PUBLIC SELECTION BASED ON QUALIFICATIONS AND INTERVIEW FOR THE AWARDING OF NO. 1 EARLY STAGE GRANT LASTING 12 MONTHS FOR CONDUCTING RESEARCH PURSUANT TO ART. 22 OF LAW NO. 240/2010 AT THE DEPARTMENT OF MANAGEMENT, INFORMATION AND PRODUCTION ENGINEERING OF THE UNIVERSITY OF BERGAMO (A.R.F. 09/G1 – SYSTEMS AND CONTROL ENGINEERING – A.D. ING-INF/04 – SYSTEMS AND CONTROL ENGINNERING – CUP: E18B17000170009) TYPE B

announced with decree of the Rector Rep. no 291/2018 of 23.04.2018 and posted on the official registry of the University on 23.04.2018

RESEARCH PROJECT

"Development of technologies for the realization of beauty-care products personalized, safe, intellingent and ecological"

Research structure: Department of Management, information and production engineering

Duration of the grant: 12 months

Scientific Area: 09 - Industrial and information engineering

Academic recruitment field: 09/G1 – Systems and control engineering

Academic discipline: ING-INF/04 – Systems and control enginnering

Scientific Director: Prof. Fabio Previdi.

The general goal of the IOB project is the realization of a system for the optimization and personalization of the performance of small personal care appliances, in particular for skin care and hair care. The system consists of the following elements: the small appliances; an additional electronics with sensing and calculation capabilities; a communication system (BT or WiFi); a software. Specifically, the software, based on the measurements provided directly by the devices, controls the optimal configuration of the appliance both from the point of view of the treatment of the tissue (skin or hair) and from the point of view of energy consumption.

The candidate will carry out his research activity as part of WorkPackage 4 of the IOB project "Development of algorithms and software analytics" whose aim is the realization of algorithms that, using information from additional sensors and mobile devices, are able to label the tissue with a value of one of the indicators defining the tissue characteristics.

Furthermore, the algorithm must choose the most suitable configuration parameters for the domestic appliances.

The research project outline is the following:
1) Analysis of the state of the art and research of similar systems possibly available on the market
2) Definition of the specifications of the algorithms on the basis of the defined performance indicators and the sensors used
3) Development of algorithms on Matlab / Simulink or Python platform