

and other research groups [108–110] study microfiltration, ultrafiltration, and biofiltration processes membranes.

Even if Bibliometrix did not provide results on the publications with the highest contribution to the blue cluster, by limiting the search results of Scopus it was possible to obtain the publications with the greatest contribution to the blue cluster. The publications with the highest contribution to the blue cluster, according to Scopus, are as follows: Fabris et al. [67], Kumar et al. [111], Hijnen et al. [112], Mugesh et al. [113], and Manikandan et al. [114]. Some research groups analyzed the use of biopolymers for drinking water [67, 111, 112], such as Fabris et al. [67], who evaluated the use of chitosan as a natural coagulant for drinking water treatment, Mugesh et al. [113] studied the defluoridation of water by using a bacterial cellulosic material, and Manikandan et al. [114] the emerging nanostructured innovative materials as adsorbents in wastewater treatment.

Concerning the most cited publications, all of them are part of the top 10 GCS previously shown in Table 1.2 [15–17, 20, 23]. It can be observed that the most cited publications are closer to the central point since these publications deal with the hotspot themes.

From these results, it can be observed that chitosan, an important biopolymer obtained from marine sources, is a significant material used for water purification according to the literature [42, 43, 49, 52, 63, 64, 66, 68–75, 78, 115–119], as previously observed in the word cloud results (Figure 1.4).

1.4 Conclusions

A bibliometric analysis based on the results of a Scopus search by using the keywords biopolymer* AND (water purification* OR water treatment*) was performed and the most recent 2000 publications (articles and reviews in English) from 2002 to 2021 were selected. The .bib document generated was analyzed by Bibliometrix R-package. The analysis provided a general overview of the literature about biopolymers for water purification.

The research field is interdisciplinary, with an annual growth rate in publications of 19.26%. Water Research is the most locally cited journal, with the highest number of publications as well. Concerning the most prominent authors, Zhang W. is the one with the highest *h*-index and the highest number of publications, and Wang J. is the author with the highest local citation. China is the frontrunner country, and some of the most relevant affiliations are Chinese. Azizi Samir et al. [14] is the top GCS publication, whereas Sheng et al. [15] is the top LCS publication.

Regarding the analysis of the authors' keywords, the ones more frequently used are chitosan, adsorption, and membrane fouling. Keywords with high relevance are membrane fouling, ultrafiltration, and coagulation. Some very specialized themes in the field are water treatment, flocculation, and activated sludge, whereas some popular themes are anaerobic digestion, water treatment, rheology, characterization, and surface modification. The analysis is important since it may provide a panorama of the research field of the use of biopolymers for water purification.

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