



The 3 PhD positions offered at the Department of Neuroscience, Imaging and Clinical Sciences of the University "G. d'Annunzio" of Chieti-Pescara in Chieti (Italy) within the frame work of the Marie Skłodowska-Curie Innovative Training Network "INFANS - INTEGRating Functional Assessment measures for Neonatal Safeguard" (<http://www.infansproject.eu/>), funded by the European Union's Horizon 2020 Research and Innovation Programme.

The goal of INFANS is to develop a new neonatal brain monitoring system, designed to overcome the severe shortage of clinically viable means to high quality monitor the brain function in infancy, crucial to prevent later life neurological, cognitive and motor impairment. To accomplish this goal, INFANS established a structured European PhD training programme in biomedical engineering, signal processing and clinical procedures to train a new generation of creative and entrepreneurial young researchers.

The individual research projects of the 15 early stage researchers (ESRs) recruited by the INFANS partners encompass the topics: technological innovation, industrial development, clinical validation, identification of neonatal healthcare needs. As part of their research, the INFANS ESRs will develop a novel platform for high quality, clinically-viable EEG-NIRS monitoring accessible worldwide. Well-targeted visits and secondments, soft skills and dynamic training activities, an Open Science strategy, extensive involvement of ESRs in the network events organization, extensive contacts with other research, training and industrial European networks, dissemination activities and the award of Double doctoral degrees are further assets offered to INFANS ESRs.

Excellent science, industrial leadership and societal challenge are merged in the INFANS network. The INFANS consortium includes 6 academic and 4 non-academic partners from 6 EU countries, among which leading universities, companies and clinical institutions. The partners involved in INFANS share complementary expertise and facilities to provide international, interdisciplinary and intersectoral research training and mobility that will complement local doctoral training. The INFANS ESRs will become independent researchers with improved career prospects in both the academic and non-academic sectors, and will advance the EU capacity for innovation in biomedical engineering.

The 3 PhD positions offered at the Department of Neuroscience, Imaging and Clinical Sciences of the University "G. d'Annunzio" of Chieti-Pescara in Chieti (Italy) **are reserved for young researchers within their first 4 years of research career who must not have been already awarded a doctoral degree.** All candidates must also comply with the **Marie Skłodowska-Curie Actions international mobility requirement:** the candidates must not have resided or carried out their main activity (work, studies, etc.) in Italy for more than 12 months in the 3 years immediately before the starting date of the scholarship (i.e. September 1st, 2019).

The research projects planned for the 3 PhDs regard the implementation of advanced analytical methods and tools for the pre-processing and analysis of neonatal EEG signals.

Details on the job offers, conditions to be met to apply and related application forms are available on the **EURAXESS portal** at the link <https://euraxess.ec.europa.eu/jobs/371715> .

The successful candidates will receive an attractive salary in accordance with the MSCA regulations for Early Stage Researchers. The exact salary will be confirmed upon appointment, but may vary between €45.000,00 gross/year and €55.000,00 gross/year. The salary includes a living allowance, a mobility allowance and a family allowance (if specific requirements are met). The guaranteed PhD funding is for 36 months. For further information please contact Prof. Silvia Comani at comani@unich.it .

Short description of the 3 PhD positions available at the Department of Neuroscience, Imaging and Clinical Sciences of the University "G. d'Annunzio" of Chieti-Pescara in Chieti (Italy):

Position #1 (internal ID code "ESR3"): Project Title "Novel BSS-based fingerprint method for the real-time correction of artefacts in infant EEG signals"; Primary Supervisor: Prof. Silvia Comani; Secondary Supervisor: Prof. Sabine Van Huffel (Katholieke Universiteit of Leuven, Belgium). Research Objectives: Development and optimization of a software toolbox for the real-time detection and correction of biological and environmental artefacts affecting the neonate and infant EEG using the features of the signal components separated with BSS methods. Degree awarded at the end of training: double Doctoral Degree in Neuroscience and Imaging at the University G d Annunzio of Chieti-Pescara (Italy) and in Biomedical Sciences and Health and Technology at the Katholieke Universiteit of Leuven (Belgium).

Position #2 (internal ID code "ESR4"): Project Title "Neonatal functional connectivity patterns on short-term EEG to estimate brain maturity"; Primary Supervisor: Prof. Filippo Zappasodi; Secondary Supervisor: Dr. Nathan Stevenson (University of Helsinki, Finland). Research Objectives: Characterization of the EEG connectivity patterns in the developing brain to evaluate functional maturity of the neonatal/infant brain in pathological and non-pathological conditions. Algorithms integration in the SW toolbox for analysis of short-term EEG. Degree awarded at the end of training: Doctoral Degree in Neuroscience and Imaging at the University G d Annunzio of Chieti-Pescara (Italy).

Position #3 (internal ID code "ESR5"): Primary Supervisor: Prof. Silvia Comani; Secondary Supervisor: Dr. Sampsa Vanhatalo (University of Helsinki, Finland); Project Title "Estimation of neonatal brain efficiency by means of functional network properties". Research Objectives: Definition of the best topological measures to characterize the brain networks properties in stable neonates/infants for differential diagnosis purposes. Development of a SW toolbox for the analysis of short-term EEG data (brain maturity, network properties). Degree awarded at the end of training: Doctoral Degree in Neuroscience and Imaging at the University G d Annunzio of Chieti-Pescara (Italy).