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Publisher *Taylor & Francis*

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Spectroscopy Letters

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713597299>

Greener the Spectroscopy

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Online publication date: 01 December 2009

To cite this Article Das, Arabinda K. and de la Guardia, Miguel(2009) 'Greener the Spectroscopy', *Spectroscopy Letters*, 42: 6, 275 – 276

To link to this Article: DOI: 10.1080/00387010903430181

URL: <http://dx.doi.org/10.1080/00387010903430181>

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Greener the Spectroscopy

In the frame of the Ecological paradigm, the effort to make environmentally friendly all human activities and especially those involving chemistry is mandatory. In the analytical field, nowadays, it is important to continue to search for the superior analytical properties of new methods of analysis with the best sensitivity, selectivity, and precision. Additionally, minimization of side effects of developed methodologies regarding the safe and comfort of operators and the environmental impact of methods must be considered.

The challenge is to improve our methodologies in all senses, from the academical ones to the most practical aspects, always considering the analytical method as an integrated approach from the definition of the objectives to the final data, models to solve the practical problems and wastes, and collateral effects of our chemistries.

The public opinion of our societies has a negative perception of chemistry and it is our own task to convince the policy makers and common people about the need of additional efforts on chemistry in front of Environmental problems. So, green chemistry, and not no-chemistry, is the solution.

In the aforementioned scenario the present issue of *Spectroscopy Letters* is an attempt to put green spectroscopy in the first line of the objectives of the spectroscopy community.

Making our analytical methodologies greener is something of interest for the future but also for the present. Do not forget that sustainability involves avoiding pollution and decontaminating waste, but also reducing the consumption of reagents and energy. So, it must be considered that the development of clean methods is cheaper than the cost of cleaning polluted environments and thus, we are convinced that the scenario provided by green analytical chemistry could be attractive in both, moral and economical aspects.

Spectroscopy is probably the field of analytical chemistry which comparably involves the most opportunities for green technologies. The vast electromagnetic spectrum offers opportunities for the determination of trace elements, trace organic compounds, and major components in all types of samples, and the versatility of the spectroscopic techniques can be used to obtain as much as possible information about sample composition with minimum sample treatments. Through the papers included in this special issue, readers can follow some of the main alternatives assayed in the scientific literature to replace toxic reagents and to reduce the use of reagents and solvents and to minimize waste.

Another point, which is not a minor one, is the need to insist from the research journals on the side effects of the analytical methodologies and

on the use of green terminology that can stimulate the efforts to improve the environmental aspects of our methodologies.

We would like to acknowledge the excellent receptivity of Professor Robert G. Michel to our proposal of a special issue of *Spectroscopy Letters* devoted to Green Spectroscopy and to the whole staff of the journal for

the excellent support made to prepare this issue which finally the readers have in their hands. We hope that you can enjoy the quality of papers presented and, after reading them, you can be encouraged to continue to greener your own research.

Arabinda K. Das and Miguel de la Guardia