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Editorial

A Themed Issue in Honor of Prof. Dr. Vicente Rives

Miguel Angel Vicente *, Raquel Trujillano and Francisco M. Labajos

Recognized Research Group "QUESCAT", Departamento de Química Inorgánica, Universidad de Salamanca, E-37008 Salamanca, Spain; rakel@usal.es (R.T.); labajos@usal.es (F.M.L.)

* Correspondence: mavicente@usal.es

Professor Vicente Rives developed a very long and fruitful career as a teacher of Inorganic Chemistry and Materials Chemistry and has been a dedicated researcher in these and related fields. After obtaining his Ph.D. degree in Chemistry in 1978 at the University of Seville (Spain), Prof. Rives worked at the University of Salamanca for forty years. During this time, he worked on dozens of research projects; published more than 450 research papers; communicated to hundreds of scientific meetings; managed research as Editor of various Journals; received various research awards, etc. Most importantly, he created and headed an important group of researchers on Solid State Chemistry, Materials Chemistry and Heterogeneous Catalysis, establishing vital research collaborations with several groups from different countries.

Prof. Rives left the University of Salamanca in 2021 on his retirement. For this reason, as his disciples, colleagues and friends, we proposed to *ChemEngineering* the edition of a Special Issue devoted to him. The theme of this issue was opened to the research fields in which Prof. Rives worked along his career, namely, layered double hydroxides (LDHs), metal oxides, clay minerals, catalysis and photocatalysis, thermal analysis, and cultural heritage conservation, among others, mainly inviting (but not exclusively) to contribute researchers who had collaborated with Prof. Rives at any moment of his career.

This Special Issue has received eighteen contributions, six review papers [1–6], and twelve research papers [7–18]. Most of the papers originated from groups who have previously worked with Prof. Rives, but five of the contributions came from authors who had not previously worked with him [6,7,13,17,18]. The materials most studied by Prof. Rives throughout his career were LDHs. Therefore, it was not surprising that these materials were the basis of eight of the papers published in this Special Issue [2–4,10,11,15–17]. Other materials included Ni-based catalysts [1], g-C_3N_4 [5], mesoporous silica [6], MOFs [7], carbons [8,9], $AlPO_4$ [12], acid-modified clays [13], and porous aluminosilicates [17]. Finally, one of the papers was devoted to the study of cultural heritage conservation [14].

The review papers reported very interesting revisions on the use of different materials for certain applications. Thus, Soria et al. reported on the use of Ni-based catalysts on the steam reforming of oxygenated compounds derived from biomass for H_2 production [1]. Tichit and Alvarez reviewed the use of LDH–carbon nanocomposites as heterogeneous catalysts [2], and Fernández-Rodríguez et al. reviewed the use of LDHs in construction materials providing a sink for CO_2 [3]. Trujillano reviewed the very wide contribution of Prof. Rives to the study of LDHs, underlying his substantive results derived after more than 30 years of continuous research on these materials [4]. García-López et al. reviewed the use of g-C_3N_4-based materials to produce H_2 by the photoreforming of biomass [5], and Fatimah et al. reviewed [6] the production of biodiesel from catalysts based on mesoporous silica.

The research papers also reported on very interesting applications of the different materials studied. Rodríguez-Castellón et al. reported on the esterification of levulinic acid to methyl levulinate, catalyzed by Zr-MOFs [7]; Monzón et al. studied the production of H_2 and CNT from methane using bimetallic catalysts based on carbon [8], whilst Carriazo et al. used carbon composites for the preparation of advanced supercapacitors [9]. Labajos

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et al. explored new routes for the preparation of LDHs using various amines in the synthesis process [10], while Nebot-Díaz et al. used LDH as precursors of nanoparticle black pigments for the ceramic industry [11]. Ciuffi et al. used Zn-$AlPO_4$ as photocatalysts for the degradation of fipronil [12], and Cesteros et al. used acid-modified clays as catalysts for the preparation of 5-hydroxymethylfurfural from glucose [13]. Vicente et al. prepared Fe-doped hydrocalumites (a type of LDH) from aluminum slags and used them for the photodegradation of ibuprofen [15]. Rojas et al. prepared LDH–alginate composites as carriers of either ibuprofen or naproxen [16], while Pavlovic et al. proposed new corrosion inhibitors for reinforced concrete based on LDHs modified with sebacate anions [17]. In an area more related to biological applications, Golubeva et al. studied the adsorption and hemolytic behavior of porous aluminosilicates in a simulated body fluid [18]. On the other hand, related to cultural heritage conservation, García-Talegón et al. reported on the ageing of Spanish building stones under different physical agents, mainly studied by the evolution of their color [14].

Thus, this Special Issue contains a very interesting series of papers on the subjects out of which Prof. Rives developed his career, and will be of great interest for the researchers working in these fields.

Finally, we want to express our gratitude to *ChemEngineering* and MDPI for this Special Issue, and particularly to Ms. Camile Wang for her help and patience in all the processing steps required for this edition. We also thank the different researchers who have kindly reviewed these manuscripts.

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