



## CEM Launches New Technology for Rapid Fat/Oil Analysis

(Matthews, North Carolina) October 25, 2016- CEM Corporation, a leading supplier of process control solutions, is pleased to introduce the all new ORACLE Fat Analyzer based on a very recent breakthrough in NMR technology. ORACLE is the first ever rapid fat analyzer that requires absolutely no method development and can analyze fat in any unknown food sample with reference chemistry accuracy and exceptional repeatability.



"For the first time, a new disruptive technology exists that allows for the direct measurement of fat in any food product in 30 seconds," commented Michael J. Collins, President and CEO of CEM Corporation. "This has never been possible before and requires no prior knowledge of the sample composition. It's going to change the landscape in terms of food testing and will have an impact that will be felt across the whole industry on a global basis."

Pre-release trials of ORACLE at major global testing labs have provided confirmation of the abilities of the technology. Timothy Lumb, Chemistry Manager of ALS UK, commented "The CEM ORACLE Fat Analyzer has demonstrated the ability to eliminate daily calibrations used with previous technology for a broad range of samples while maintaining high sample

accuracy and precision. As one of the global leaders in food testing this is very beneficial for our testing needs."

The food industry has traditionally relied on reference wet chemical methods as the primary standard for fat analysis. These long, antiquated, and hazardous processes suffer from repeatability challenges and take several hours to complete. This has led to the use of rapid fat analyzers which are calibrated against reference wet chemistry. While faster, these systems often require extensive method development as results are affected by sample composition. Existing NMR techniques have partially reduced method development by the ability to directly analyze an entire sample and not be effected by surface properties. However, all current technologies still require some form of method development and correlation to reference chemistry.

ORACLE is unique in that it completely eliminates method development and the need for reference chemistry. This is based on a newly developed NMR technique that completely isolates the fat response signal in any sample type or matrix. "In five years, ORACLE could become the new reference method for the entire industry, and that's truly amazing," Collins stated. "I've had the dream for the last 20 years of an instrument with this capability. This is a revolutionary technology that CEM has brought to market and it makes me very proud and excited that we've been able to do this."

The instrument comes in two configurations, rapid and high-throughput. The rapid system is paired with the newly released SMART 6 Moisture/Solids Analyzer allowing for moisture and fat analysis in less than 5 minutes. The high-throughput option incorporates a robotic system allowing for the unattended processing of up to 100 samples.

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*CEM Corporation, a private company based in Matthews, North Carolina, is a leading provider of microwave laboratory instrumentation. The Company has subsidiaries in the United Kingdom, Germany, Italy, France, and Japan, as well as a global network of distributors. CEM designs and manufactures systems for life sciences, analytical laboratories and processing plants worldwide. The Company's products are used in many industries including pharmaceutical, biotech, chemical and food processing, as well as academic research.*

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## 新品发布：ORACLE 通用快速脂肪分析仪

美国北卡罗莱纳州马修斯，2016 年 10 月 25 日——全球领先的過程控制解决方案供应商 CEM 公司很高兴地宣布了一款全新产品——ORACLE 通用快速脂肪分析仪，该产品是基于 CEM 最近在 NMR（核磁共振）方面取得的突破技术。ORACLE 是全球首款完全无需方法建立，即可分析任何未知食品样品中的脂肪含量的快速脂肪分析仪，兼具可以媲美化学方法的准确性和无与伦比的重复性。

“这是第一次，这项新的颠覆性技术能在 30 秒内直接检测任意食品中脂肪含量。”CEM 公司总裁迈克尔·柯林斯评论道：“这在以前是绝不可能的，而且不需要预先知道样品的成分。它将改变食品检测的前景，也将对全球范围的整个行业产生影响。”

ORACLE 在全球主要测试实验室的预发布测试证实了这项技术能力。ALS UK（一家全球检测机构的英国分部）化学经理蒂莫西·卢姆评论说：“CEM 公司的 ORACLE 通用快速脂肪分析仪可以省去以前技术中大量样品所需的日常校准，还能保证了样品检测的准确性和精度。作为食品检测领域的全球领导者，它对我们的检测需求非常有益。”

食品行业脂肪分析传统上依赖传统的索氏湿法化学方法作为主要标准方法。而且不同的样品需要不同的酸碱水解前处理以及各种不同有机试剂，这些漫长、过时、危险的检测过程重复性很差，且需要好几个小时才可以完成。这些原因催生出了根据湿法化学方法进行校准的快速脂肪分析仪的使用。虽然检测速度更快了，由于检测结果受到样品成分的影响，这些系统通常需要建立大量的方法。现有的 NMR 技术能直接检测整个样品而不受样品表面性质影响，这使得这项技术能在一定程度上减少方法的建立。但是，所有目前的技术仍需要某种形式的方法建立和与传统的化学方法的结果相关联的大量数据标定的问题。

ORACLE 非常独特，它完全无需根据不同的样品建立方法，无需参考传统化学方法的结果。它是基于一项 CEM 新开发的 NMR 技术——它能够完全分离出任何类型样品或基质中的脂肪氢核的反应信号。“在五年内，ORACLE 可能成为整个行业的新参考方法，用测试脂肪氢核的直接本质，来统一所有的不同的方法，这是十分了不起的。”CEM 公司总裁迈克尔·柯林斯说：“过去 20 年里，我一直梦想着有台仪器拥有这个能力。CEM 能给市场带来这革命性的新技术，让我感到非常自豪和兴奋。”

仪器有两种配置：快速型和高通量型。快速型搭配新发布的 SMART 6 水分/固形物分析仪，能在 5 分钟内对样品中的水分和脂肪进行分析。高通量型包含一个机器人系统，能在无人值守时最多处理 100 个样品。



快速型检测水分 + 脂肪含量



高通量型检测脂肪含量