CRIM-TRACK: Sensor System for Detection of Criminal Chemical Substances - DTU Orbit
(29/09/2019)

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Detection of illegal compounds requires a reliable, selective and sensitive detection device. The successful device features automated target acquisition, identification and signal processing. It is portable, fast, user friendly, sensitive, specific, and cost efficient. LEAs are in need of such technology. CRIM-TRACK is developing a sensing device based on these requirements. We engage highly skilled specialists from research institutions, industry, SMEs and LEAs and rely on a team of end users to benefit maximally from our prototypes. Currently we can detect minute quantities of drugs, explosives and precursors thereof in laboratory settings. Using colorimetric technology we have developed prototypes that employ disposable sensing chips. Ease of operation and intuitive sensor response are highly prioritized features that we implement as we gather data to feed into machine learning. With machine learning our ability to detect threat compounds amidst harmless substances improves. Different end users prefer their equipment optimized for their specific field. In an explosives-detecting scenario, the end user may prefer false positives over false negatives, while the opposite may be true in a drug-detecting scenario. Such decisions will be programmed to match user preference. Sensor output can be as detailed as the sensor allows. The user can be informed of the statistics behind the detection, identities of all detected substances, and quantities thereof. The response can also be simplified to “yes” vs. “no”. The technology under development in CRIM-TRACK will provide custom officers, police and other authorities with an effective tool to control trafficking of illegal drugs and drug precursors.

General information
Publication status: Published
Organisations: Department of Applied Mathematics and Computer Science, Department of Micro- and Nanotechnology, Surface Engineering, Cognitive Systems, Cranfield University, Pro Design Electronic GmbH, Securetec Detektions-Systeme AG, Gammadata Instrument AB
Contributors: Munk, J. K., Buus, O. T., Larsen, J., Dossi, E., Tatlow, S., Lässig, L., Sandström, L., Jakobsen, M. H.
Pages: 1-5
Publication date: 2015

Host publication information
Title of host publication: Optics and Photonics for Counterterrorism, Crime Fighting, and Defence XI; and Optical Materials and Biomaterials in Security and Defence Systems Technology XII
Volume: 9652
Publisher: SPIE - International Society for Optical Engineering
Article number: 965208
ISBN (Print): 9781628418620
Keywords: Trace vapor sensing, Drugs, Explosives, Precursors, Colorimetry, Optics, Disposable Chip, User friendly
Electronic versions:
965208.pdf
DOIs:
10.1117/12.2194915

Bibliographical note
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Source: PublicationPreSubmission
Source ID: 116708170
Research output: Chapter in Book/Report/Conference proceeding > Article in proceedings – Annual report year: 2015 > Research > peer-review