

Selective Carbon Nanomaterial Growth on Multipanel Electrochemical Sensors for Emergency Units

Irene Taurino^a, Arnaud Magrez^b, László Forró^c, Giovanni De Micheli^a, Sandro Carrara^a



^a Laboratory of Integrated Systems, EPFL, Lausanne, Switzerland

^b Crystal Growth Facility, EPFL, Lausanne, Switzerland

^c Laboratory of Physics of Complex Matter, EPFL, Lausanne, Switzerland



1. Motivation

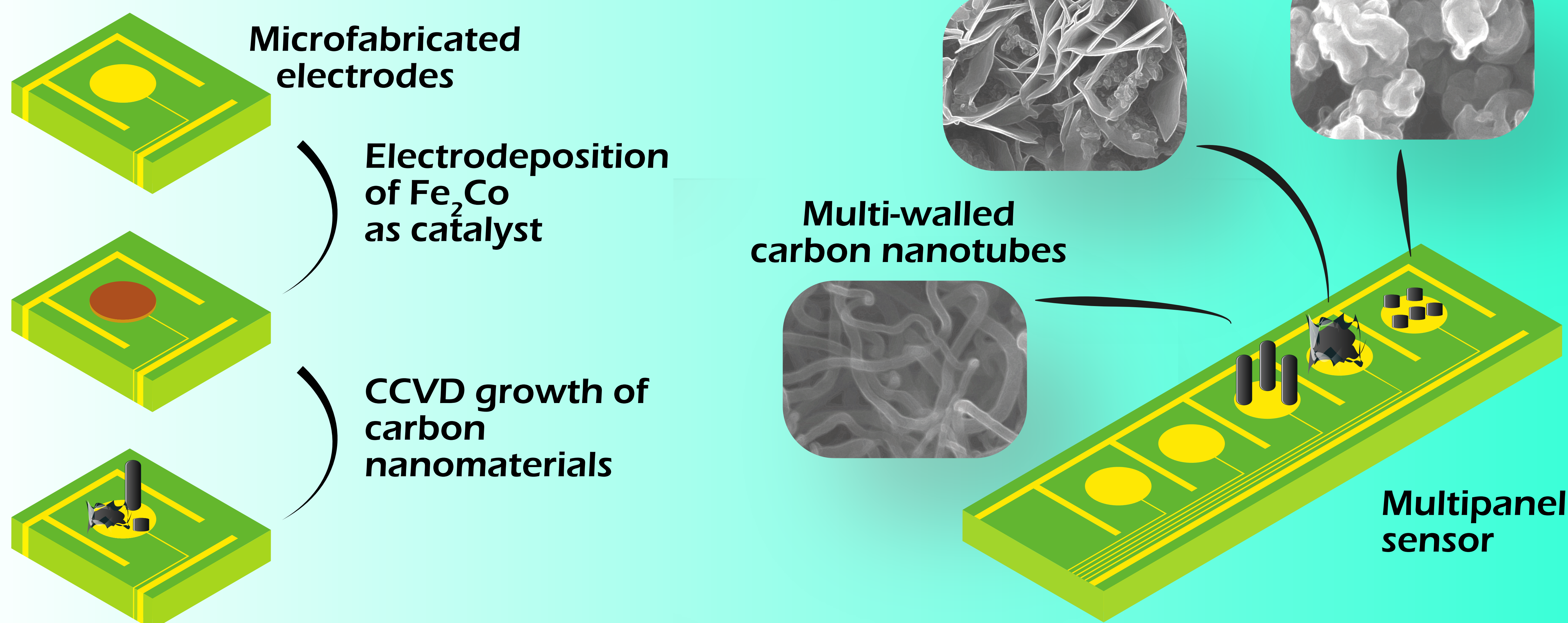
- * Management of critically ill patients requires frequent measurements of many analytes
- * Historical tests remote from the patient
- * Urgent “real-time” diagnostic information

2. Scope

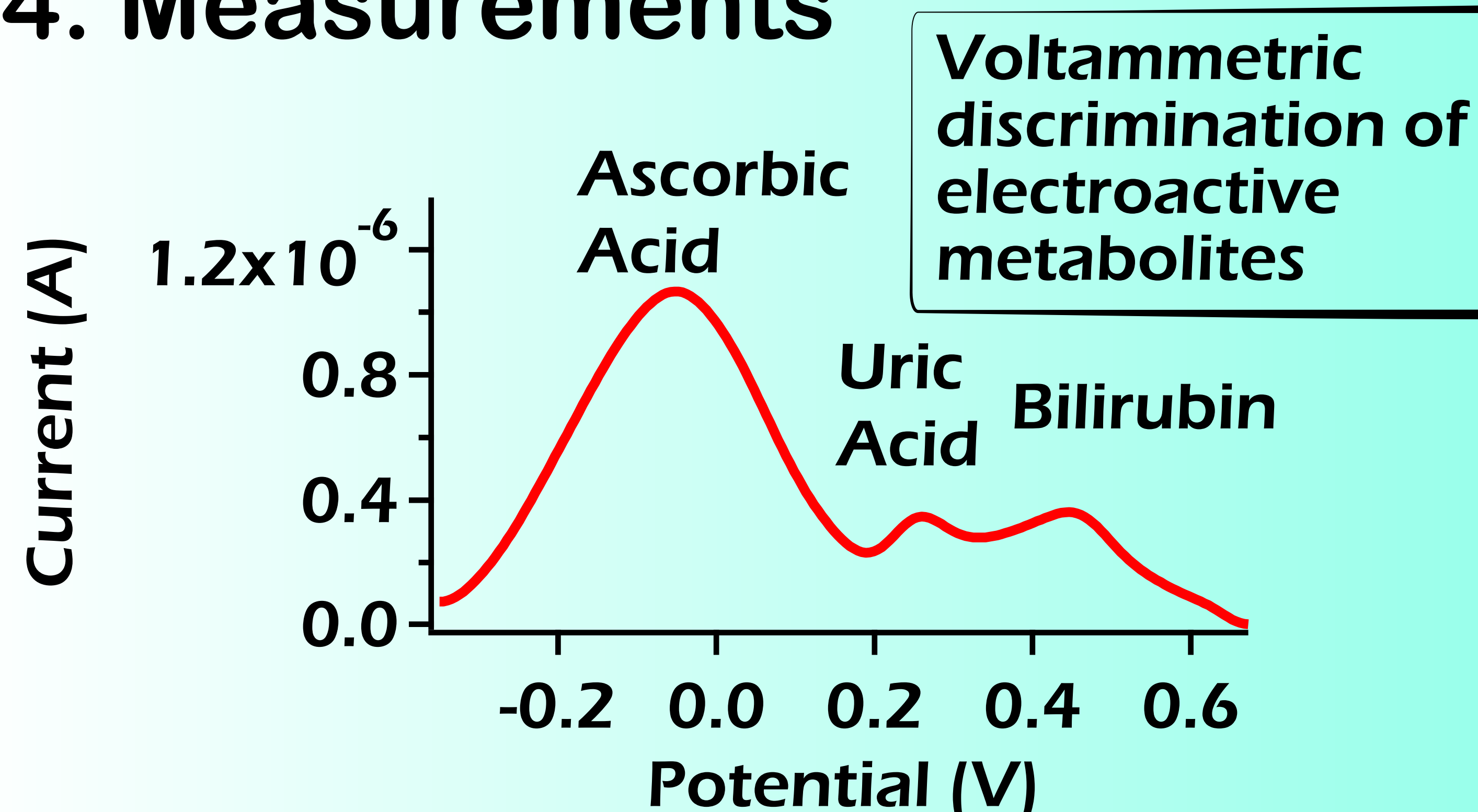
Selective nanocarbon growths

- * compatible with CMOS processes
- * improve sensitivity and detection limit
- * as “good platform” to immobilize bioprobes
- * for sensing avoiding interferences

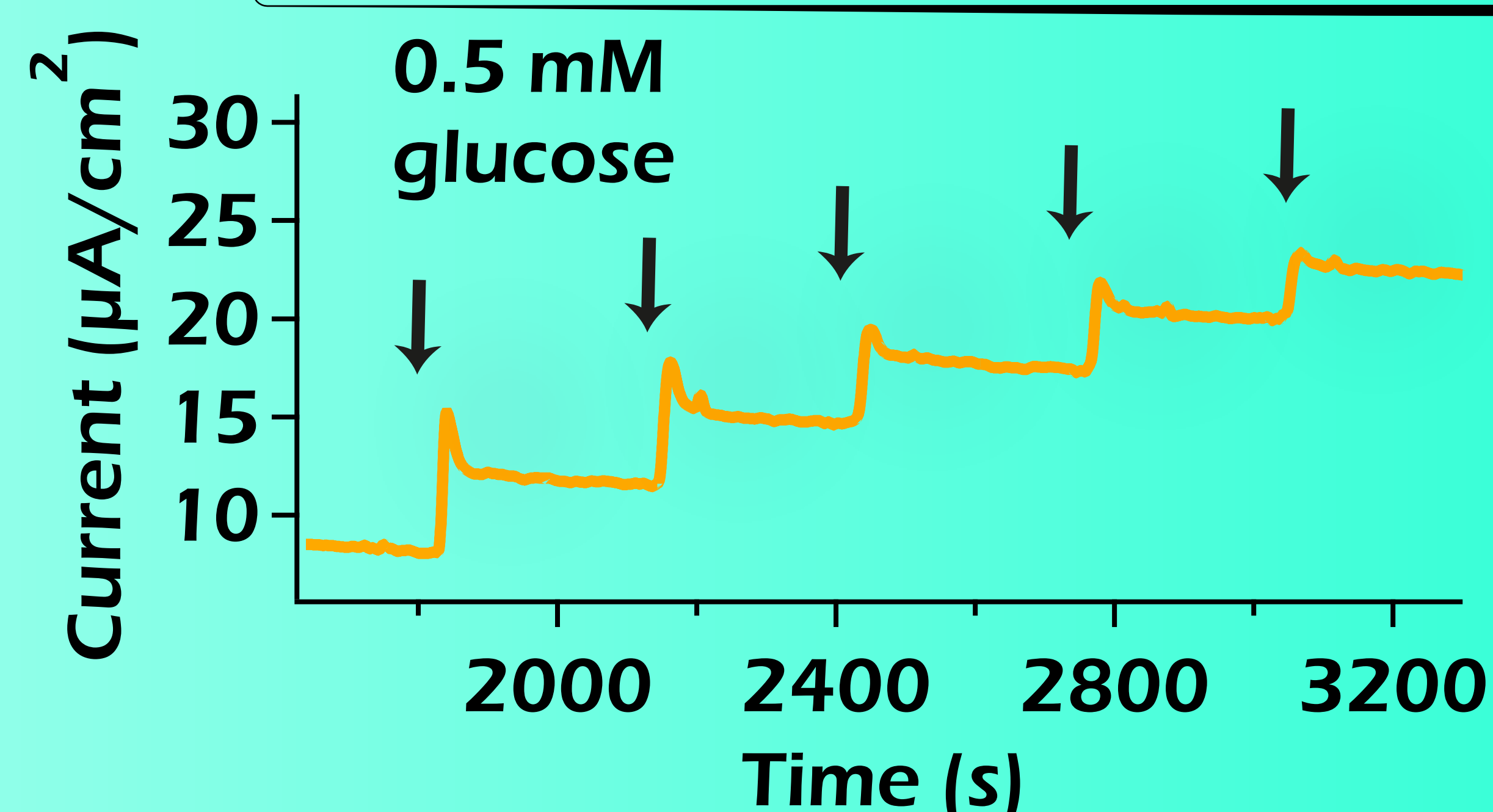
3. Nanofabrication



4. Measurements



Enzyme-mediated detection with a sub-micromolar detection limit



5. Conclusions

- * selective and direct synthesis of a wide range of carbon nanomaterials down to CMOS compatible temperatures
- * simultaneous sensing of different electroactive metabolites
- * excellent enzyme-mediated sensing

Publications

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 - [10] I. Taurino, et al., *IWASI*, 2011 4th IEEE International Workshop on, pages 90–93. IEEE, 2011.
- Patents
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Andrea Cavallini for the design of the microfabricated array-based sensing platform and Laurent Bernard for the preparation of the CVD system. The research was supported by the i-IronIC++ project. The i-IronIC++ project was financed by a grant from a Swiss Nanotera.ch initiative and evaluated by the Swiss National Science Foundation.