CMP Scientific

Capillary Electrophoresis - Mass Spectrometry

(CE-MS products & services)

www.cmpscientific.com

CMP Scientific

Company Overview

10	5
Years in business	Locations
50	200
Team members	Publications

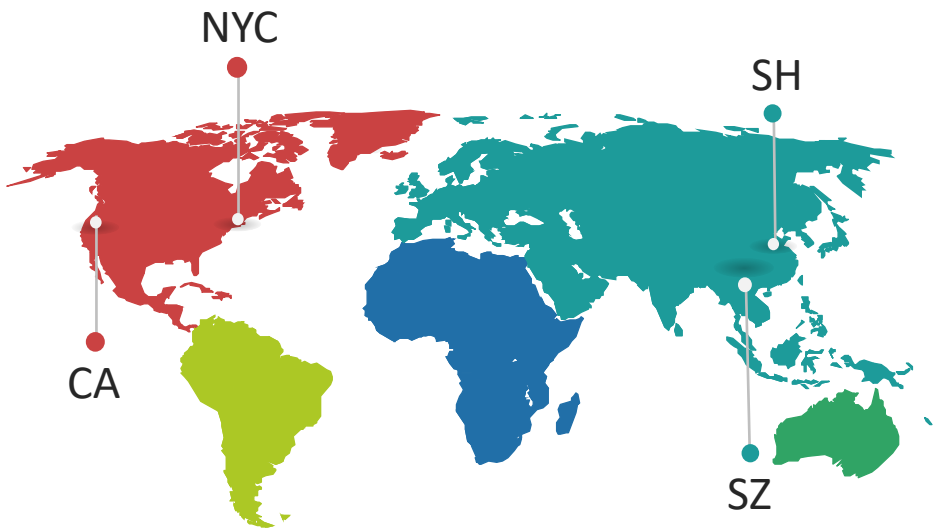
CE & CE/MS ion source

ECE-001 CE

EMASS-II CE-MS ion source

CE-TOF

EMAST-A CE-TOF



Consumables & reagents

Separation capillaries

Electrospray emitters

cIEF-MS reagent kit

Services

- CE-SDS peak ID
- iCIEF peak ID
- CE-MS training

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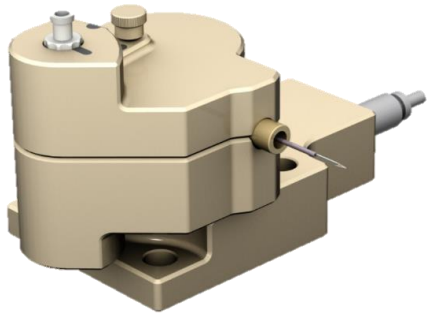
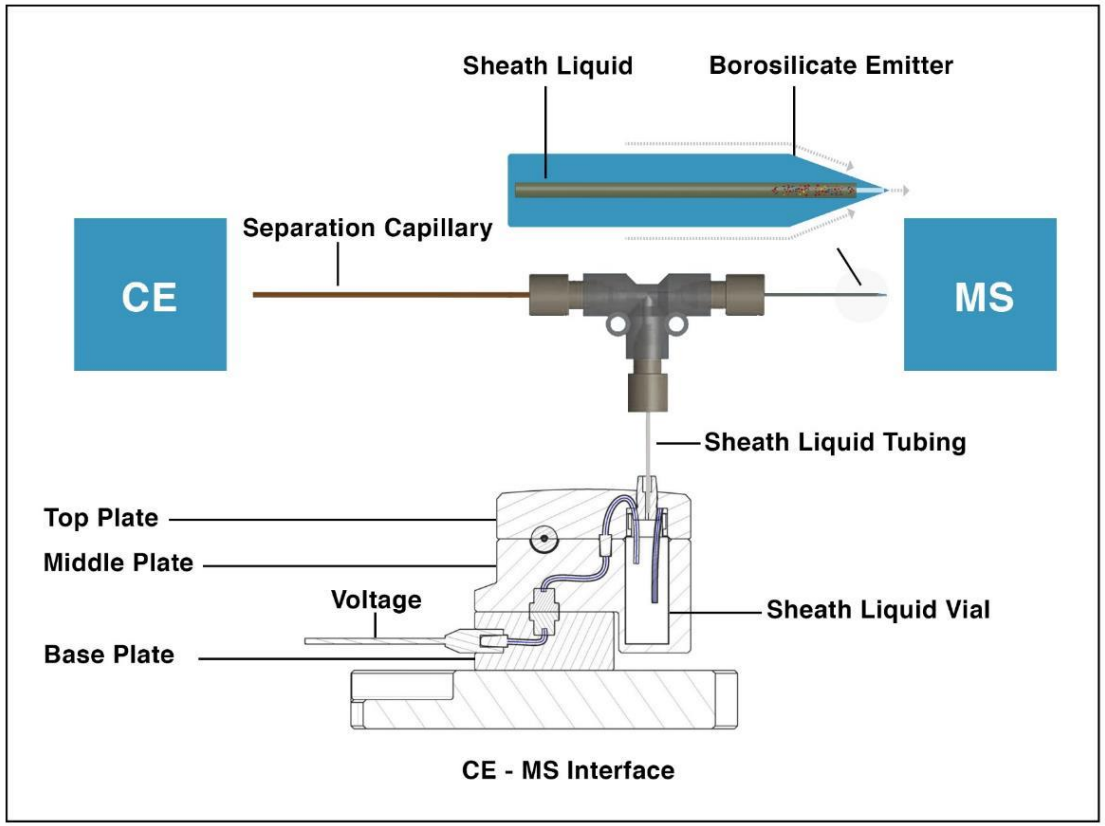
CMP Scientific: EMASS-II CE-MS technology

EMASS-II CE-MS: electro-kinetically pumped sheath-flow CE-MS technology.

EMASS-II CE-MS Ion Source

- EOF-driven sheath liquid flow
- Nanoflow sensitivity
- High electrospray efficiency





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Global Co-Marketing with Agilent Technologies

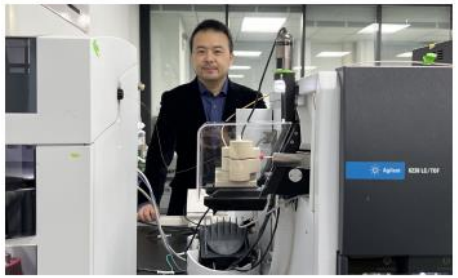
Agilent Case Study

Building an Efficient Bridge Between Capillary Electrophoresis and Mass Spectrometry

A CE/MS-based approach for characterization of biotherapeutics and identification of critical attributes

"The weakest point was in the middle," explained Dr. James Xia, a biochemist with a PhD in mass spectrometry-based proteomics. Having worked in the biopharmaceutical industry, Dr. Xia identified capillary electrophoresis/mass spectrometry (CE/MS) as a promising technique for protein characterization. However, he noted, "Experts in the field have been using CE and MS for more than a decade yet have faced challenges in terms of sensitivity and overall performance."

"Imaged capillary isoelectric focusing (CIEF) was commonly employed, which provides a consistent and reproducible separation. This method is well established and has been used extensively for the analysis and quantification of charge variants." Xia continued, "But, imaged CIEF is limited by its use of UV absorbance detection, which cannot identify the specific species present in each peak."



Xia had a strong desire to address the challenges of charge variant identification, recognizing that MS detection would be crucial to provide answers. The crux of the issue was transferring molecules between the CE and MS stages—specifically, the difficulty in mobilizing the molecules once they were focused inside the capillary, as this process could broaden peaks and decrease sensitivity. So, the question remained: How can the analytes be effectively transported from CE to MS, ionized efficiently, and introduced to the MS without loss of resolution or sensitivity?

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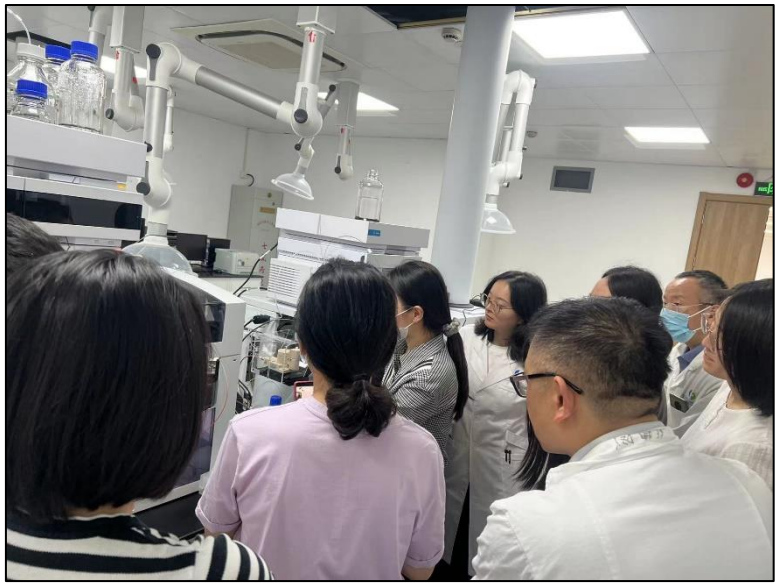
Agilent
Trusted Answers

EMASS-II CE-MS Ion Source

- EOF-driven sheath liquid flow
- Nanoflow sensitivity
- High electrospray efficiency



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Recent Publications

MABS
2023, VOL. 15, NO. 1, 2229102
https://doi.org/10.1080/19420862.2023.2229102

Taylor & Francis
Taylor & Francis Group

REPORT

OPEN ACCESS Check for updates

Interrogating heterogeneity of cysteine-engineered antibody-drug conjugates and antibody-oligonucleotide conjugates by capillary zone electrophoresis-mass spectrometry

Tian Xu[a*], Fan Zhang[b*], Daoyang Chen[b], Liangliang Sun[a], Daniela Tomazela[b], and Laurence Fayadat-Dilman[b]

[a]Department of Chemistry Michigan State University, East Lansing MI 48824 USA; [b]Discovery Biologics, Protein Sciences, Merck & Co., Inc, South San Francisco, CA 94080 USA

CZE-MS analysis of ADCs and AOCs

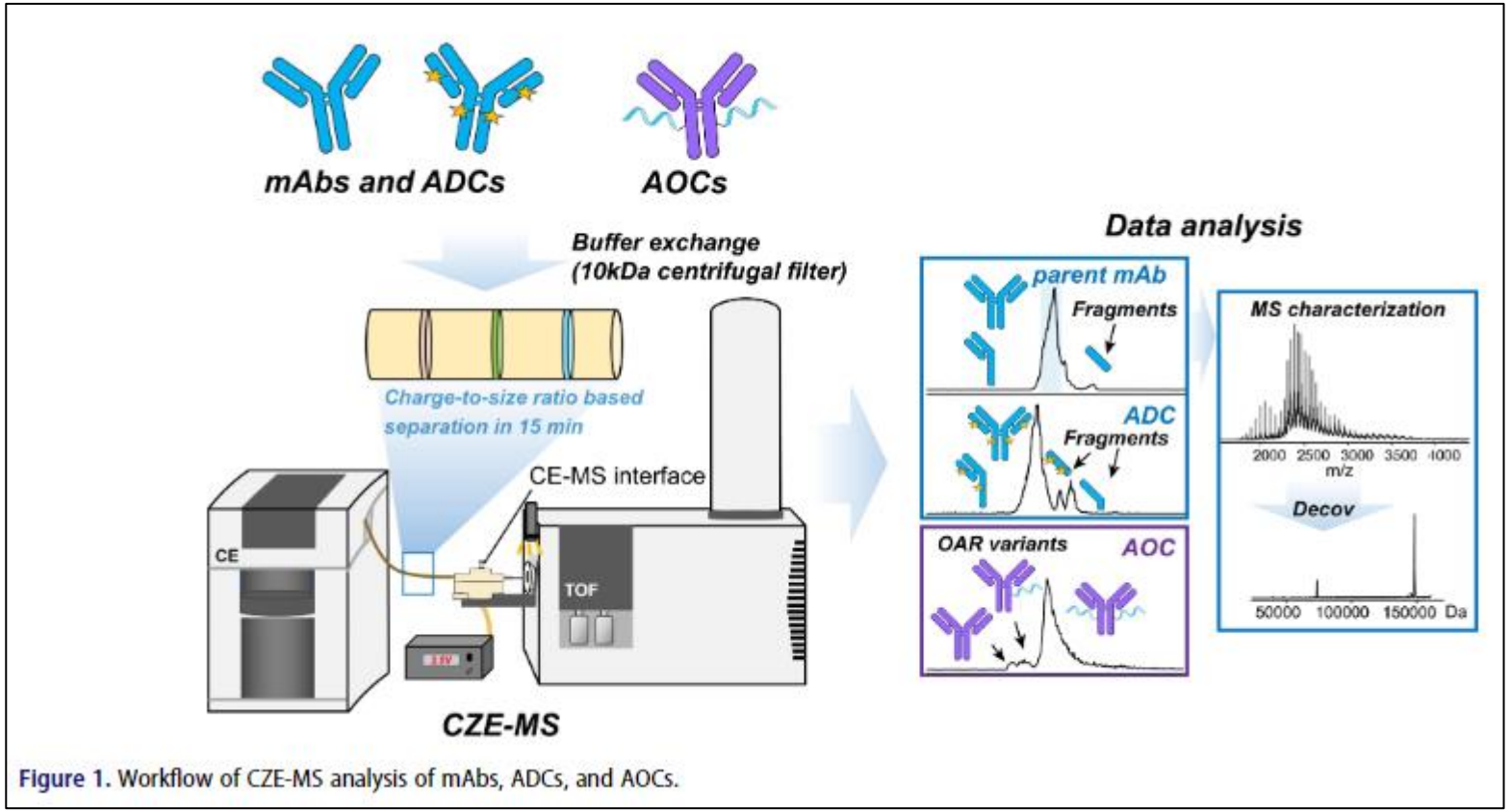

Figure 1. Workflow of CZE-MS analysis of mAbs, ADCs, and AOCs.

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Recent Publications

CE-SDS peak ID

ELSEVIER

Journal of Chromatography A
Volume 1684, 22 November 2022, 463560

Identification of a monoclonal antibody clipping variant by cross-validation using capillary electrophoresis – sodium dodecyl sulfate, capillary zone electrophoresis – mass spectrometry and capillary isoelectric focusing – mass spectrometry

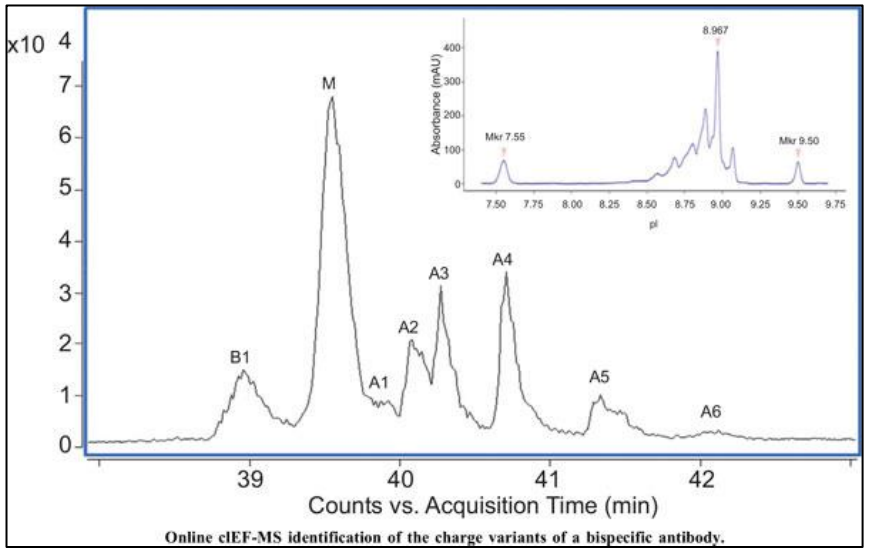
Meng Li [a 1], Xueyu Zhao [a b 1], Danfeng Shen [c], Gang Wu [a], Wenbo Wang [a], Chuanfei Yu [a], John Sausen [d], Hanmei Xu [b], Lan Wang [a]

[a] NHC Key Laboratory of Research on Quality and Standardization of Biotech Products, NMPA Key Laboratory for Quality Research and Evaluation of Biological Products, National Institutes for Food and Drug Control, Beijing, PR China
[b] Engineering Research Center of Synthetic Peptide Drug Discovery and Evaluation of Jiangsu Province, China Pharmaceutical University, Nanjing, PR China
[c] EverGauge Science and Technology, Shanghai, PR China
[d] Agilent Technologies, Santa Clara, CA, USA

iCIEF peak ID

Charge Variants Analysis of a Bispecific Antibody Using a Fully Automated One-step Capillary Isoelectric Focusing - Mass Spectrometry Method

Authors: Wu, Gang; Yu, Chuanfei; Wang, Wenbo; Du, Jialiang; Xu, Gangling; Fu, Zhihao; Wang, Lan
Source: Current Pharmaceutical Analysis, Volume 18, Number 9, 2022, pp. 860-870(11)
Publisher: Bentham Science Publishers
DOI: https://doi.org/10.2174/1573412918666220707145047



Online cIEF-MS identification of the charge variants of a bispecific antibody.

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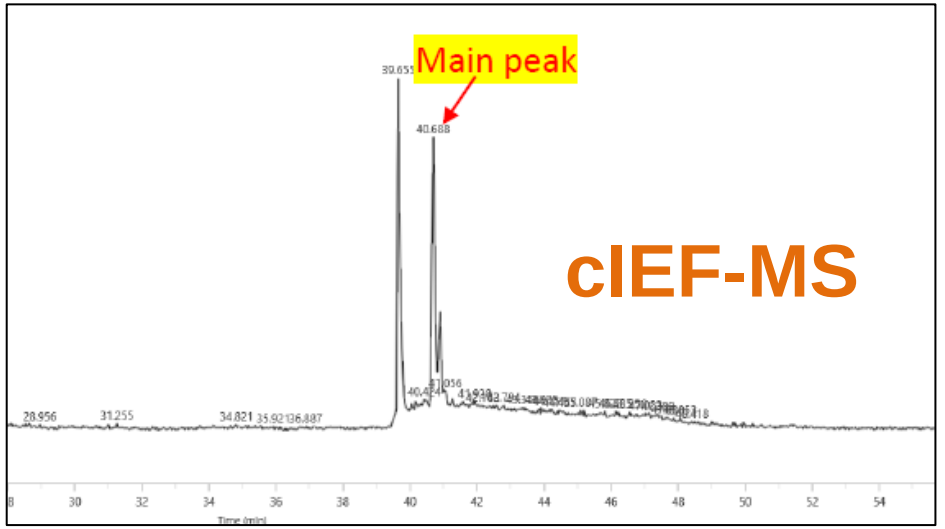
An integrated CE-TOF system for CZE-MS and cIEF-MS applications



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