Cover letter for the INFRACHIP Research RAP: From Functional Inks to Printed Devices

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To:
Selection Committee
INFRACHIP Research Accelerator Program
UNINOVA, Almada, Portugal

Subject: Application for the Research Accelerator Program "From Functional Inks to Printed Devices"

Dear Members of the Selection Committee,

I am writing to express my keen interest in participating in the Research Accelerator Program (RAP) "From Functional Inks to Printed Devices", to be held at UNINOVA, Almada, Portugal. As an Early-Stage Researcher at CeRICT scrl and the University of Sannio (Italy), I am eager to enhance my knowledge and practical expertise in the formulation of functional inks and the fabrication of printed electronic devices for next-generation sensing and nanophotonic applications.

I hold a Ph.D. in Information Technologies and Electrical Engineering from the University of Naples Federico II, where my research focused on the design and development of plasmonic and photonic biosensors for point of care (Medical Applications). My work involves micro/nanofabrication, material characterization, and optical modeling, using tools such as AFM, SEM, and FTIR-ATR, alongside simulation environments like COMSOL Multiphysics, Lumerical, and Tidy3D. Recently, my research has been expanding toward the integration of nanostructured materials into flexible and hybrid platforms, aligning closely with the objectives of this RAP.

The opportunity to gain hands-on experience with ink formulation, deposition processes, and printed device characterization is particularly exciting to me. I am especially interested in understanding how material composition and process parameters influence the electrical and functional performance of printed devices such as memristors and piezoresistive sensors. The RAP's focus on connecting formulation strategies with device behavior perfectly complements my ongoing research goals of advancing biosensing and nanophotonic systems through scalable, flexible electronics.

I am confident that this program will not only strengthen my experimental capabilities but also foster valuable collaborations within the European flexible electronics and nanotechnology community. Participation in this hands-on training will directly contribute to my professional growth and to the advancement of my current research projects at CeRICT and the University of Sannio.

Thank you very much for considering my application. I look forward to the opportunity to contribute to and learn from this dynamic program at UNINOVA.

Sincerely,
Babar Ali
Early-Stage Researcher
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