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STUDENT ENTREPRENEURSHIP AND INNOVATION AT THE DEPARTMENT
OF ENGINEERING HYDROLOGY OF THE RUSSIAN STATE
HYDROMETEOROLOGICAL UNIVERSITY

Ekaterina V. Gaidukova *, Anna A. Batmazova, Igor O. Vinokurov,
Nikolai A. Reshin, Maria S. Dregval

Russian State Hydrometeorological University (RSHU), Saint Petersburg, Russia

RSHU is a leading university in the fields of hydrology, meteorology, ecology, and oceanology. The Department of Engineering Hydrology, established in 2018, offers undergraduate and graduate programs in applied hydrometeorology. Research areas include forecasting, modeling, water resources management, water quality assessment, and the application of GIS technologies. The department actively fosters innovation by supporting student startups to integrate education, science, and business. Practical skills are developed through the “Project Activity in a Professional Field” course and the “Hydromet” accelerator, where teams solve real-world problems under the guidance of mentors. Particular attention is given to projects aimed at automating the monitoring of hydrological characteristics and processing big data. Examples of successful student startups clearly demonstrate the potential of this approach:

1. Data collection platform: aggregation of information from open sources into a single database with a web interface (Matlab scripts, MySQL database).
2. Autonomous water level meter: a device based on a hydrostatic sensor, powered by solar panels, and transmitting data via GSM (tested on the Oredezh River).
3. Evaporation monitoring system: an upgraded SHI-500-50 evaporator using strain gauges and an ESP32 module for transmitting data via Wi-Fi or GSM.
4. Groundwater level meter: a prototype based on a submersible pressure sensor (QDY30A) with a display and Wi-Fi, which has undergone laboratory and field testing.

Startup support enables the training of research engineers capable of creating new products for studying natural processes. Despite the lack of funding, the development of startup programs is promising thanks to grants, collaboration with businesses, and modern educational methods. Project support centers and infrastructure for youth entrepreneurship are essential for further progress.

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* **Corresponding Author:** Ekaterina V. Gaidukova, Ph.D. of Tech. Sci., Russian State Hydrometeorological University, Voronezhskaya str., 79, St. Petersburg, Russia. E-mail: oderiut@mail.ru