LSI LASTEM co-founding a PhD grant at Politecnico di Milano

LSI LASTEM, with its constant commitment to **supporting universities** and **scientific research**, has recently chosen to **co-fund** the **PhD** of Dr. **Regina Bianchi**. This investment testifies to the company's constant commitment to promoting innovation and development in the environmental monitoring sector through collaboration with young researchers.

Dr. Bianchi emerges as a figure with a solid academic education and a constant commitment to the field of Geophysics. Since her days at high school, Regina Bianchi has demonstrated an innate interest in **scientific subjects**. This passion led her to the **Polytechnic of Milan**, where she studied **Environmental and Territorial Engineering**.

The collaboration with LSI LASTEM

Regina Bianchi's collaboration with LSI LASTEM dates back to her Master's thesis for which she carried out innovative **research** on the **G.Re.T.A. system** applied to the monitoring of the water content of a slope, as part of a project commissioned by RFI (Italian Railway Network). This experience contributed to

consolidating her knowledge of instrumentation, methodologies and challenges in the field of geophysics applied to the **prediction and prevention of hydrogeological risk**.

The PhD and the new challenges

Regina Bianchi has recently started her **PhD** and is preparing to face new challenges, focusing on **geoelectrical monitoring**, expanding on the work done during her Master's thesis project.

First step: time-lapse inversion of resistivity data

The **first topic** that Dr. Bianchi will focus on is the optimisation of the **time-lapse inversion of resistivity data**. During her thesis, she compared individual inversion of resistivity data with time-lapse inversion, highlighting how a good parameterisation of the algorithm can be beneficial for the analysis of continuous monitoring data.

Second step: optimisation of energy consumption

After concluding the analysis of the first topic, Regina Bianchi will focus on **optimising the system in terms of energy consumption**. The G.Re.T.A. system is based on self-powering via solar panels and batteries, for this reason the balance between the injection of current, such as to guarantee good quality data, and the maintenance of limited energy consumption is of vital importance.

Regina, therefore, aims to understand how to **optimise the injected current parameters based on the installation site** to minimise battery consumption, especially in places characterised by frequent cloudiness.

Conclusions

For **LSI LASTEM** it is essential to **support applied research** projects and initiatives that can open up new perspectives in the field of environmental

monitoring. For this reason, it is co-**funding the PhD scholarship** of Dr. **Regina Bianchi**, **who begins her journey with determination and passion**, in which she will dedicate herself to a research and development project related to the G.Re.T.A. system.