



Středoevropský technologický institut, výzkumná skupina Chytré nanostroje
 Laboratoř metalomiky a nanotechnologií, Mendelova univerzita v Brně



Seminář/Seminar PRO_5874

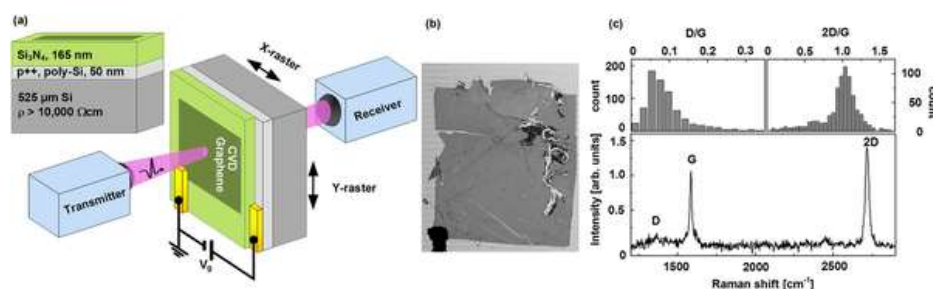
Vás zve na seminář:

Quantitative determination of target gene with electrical sensor

Ing. Jana Vlachová, Ing. et Ing. David Hynek, Ph.D.

Abstrakt

Integrating loop-mediated isothermal amplification (LAMP) with capacitively coupled contactless conductivity detection (C4D), we have developed an electrical sensor for the simultaneous amplification and detection of specific sequence DNA. Using the O26-wzy gene as a model, the amount of initial target gene could be determined via the threshold time obtained by monitoring the progression of the LAMP reaction in real time. Using the optimal conditions, a detection limit of 12.5 copy/ μ L can be obtained within 30 min. Monitoring the LAMP reaction by C4D has not only all the advantages that existing electrochemical methods have, but also additional attractive features including being completely free of carryover contamination risk, high simplicity and extremely low cost. These benefits all arise from the fact that the electrodes are separated from the reaction solution, that is C4D is a contactless method. Hence in proof of principle, the new strategy promises a robust, simple, cost-effective and sensitive method for quantitative determination of a target gene, that is applicable either to specialized labs or at point-of-care.



04. 09. 2015, 15:00 h

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