

A minimally Invasive Surgical Platform Against Pancreatic and Biliary Tract Cancers Using Cold Atmospheric Plasma

Vasilios Vavourakis¹, Charalambos Anastassiou², Thierry Dufour³, Laura Fouassier⁴, Panagiotis Svarnas⁵

¹Mechanical and Manufacturing Engineering, University of Cyprus, Nicosia, Cyprus

²Electrical and Computer Engineering, University of Cyprus, Nicosia, Cyprus

³Sorbonne Université, CNRS, Institut de Biologie Paris-Seine (IBPS), UMR 7622, Biologie du développement, F-75005 Paris, France

⁴Centre de Recherche Saint-Antoine, CRSA, Sorbonne Université, INSERM, 75012 Paris, France

⁵High Voltage Laboratory, Department of Electrical and Computer Engineering, University of Patras, Rion, 26 504 Patras, Greece

E-mail: vavourakis.vasileios@ucy.ac.cy

Introduction

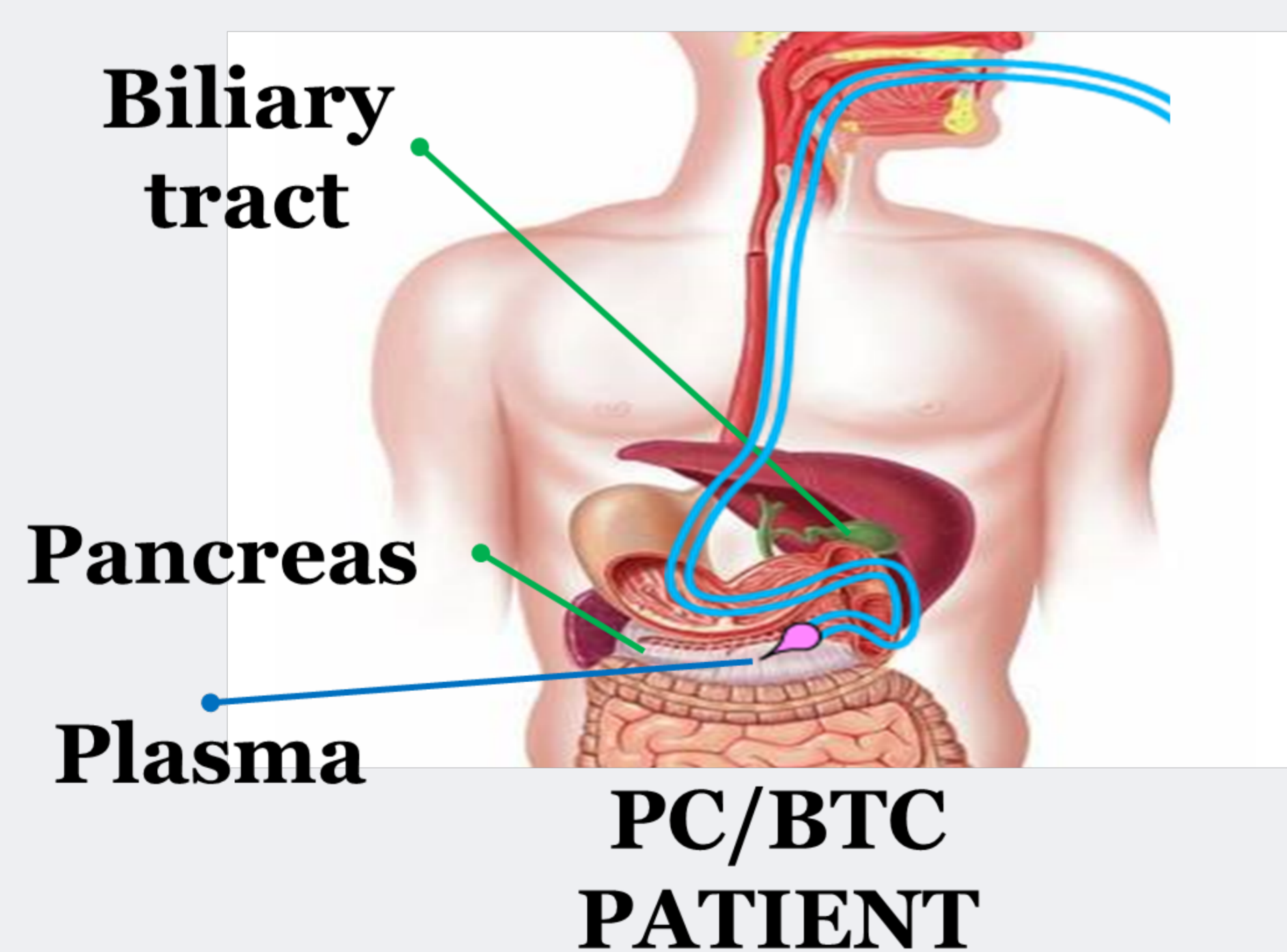
Pancreatic cancer (PC) and biliary tract cancer (BTC) are two gastro-intestinal adenocarcinomas with an increasing incidence, particularly among the elderly and women, with a poor prognosis and high mortality rates. Current clinically approved therapeutics may include surgery or/and chemotherapy, nonetheless, are limited and have poor efficacy.

Cold Atmospheric Plasma (CAP) has shown potential for treatment [1] but CAP has to overcome **main challenges**:

1. CAP needs to be delivered in very challenging anatomy without easy access.
2. CAP therapeutic agents need to be controlled and stable during treatment

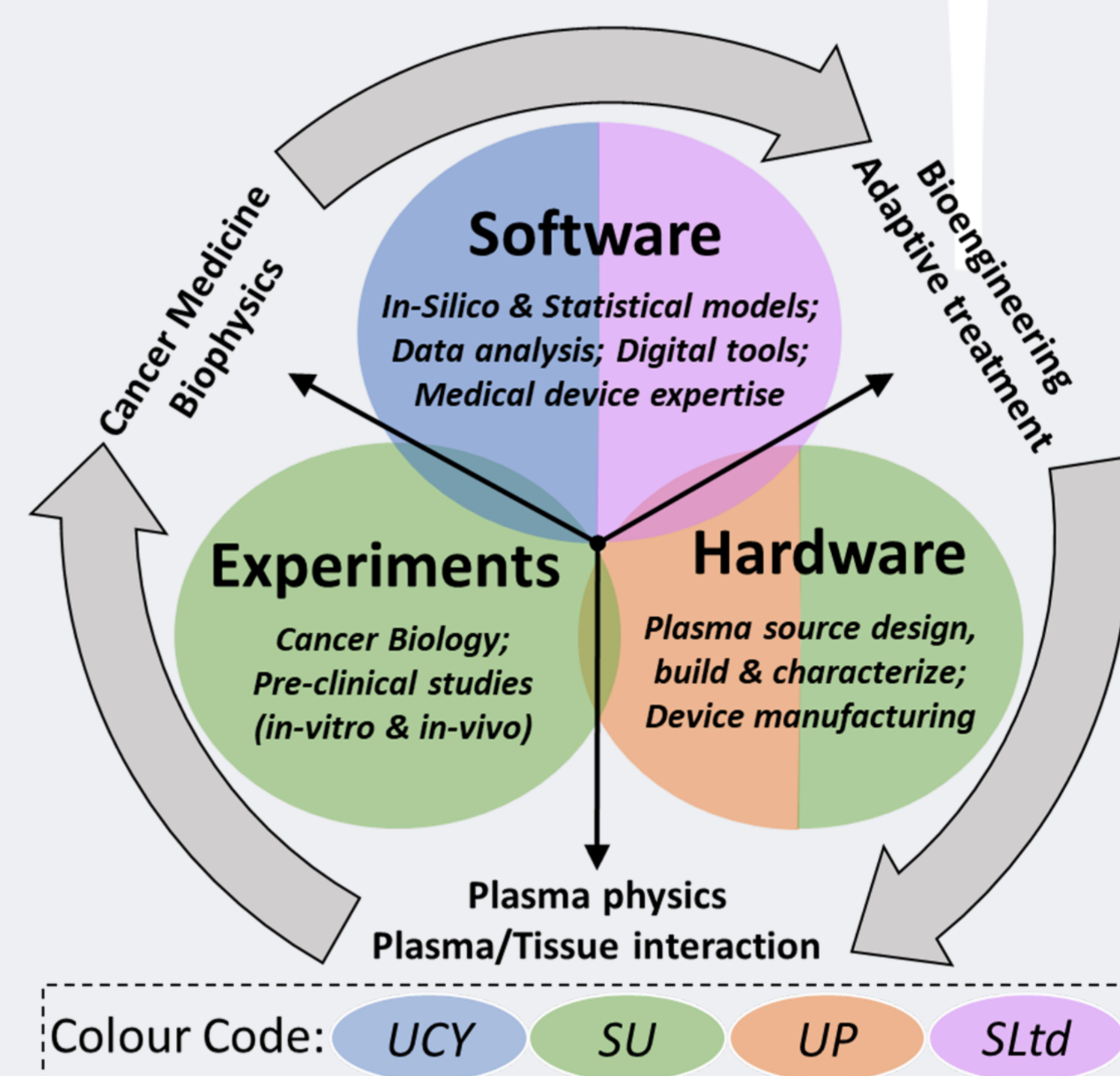
IgnitePLASMA proposal:

1. Deliver plasma through flexible probe.
2. Develop adaptive [2] therapy and control systems for the plasma source that are based on advanced in silico modelling and are validated through our in-vitro and in-vivo experiments.



Project Scope

IgnitePLASMA [3] started on 1/4/2024 and is a 48-month project coordinated by the University of Cyprus (UCY) in Cyprus and with partners Sorbonne Université (SU) in France, University of Patras (UP) in Greece, Synnous Ltd (SLtd) in UK and associated partner, Cyprus Bank Oncology Center in Cyprus./ It brings cutting edge software and hardware tools to demonstrate efficacy against PC and BTC through in-vivo experiments.



Acknowledgement

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References

- [1] Woedtke et al. 2019 [doi:10.21873/invivo.11570](https://doi.org/10.21873/invivo.11570); Fridman et al. 2018 [doi:10.1002/ppap.200700154](https://doi.org/10.1002/ppap.200700154)
- [2] Gjika et al. 2018 [doi:10.1021/acsami.7b18653](https://doi.org/10.1021/acsami.7b18653)
- [3] <https://cordis.europa.eu/project/id/101129853> and www.igniteplasma.eu