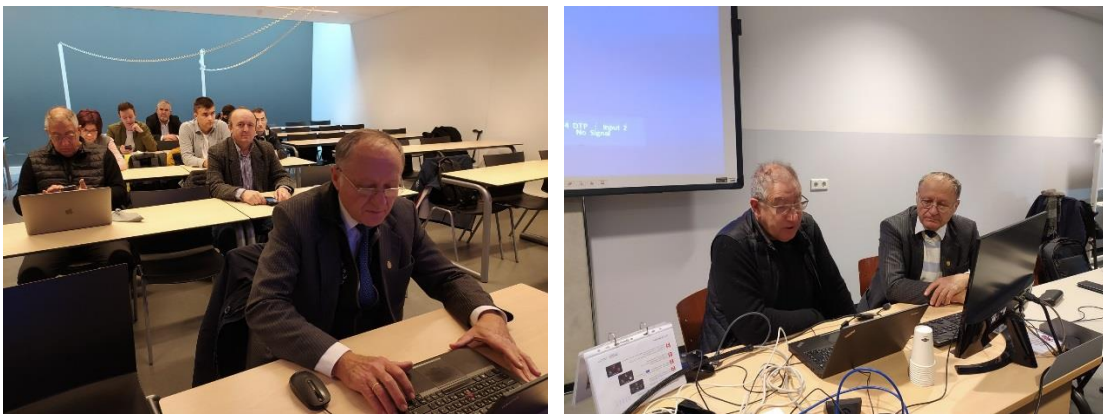


Fig.1: (left) Opening of the Workshop on 11<sup>th</sup> November; (right) Lecture of prof. Valerii Vinokur “Topological nature of high-temperature superconductivity” on 12<sup>th</sup> November.

- 2) During the visit of the “BRAINS Center for Brain-Inspired Nanosystems” of the University of Twente, on November 11, 14:30 - 16:00, have learned the functionality of nanoelectronic devices in the mode “deep-learning”. Afternoon, November 11<sup>th</sup>, it was the meeting with Prof.Dr.ir. Wilfred G. van der Wiel, Director of the “BRAINS Center for Brain-Inspired Nano Systems” and his collaborators – discussion of possible collaboration and supervision of our PhD students during their research work in Twente. It was discussed the possible collaboration - topics of joint research, as shown in Fig.2.



Fig.2: (left) UTWENTE Brains centre's director, Prof.dr.ir. Wilfred G. van der Wiel presents directions of research; (right) group of reserachers from Moldova by direct training in the BRAINS Centre.

- 3) On 12<sup>th</sup> November afternoon, from 15:00 till 17:00 we have visited the SQUID microscope laboratory and learned methods of investigation the magnetic properties of materials, as shown in Fig.3.

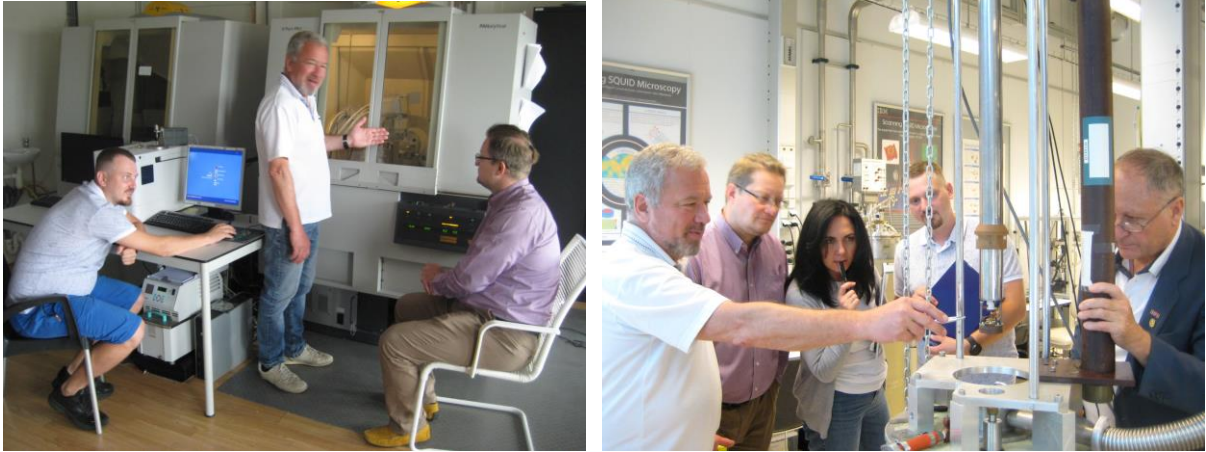


Fig.3: Prof.Dr. Alexander Golubov organized training of the UTM collaborators on XRD Diffractometer “X’Pert PRO” for learning of the high-resolution XRD characterization of the samples (links), and training on SQUID-microscope (rights). On November 13, at 10:00 - 11:00, the delegation participated in the workshop, listening the lecture given by Dr. Joachim Woitok, Enschede, the Netherlands, on the Use of X-Ray Diffraction for Characterization of Advanced Materials.

**Information gained during that staff-exchange visit will be used in UTM for elaboration of a new direction of study – Spintronics and Quantum Electronics, and creation of a new search Center in UTM in the area of spintronics and quantum electronics.**