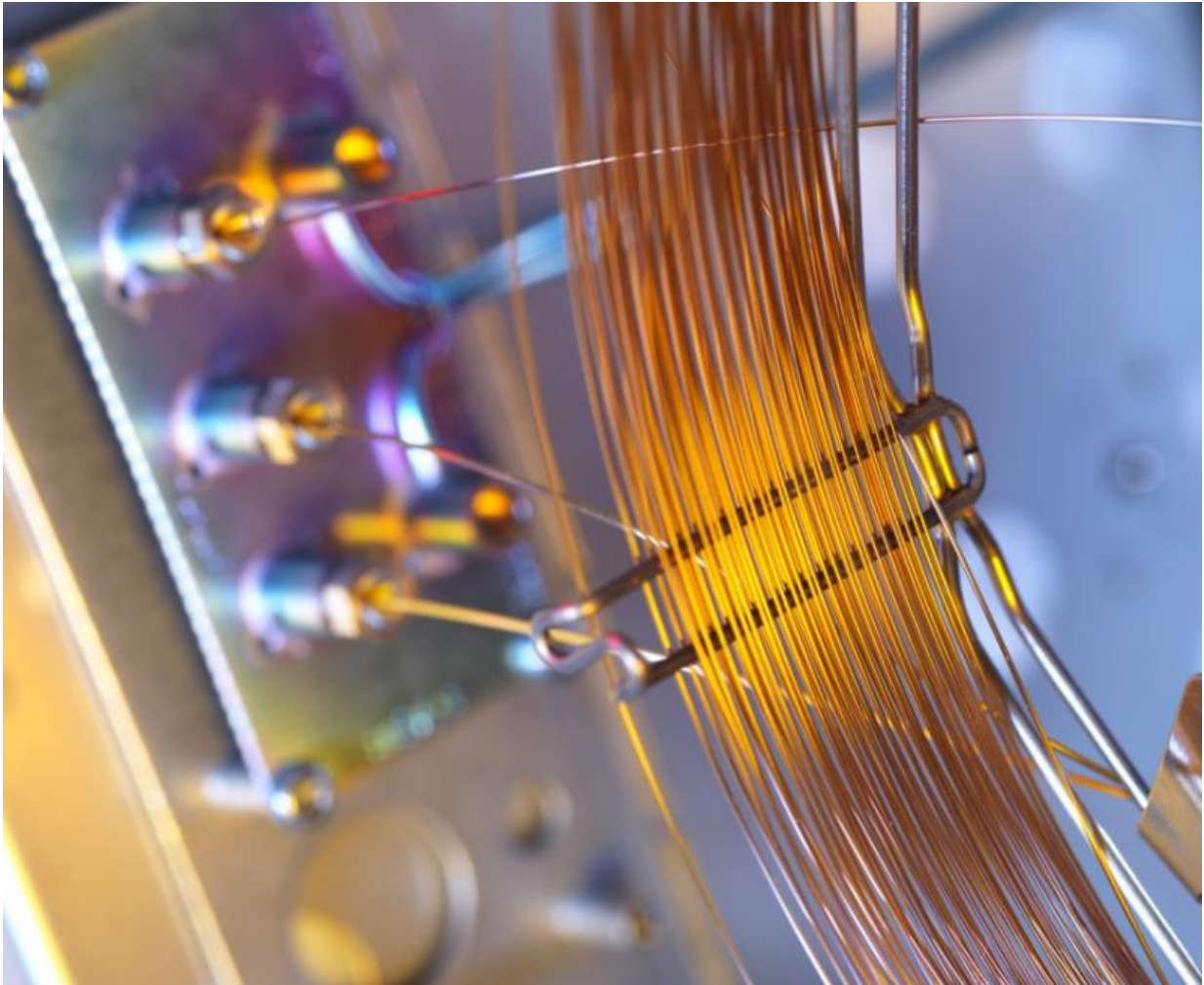


Supporting uptake of green gas

October 17 2016



A capillary column used in gas chromatography to separate chemicals. Credit: National Physical Laboratory

Lucy Culleton of the National Physical Laboratory (NPL) has won the first European Biogas Association (EBA) Poster Award for her work supporting the introduction of biogas into Europe's gas networks.

Declining [natural gas resources](#) and renewable energy targets are driving interest in biogas, produced from decomposing organic matter, such as municipal or agricultural waste. Lucy and her colleagues at NPL have been developing methods capable of detecting extremely-low levels of impurities in biogas, to support its use as an alternative, [renewable energy](#) source.

Biogas can be mixed with natural gas and introduced into existing pipelines, or even used to power vehicles, but impurities introduced by the initial waste material can lead to problems. Siloxanes - compounds of silicon and oxygen used in consumer goods such as cosmetics and food - are among the worst offenders, forming abrasive silicon dioxide deposits during combustion, which can damage gas processing equipment, reducing efficiency and eventually causing failure.

European standards are currently in development which will specify the maximum permitted level of total silicon in biogas intended for Europe's gas networks. As part of the European Metrology Research Programme, NPL is developing the measurement techniques needed to enforce this legislation, provide confidence in quality control for biogas and support its safe and effective introduction into Europe's gas networks.

Using a gas chromatograph, which separates the biogas components, together with a highly-sensitive detector, Lucy and her colleagues in NPL's Chemical Metrology Group are establishing a facility that will measure the total silicon content of a biogas sample with unprecedented accuracy - at low parts-per-billion level, addressing current measurement requirements. The facility is currently being validated using NPL's high-accuracy biogas reference standards, a process which should be

completed later this year.

Provided by National Physical Laboratory

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