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3D Printed Columns for High Performance Liquid Chromatography

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The oral presentation entitled *"3D Printed Columns For High Performance Liquid Chromatography"* performed by the Department of Analytical Chemistry of the Faculty Chemistry of the University of Valencia, has been of great interest for me. I think the introduction of this new technology in the field of analytical chemistry, especially in chromatography, could be revolutionary. Although the technology is still considered to be within their development phase, with constant improvements in resolution and taking into account that new printable materials are being reported continuously in the scientific literature, however, the technology has already had a significant impact in the area of instrumentation development and prototyping of new analytical platforms. One key advantage of 3D printing is the ability to fabricate solid objects with complex internal features. Different internal designs can be readily created, using available computer design softwares, and printed in various materials, including plastics, metals or ceramics. This provides the opportunity to create new column housing designs, of varying degrees of complexity, which were previously simply not possible. In this work, several compounds (sodium chloride, benzyl amine, benzoic acid at different pHs) were tested and good results were achieved. One important remark is that this new technology can allow to minimize costs of experiments. The use 3D printed have special scientific interest and it could be of high interest as research line.

High Precision Measurement of Dissolved Inorganic Carbon (DIC) by Isotope Dilution Mass Spectrometry for Climate Change Studies

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The most interesting presentation was the one entitled: "H*igh precision measurement of dissolved inorganic carbon (DIC) by isotope dilution mass spectrometry for climate change studies*" performed by the Department of Physical-Chemistry and Analytical Chemistry, University of Oviedo in collaboration with Scientific-Technical Services of the University of Oviedo. The overall development occurred in the last century has led man to have available a lot of manufactured products with a wide applicability that have significantly eased the life. Nevertheless, this massive development has brought an important inconvenient to the population: Pollution. Environmental problems are often caused by humans, also the solution is in us. The fact develop a method for determination of Dissolved Inorganic Carbon (DIC) is a very interesting. Pollution and its consequences is a dramatic issue for the future of life. Dissolved inorganic carbon is one of the most important parameters for calculating partial pressure of CO2 in seawater in order to study ocean acidification and Climate Change. According to my colleagues, DIC concentration increases around 1 µmol/kg per year, I agree with the quantitative assessment of such process would require analytical methodologies that provide overall precisions around 0.05% RSD. In this context a methodology for high precision measurement is necessary. A methodology based on LC-IRMS for determination of DIC is a way to determine it unequivocally and with high precision.

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