



Job Opportunity

Profilo: Ingegnere elettronico / aerospaziale / fisico con competenze in plasma e/o antenna e/o esperienza di laboratorio con strumentazione di test / gradita esperienza di programmazione.

Obbligatoria la conoscenza della lingua Inglese

La posizione è per un neolaureato (laurea breve, preferita la magistrale) per cui non si richiedono notevoli criteri di esperienza pregressa (comunque gradita).

Di seguito gli abstract per progetto:

PATH – Plasma Antenna Technology

- PATH is intended to promote a collaborative researches focused in the development of high density plasma sources implemented with the Exchange of staff personnel between the partners of the network. The research will also address transfer of knowledge and training of the researchers in the specific field of plasma sources and its applications in the telecommunication sector.
- High density plasma sources find large number of industrial applications from material treatment to Telecommunication. Overcoming the density limit of current source will open new frontier in several technological field.
- PATH aims at cross linking different competences to study and develop prototype of plasma sources and plasma antenna based on hybrid technologies based on Radiofrequency and Hollow cathode technologies. A Gaseous Plasma Antenna is a plasma discharge confined in a dielectric tube that uses partially or fully ionized gas to generate and receive electromagnetic waves; GPAs are virtually “transparent” above the plasma frequency and become “invisible” when turned off. Unlike ordinary metallic antennas, GPAs and Plasma Antenna Arrays can be reconfigured electrically (rather than mechanically) with respect to impedance, frequency, bandwidth and directivity on time scales the order of microseconds or milliseconds. It is also possible to stack arrays of GPAs designed to operate at different frequencies.
- A Plasma Antenna will be able to: (i) identifying the direction of incoming signal, (ii) tracking and locating the antenna beam on the mobile/target, (iii) beam-steering while minimizing interferences. Actual technology is based mainly on: (i) DC discharge, (ii) AC discharge, (iii) RF discharge, (iv) Microwaves, (v) Hollow cathode. Improvement of plasma source performances require a strong effort in term of modelling and technology.

LUMINO / IN TIME

- As the ongoing robotic exploration to Mars has made some tantalising discoveries, the next major step should be retrieving samples from the Martian surface, so they can be investigated in detail in terrestrial laboratories. However, considering the huge costs associated to such missions, an in-situ dating of rock samples is a more cost-effective approach. Accurate estimation of absolute ages is required in order to understand Mars surface and atmosphere evolutionary processes. Furthermore knowledge on occurrence and time frequency of such processes allow a hazard evaluation for locations/areas, essential for future deployments, missions and eventually humans on Mars. However, a chronology for recent events on Mars is problematic, as uncertainties associated with current methodology (crater counting) are comparable to the younger ages obtained (~ 1 Million years).
- The project LUMINO consists in the development of an instrument for absolute dating of planetary & terrestrial sediments making use of luminescence techniques.
- IN-TIME project addresses the technological and economic viability of a leading-edge instrument for dating of Mars' surface: a miniaturized Luminescence dating instrument for in-situ examination. Thanks to the development of its innovative technology, and in addition to planetary exploration application, it will also address Earth's field applications as a light and portable dating instrument in geology and archaeology as well as a risk assessment tool for accident and emergency dosimetry and nuclear mass-casualty events.



- For the first six months the work venue is in Guidonia (Rome). Mandatory secondment to European labs (University of Southampton UK, Technical University of Crete, Chania, Greece) up to 12 months is part of the requirements.
- Education: minimum requirement is a Bachelor Degree (Laurea Breve) in Engineering or Physics.
- Remuneration: 1000-1100 € net , 14 payslips for year, CCNL Centro Elaborazione Dati.
- Remuneration during secondment: standard salary + 600€ (tax free) + free accommodation & travel
- Contract duration: 2 years with possibility of extension and possibility of involvement in other EU contracts managed by Alma Sistemi and its European Associates

Contacts:

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