



# ANNUAL REPORT 2020

**ing€nium**  
Research Group  
[www.ingeniumgroup.eu](http://www.ingeniumgroup.eu)

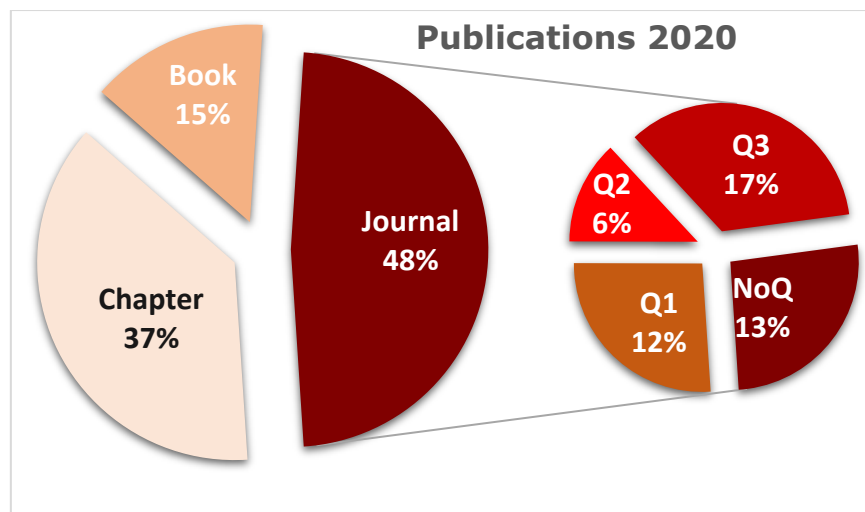


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## INGENIUM GROUP - PUBLICATION REPORT: 2020

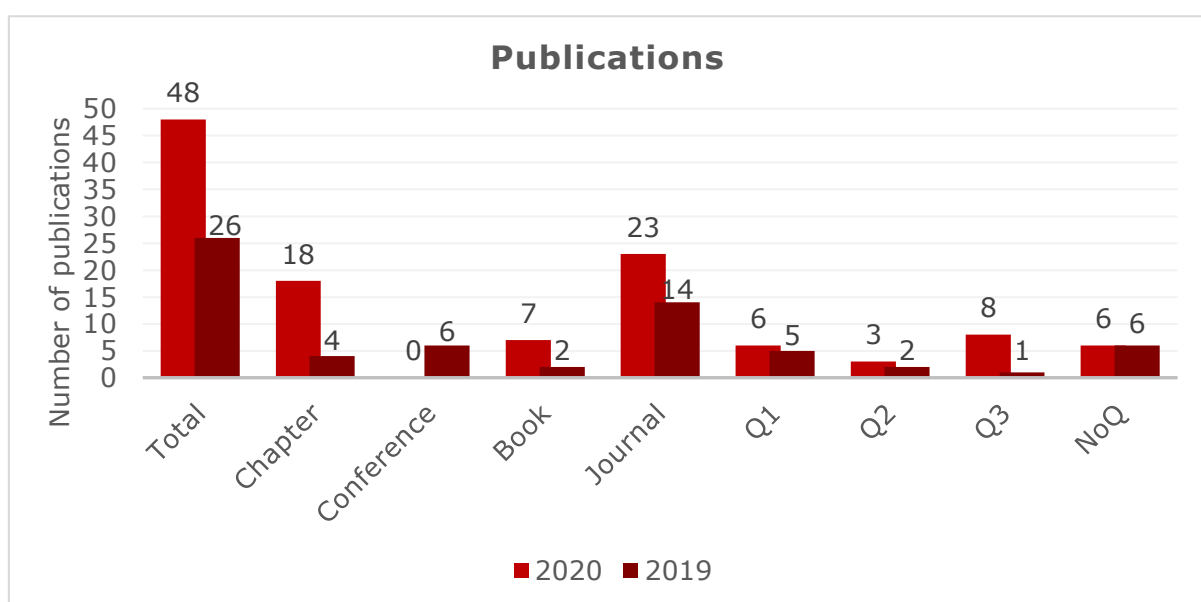
### PUBLICATIONS IN 2020

The Research is one of the main issues in Ingenium Group. The publications show the productivity, and they are employed to protect the intellectual property of the research work done. This report shows and analyses the publications in 2020 and over the last years. Ingenium has published **48 manuscripts in 2020**, see Figure 1.



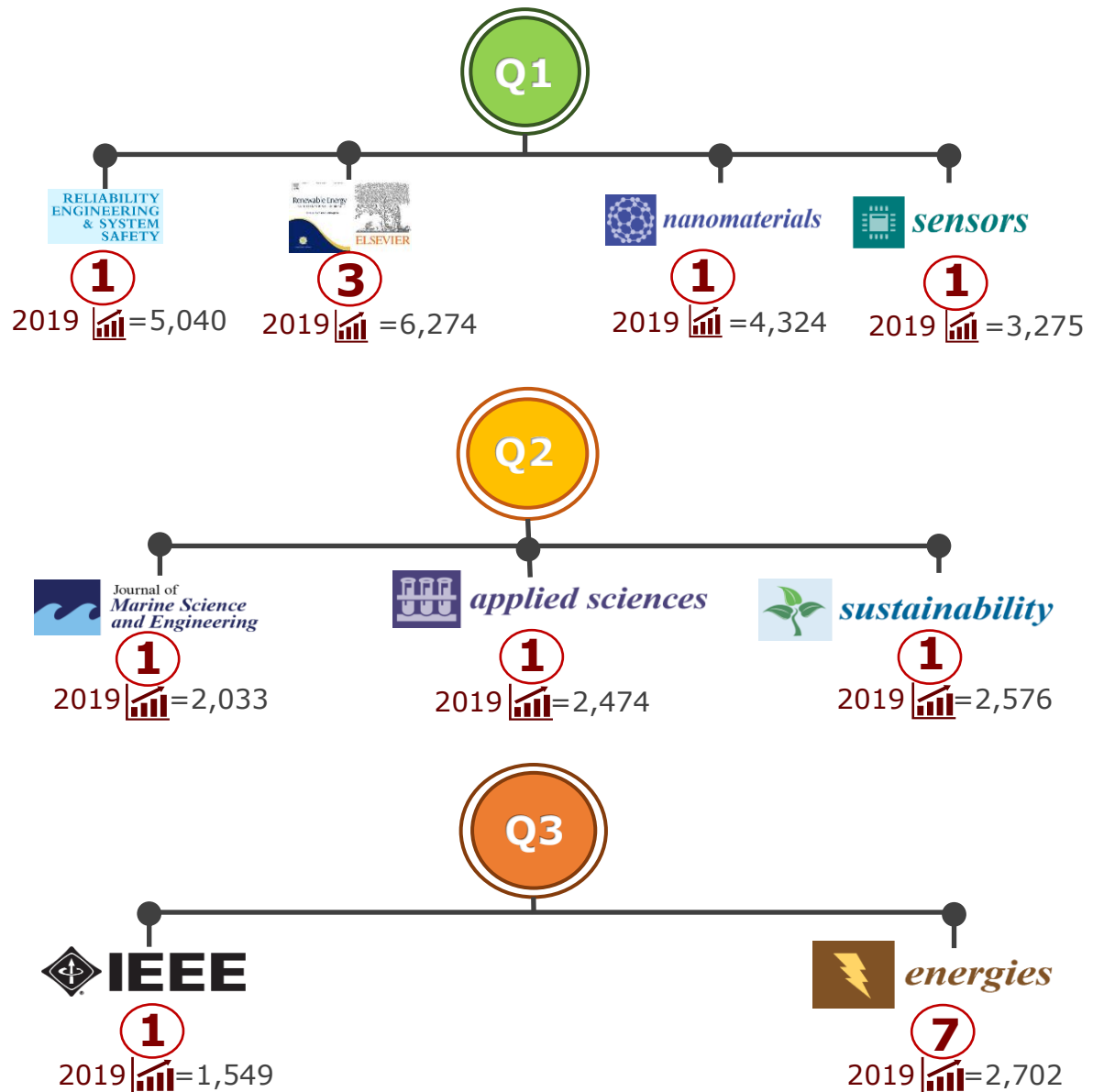
**Figure 1.** Total publications per category in 2020.

The **23 research papers published in journals in 2020**, present an increment according to the 14 papers of 2019 (see Figure 2).



**Figure 2.** Total publications per category in 2020 and 2019.

 **19 papers** published in Journals are catalogued into the **Journal Citation Report (JCR)<sup>1</sup>**. It is a remarkable increment this year, since in 2019 were 8. In 2020, 6 manuscripts were published in Q1, 3 in Q2 and 8 in Q3, Figure 3, being the maximum number of research papers published ever (see Figures 6&7).




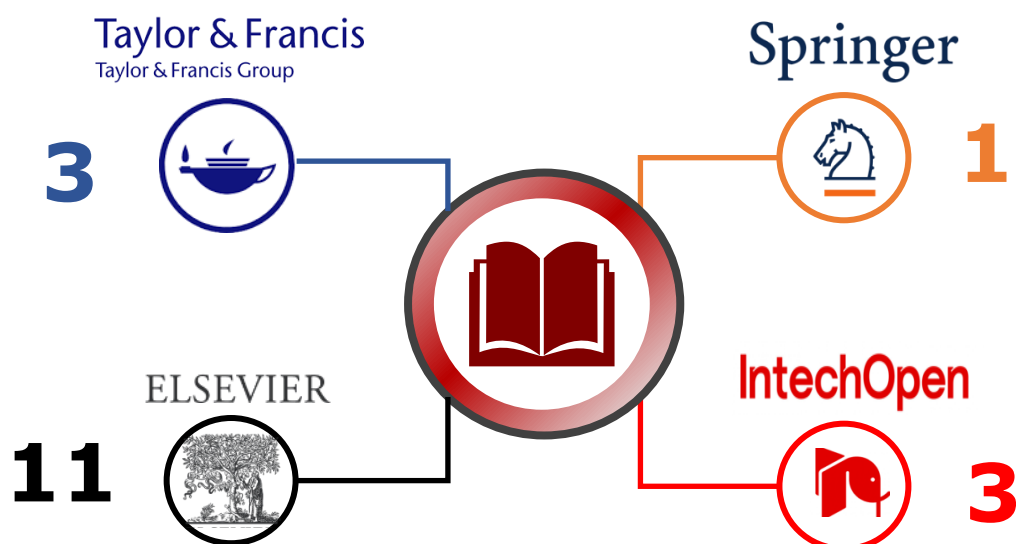
**Figure 3.** Publications according on the Qi classification.

<sup>1</sup>JRC employs InCites, a customized citation-based research analytics tool on the Web that enables you to evaluate institutional productivity and benchmark your output against peers worldwide. Based on Impact Factor (IF) data, the JCR published by Thomson Reuters provides yearly rankings of science and social science journals, in the subject categories relevant for the journal (in fact, there may be more than one). Quartile rankings are therefore derived for each journal in each of its subject categories according to which quartile of the IF distribution the journal occupies for that subject category. Q1 denotes the top 25% of the IF distribution, Q2 for middle-high position (between top 50% and top 25%), Q3 middle-low position (top 75% to top 50%), and Q4 the lowest position (bottom 25% of the IF distribution).

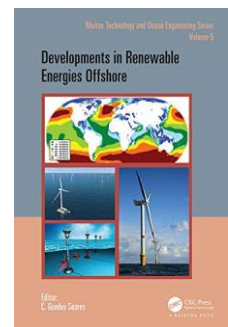
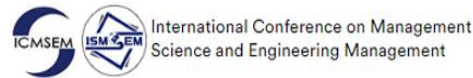
**6 manuscripts were published in other journals**, 1 in Information, 3 in Advances in Intelligent Systems and Computing, 1 in Ingeniería del Mantenimiento and 1 in AEND. It can be concluded that quality of the journals where the papers have been accepted has increased according to previous years, and also the number of research papers have raised, specially Q1, where the maximum was in 2019 with 5.

The number of research papers published in journals is estimated to be increased in 2021. It is important to have in mind that the Qi has been estimated considering the impact factor of the journals in 2019, but the manuscripts have been published in 2020.

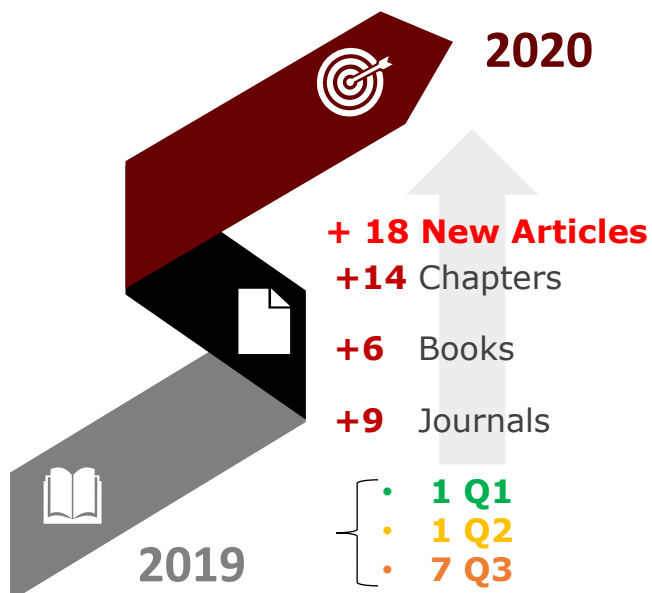
 **7 international books** have been published in 2020, in the main editorials in the worldwide such as **Elsevier, Springer, Intech and MDPI**. This number will be maintained in 2021, also considering editorials as Springer, Intech and MPDI. **18 International chapter books** have also been published (Figure 4). The maximum production over the time was also 15 chapters books in 2015.



**Figure 4.** Chapter Books publishes in 2020.



Ingenium has presented the main advances in the most relevant **International conferences**, e.g., "14th International Conference on Industrial Engineering and Industrial Management", "Developments in Renewable Energies Offshore", "XXIV Congreso de Ingeniería de Organización", ... publishing 4 manuscripts that has been considered in journal papers and 3 in chapter books. The research and development activities have been done accomplished through more-effective products, processes or business models that are readily available to markets, governments and society. The innovation activities of Ingenium have produced **1 patent** that are being evaluated by the Spanish Patent and Trademark Office.



The evolution of Ingenium Research Group in the year 2020 has provided 18 new articles, including 14 chapters, 6 books and 9 journals.

The increment in the number of articles in every Qi, mainly in Q3, is fundamental to ensure the divulgation of the research and obtain new synergies for future projects.

## PUBLICATIONS OVER THE TIME

Ingenium has published a total of **329 manuscripts**, see Figure 5.

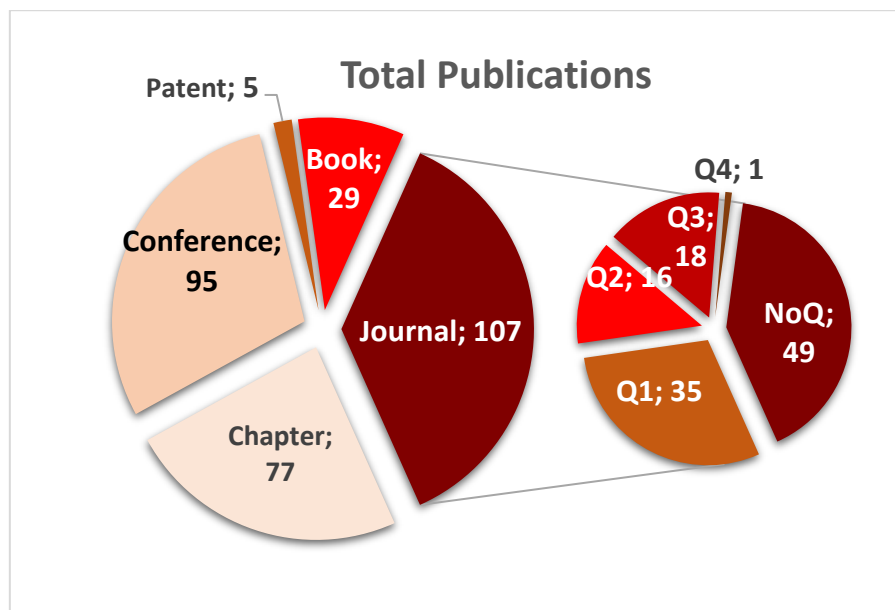
Ingenium has showed the main scientific advances in the most important conferences, e.g., **IEEE, IFORS, ICMSEM, CM, RENEW, AREMA, APMOD, E2KM, CIO, ECMS, ICAM, ICISM, RCM, SAFEPROCESS, WCCM, ICREPQ, ...**, presenting **95 conference papers**.



The research group has been published **29 books** in the most important editorials, **Elsevier, Springer, Pearson, McGrawHill, IGI, Intech, MDPI, Nova Science, AlfaOmega, Marcombo, ProQuest, Academia Española, UCLM, etc.** Ingenium has also published **77 international chapter books** in these editorials.

The innovation tasks and activities developed in Ingenium together with the industry have produced **5 patents, 1 International and 4 Nationals**, and **1 is under revision**.

Figure 6 shows the publication productions over the time. The trend production has been generally rising from 2002 to date. The peaks are produced by the delay of the editorials to publish the research works, e.g., research papers written in 2020 will be published in 2021. The maximum number of total publications has been done in 2020, and together with the maximum number of chapter books and journal papers, including manuscripts published in JCR journals.

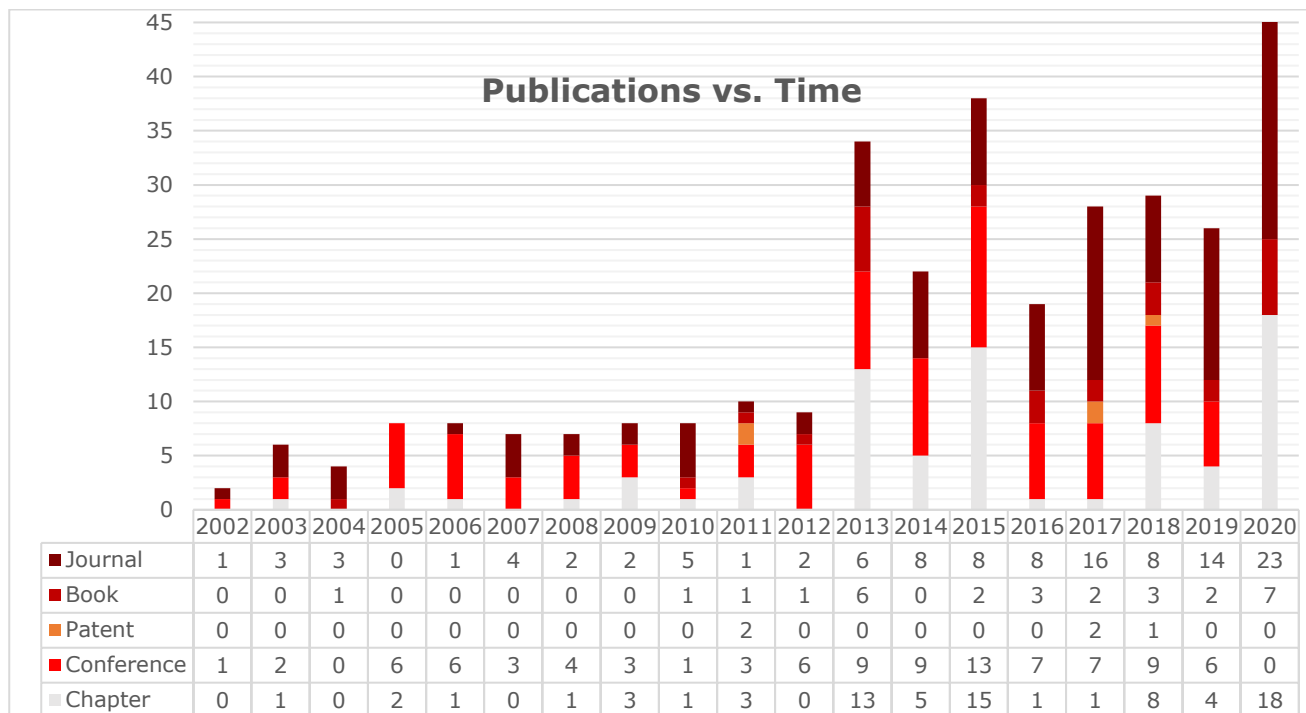


**Figure 5.** Publications (total)



The main interest has been focused on journal research papers, where **120 journal papers** have been published, being **70 in JCR journals (Q1 - 35; Q2 - 16; Q3 - 18; Q4: 1)**. Figure 7 shows the journal papers over the time, where the research papers are being published in the most important journals, e.g.:

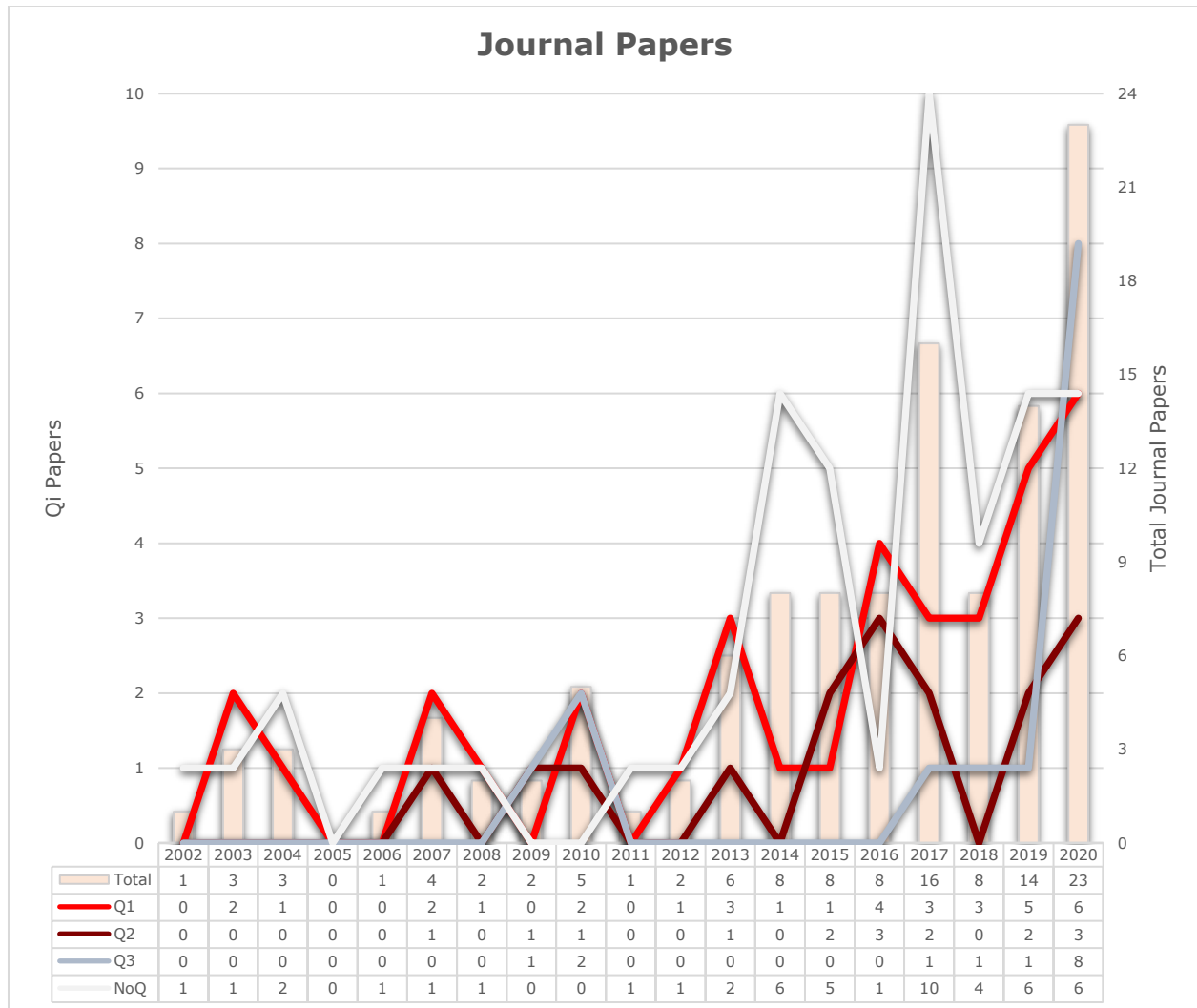
- Renewable & Sustainable Energy Reviews
- Reliability Engineering & System Safety
- Journal of Cleaner Production
- Renewable Energy
- Applied Energy
- International Journal of Production Research
- Computers & Industrial Engineering
- Mechanical Systems and Signal Processing
- Annals of Operations Research
- European Journal of Operational Research
- Wear
- Smart Structures and Systems
- Structural Health Monitoring
- Quality Engineering
- Engineering Failure Analysis
- Global NEST Journal
- Energies
- Acta Acustica United with Acustica
- Nanomaterials
- Journal of Marine Science and Engineering
- Applied Sciences and Sustainability
- IEEE Instrumentation and Measurement Magazine
- Maintenance and Reliability
- International Journal of Systems Science
- Logistics and Transportation Review
- Quality and Reliability Engineering International
- Measurement
- Journal of Rail and Rapid Transit
- International Journal of Advanced Manufacturing Technology
- Sensors



**Figure 6.** Publications over the time



It has been also published **49 journal papers that are not considered in JCR**, most of them from International Conferences (see Figure 7). These manuscripts are mainly due to the research papers published in International Conferences.

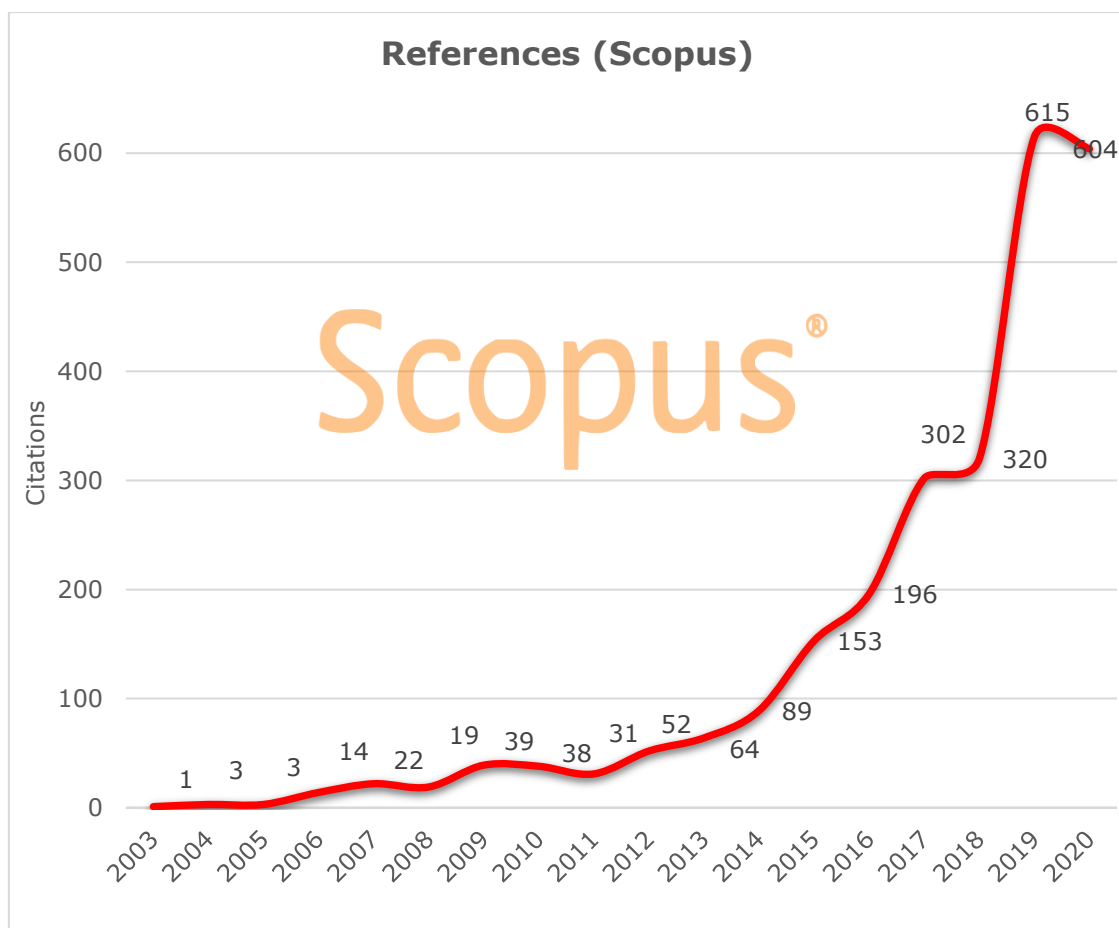


**Figure 7.** Journal papers over the time and type.



## CITATIONS

**Citations** generated according to Scopus, Figure 8, **have been increasing from 2002 to date.** The citations in 2020 are subjected to some updates from Scopus, being estimated, considering the citations updates from previous years, around 30, i.e., more than 630 in 2020. To increase the number of citations, i.e., the impact factor of the research work, will be the main issue to cover in the strategy of Ingenium in 2021.



**Figure 8.** References over the time (Scopus).

## AWARDS





Ingenium Research Group has been awarded by different prestigious international journals, conferences, and institutions. Since 2009, several prizes have been obtained, e.g.:


 **(2020) Top 2020 Highly Cited** Paper in Applied Energy (Q1, Impact Factor 8.848)


 **(2020) Runner-up prize for the excellent paper** "Smart Farming: Intelligent Management Approach for Crop Inspection and Evaluation Employing Unmanned Aerial Vehicles" by the International Society of Management Science and Engineering Management (ICMSEM)

 **(2018)** Advancement Prize for Management Science and Engineering Management Nominated Prize (2018) by the ICMSEM.


 **(2017)** Winner of International Phase of the Initiative 'Entrepreneurship 5+5'

 **(2015)** Runner-up Prize for Management Science and Engineering Management for the excellent paper by the ICMSEM.

 **(2015)** Best paper Award in the international journal of Renewable Energy (Q1, Impact Factor 3.5).

 **(2013)** Advancement Prize for the excellent paper by the ICMSEM.

 **(2012)** Silver Prize for the excellent paper by the ICMSEM.

 **(2009)** Advancement Prize for MSEM for the excellent paper.





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