



Citation:

of many reagents that have been widely used in our laboratories in the past. In order to increase the sensitivity and selectivity of sample preparation techniques, a lot of work is currently being done to find new sustainable feedstocks that may be utilised as reagents and solvents, such as agrosolvents. In summary, it can be said that GAC has introduced fresh concepts and goals for fundamental research, hence it is not related to environmental opposition to chemical use. Instead, GAC involves a thorough analysis of new alternatives, and as a result, the new mindset has demonstrated clever solutions to chemical issues and focused attention on problem-solving and fresh challenges rather than a fundamental ecologism that is unable to provide adequate solutions at the level of consumer needs. The so-called green analytical methods have gained prestige because they combine a pragmatic viewpoint with an ethical compromise with environmental sustainability and, in the end, provide the right solutions at the required levels of accuracy, sensitivity, selectivity, and precision without having any negative effects on users or the environment. On the other hand, the efforts made to switch from off-line batch calculations in the lab to point-of-care, in situ, or remote sensing of target analytes provide significant reductions in the consumption of reagents, waste generation, and energy demands. All of this reduces the method costs, thus offering less expensive options that are greatly appreciated by businesses and applications laboratories. The common use of vanguard methodologies in green analytical methods rather than expensive conventional rearguard analytical systems and the extended use of screening methods suitable to provide an appropriate level of information in a short time are close to this point of view, which again contributes to lowering methodology costs. Therefore, as Professor Farid Chemat said, "green analytical chemistry could also be called poor analytical (Figure1) chemistry." In conclusion, it is not at all surprising that GAC was created as new methodologies became widely used in the 1970s because they helped to popularize method automation by utilizing flow injection analysis (FIA) and sequential injection analysis advancements to lessen sample and reagent consumption, as well as operator manipulation and waste generation. Fundamentally, automation is a very helpful technique to combine all the stages needed in analytical methods into a single manifold and to reduce human and environmental risks. Furthermore, the addition of a waste treatment phase following analyte detection demonstrated that chemical issues could be resolved with a little extra chemistry<sup>43</sup>, opening up new avenues for basic and applied research. An additional factor supporting the importance of GAC methods is the drive to transition from sophisticated methods based on the use of

expensive instrumentation to the modelling of signals obtained with relatively affordable and easily accessible instruments. This drive is part of the effort to bring the benefits of analytical chemistry to isolated and less developed societies. It is possible to create quick and inexpensive

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3. Wang Y, Han Y, Hu W, Fu D, Wang G (2020) Analytical strategies for chemical characterization of bio oil. *Journal of separation science* 43: 360-371.
  4. Ishii K, Zhou M, Uchiyama S (2018) Native mass spectrometry for understanding dynamic protein complex. *Biochim Biophys Acta Gen Subj* 1862:275-286.
  5. Takeo E, Sasano R, Shimma S, Bamba T, Fukusaki E, et al. (2017) Solid-phase analytical derivatization for gas-chromatography–mass-spectrometry-based metabolomics. *Journal of bioscience and bioengineering* 124:700-706.
  6. Micalizzi G, Vento F, Alibrando F, Donnarumma D, Dugo P, et al. (2021)