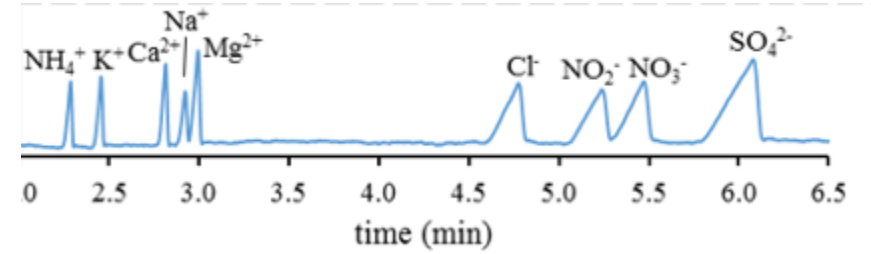
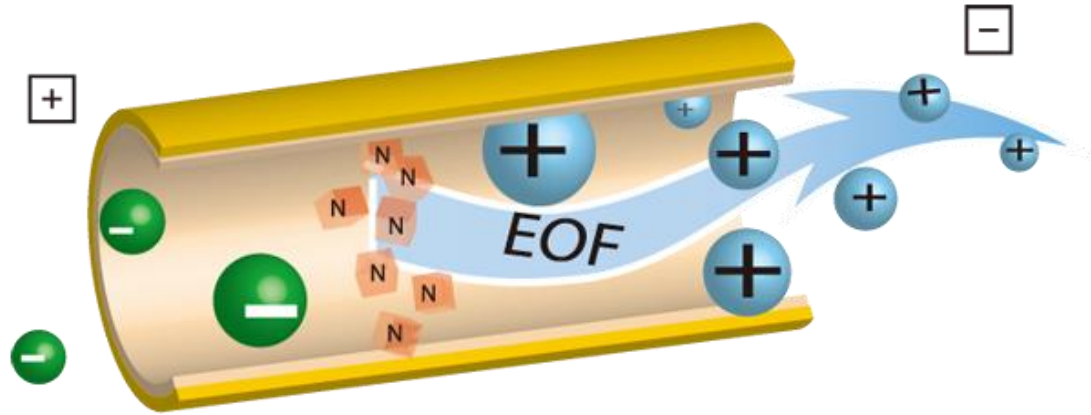


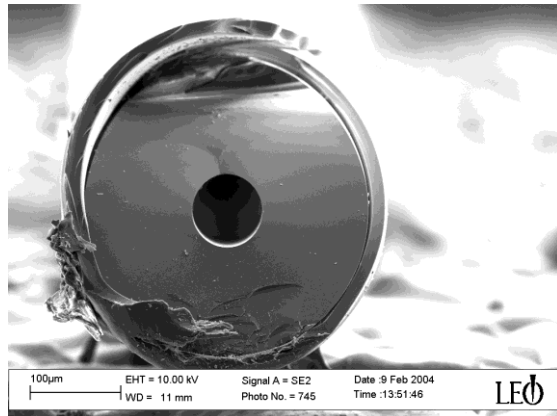
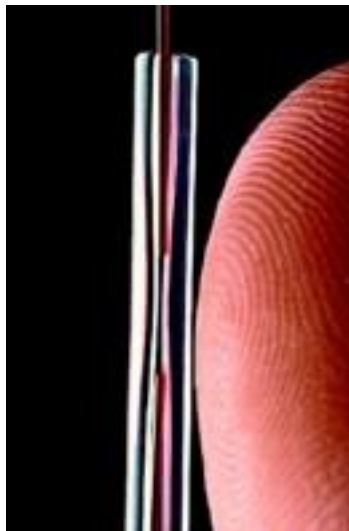
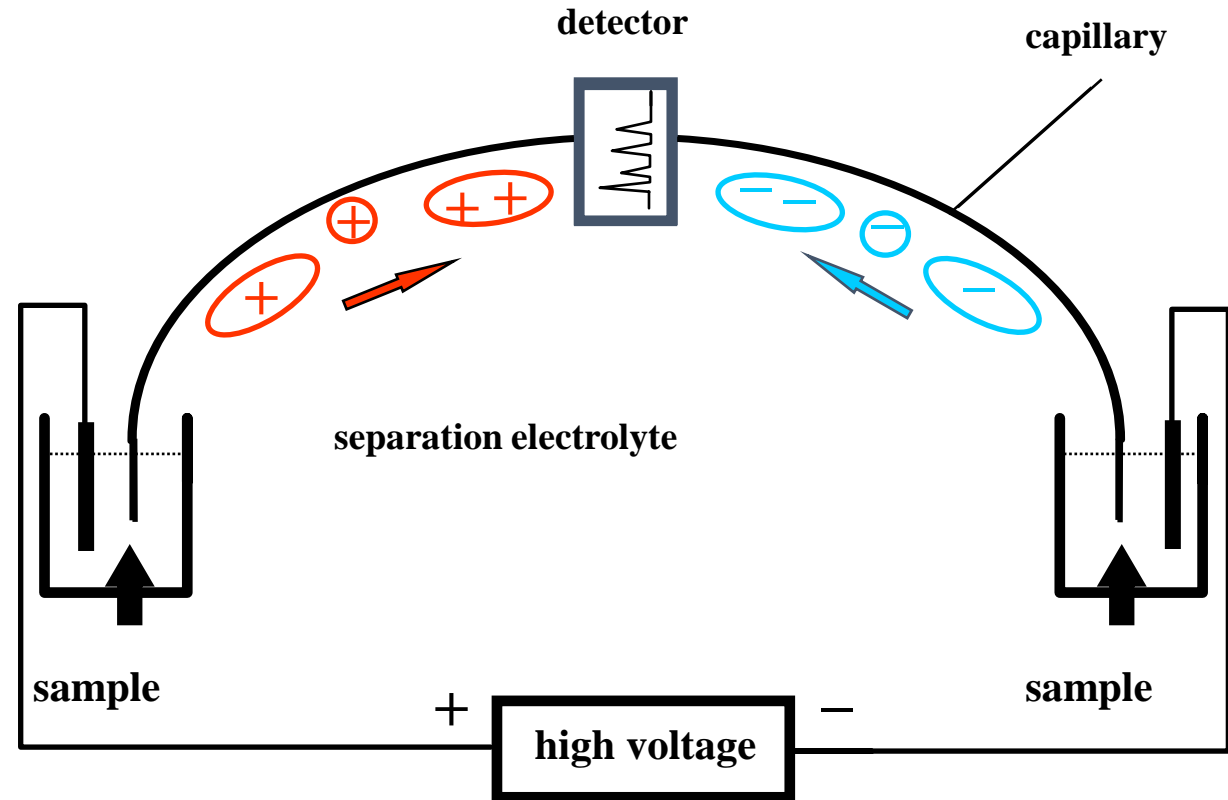
VYUŽITÍ KAPILÁRNÍ ELEKTROFORÉZY V ANALÝZE KLINICKÝCH VZORKŮ

Doc. RNDr. Petr Kubáň, Ph.D.
Ústav Chemie MU
petr.kuban@gmail.com

KAPILÁRNÍ ELEKTROFORÉZA (CE)



bezkontaktní konduktometrická detekce
laserově indukovaná fluorescence



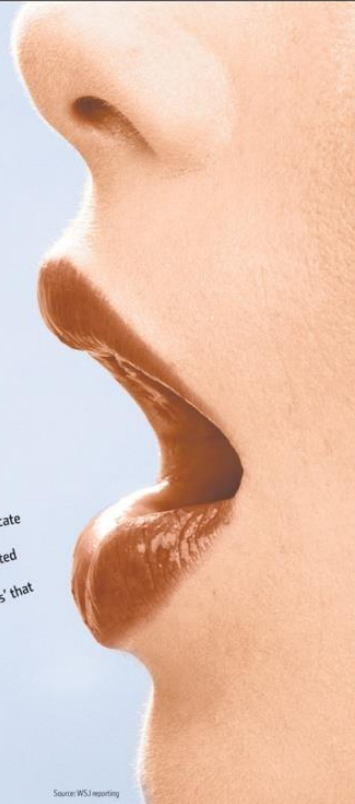
KLINICKÁ DIAGNOSTIKA



What Your Breath Reveals

EXHALED BREATH CONTAINS thousands of chemical compounds that can signal health issues. Scientists are developing tests to diagnose a growing list of diseases based on breath. Some diseases—and the clues that come out of your mouth:

- ASTHMA: **Nitric oxide** levels rise when airways are inflamed.
- STOMACH ULCERS: The gut bacteria *H. Pylori*, when mixed with a chemical tracer, emits a **carbon isotope** in breath.
- LUNG CANCER: Tumors create dozens of unique **volatile organic compounds**, while sensory arrays identify telltale patterns.
- DIABETES: Elevated levels of **acetone in breath** indicate ketosis, which reflects insufficient glucose.
- KIDNEY DISEASE: 'Electronic nose' test recognizes **ammonia-like odor** linked to renal failure.
- LIVER DISEASE: Patients whose livers can't metabolize a tracer solution containing methacetin show changes in **carbon dioxide levels**.
- IRRITABLE BOWEL SYNDROME: **Elevated hydrogen** in breath can indicate bacterial overgrowth in small intestine.
- LACTOSE MALABSORPTION: Undigested lactose in the colon is fermented by bacteria, **raising hydrogen breath levels**.
- HEART TRANSPLANT REJECTION: Rejection creates 'oxidative stress' that produces **alkanes and methylalkanes** in breath.



Source: WSJ reporting

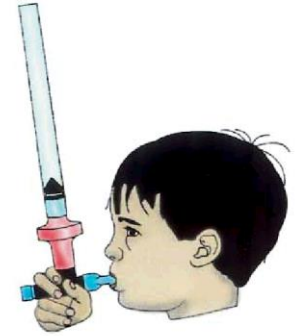


FIG 2. A commercially available collection device. The RTube collection system is portable and disposable, and it can collect a sample in as little as 1 minute.



SPOLUPRÁCE

FAKULTNÍ NEMOCNICE V BRNĚ

NEMOCNICE S POLIKLINIKOU HAVÍŘOV

**CYSTIC FIBROSIS DIAGNOSTIC
NETWORK GROUP, EU**

PROJEKTY

1. ANALÝZA KONDENZÁTU DECHU V NEINVAZIVNÍ DIAGNOSTICE REFLUXNÍ NEMOCI KAPILÁRNÍ ELEKTROFORÉZOU (GRANT MZV)



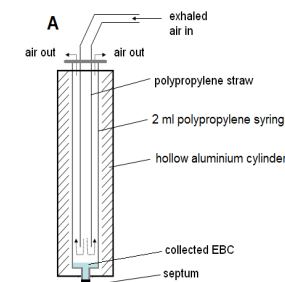
2. VYUŽITÍ NEINVAZIVNÍCH METOD ODBĚRŮ VZORKŮ V KLINICKÉ DIAGNOSTICE (CYSTICKÁ FIBRÓZA, POTNÍ TESTY)



3. SOUČASNÉ STANOVENÍ KYSELINY MRAVENČÍ A METANOLU POMOCÍ KAPILÁRNÍ ELEKTROFORÉZY



4. KAPILÁRNÍ ELEKTROFORÉZA S LASEROVĚ INDUKOVANOU FLUORESCENCÍ (BIOMARKERY V KONDENZÁTU DECHU atd.)



KONTAKT

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532 290 142