The 12th year of publishing the *International Journal of Corrosion and Scale Inhibition*. Results and challenges

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Dear Colleagues,

We have been publishing the *International Journal of Corrosion and Scale Inhibition* for almost 12 years now. That is quite a long period, and now it's the right time to summarize some of the results. Let's first outline our achievements.

First, let's speak of the journal's bibliometric indicators. As of 2022, the journal was indexed by Web of Science Core Collection (ESCI, Journal Impact Factor 2.5, Journal Citation Indicator 0.39 (Q3)) and Scopus (CiteScore 4.700 (Q1), SNIP 0.860, SJR 0.428 (Q2)).

The journal does have a lot of readers. The readership now exceeds 1100 people per month. This is a good result for a specialized scientific journal. At the same time, the circle of readers and authors continues to grow.

The volume of the journal increases from year to year. In fact, in 2023 we have published more than 125 articles dealing with various theoretical and practical aspects of the inhibitory protection of metals. Their total volume is approaching 2500 pages.

Publication in IJCSI remains the most affordable among open-access corrosion journals.

We believe that these are good results.

In should be noted that the existence of the journal would have been impossible without the active participation of the members of the Editorial Board and the Board of Reviewers comprising many leading scientists in the field of corrosion research from different countries. We hope for our further fruitful cooperation.

However, there are also some problems. We have to reject 15-20% of the manuscripts. We pointed out one of the reasons previously [1]. However, since then, new typical errors have appeared, which the Editorial Board refuses to put up with. They are considered in more detail below.

Reason 1. The main reason for rejecting manuscripts currently lies in the low efficiency of inhibitors. Sometimes we receive articles where the properties and mechanisms of action of substances with poor protective ability are studied in detail by modern methods and with

considerable efforts. Such works are unlikely to be of interest to the scientific community. We usually estimate the efficiency of inhibitors using the scale published previously (Table 1) [2]. Please note that we do not publish the results of studies of inhibitors with moderate or poor efficiency.

Table 1. Classification of inhibitors based on efficiency.

Efficiency	**γ**	**Protection effect, %**
Excellent	> 1000	> 99.9
Very good	200–1000	99.5–99.9
Good	40–200	97.5–99.5
Satisfactory	8–40	87.5–97.50
Moderate	1.6–8	37.5–87.5
Poor	<1.6	<37.5

Reason 2. The submitted manuscripts sometimes contain incorrect or erroneous interpretation of the data of voltammetric measurements obtained on metal electrodes in corrosive aqueous media. This mainly concerns the values of Tafel slopes obtained from cathodic and anodic polarization curves (b_c and b_a). The cathodic and anodic reaction mechanisms of a metal are determined by its nature and by the composition of the corrosive medium. Ideally, the Tafel slope of a metal's polarization curve should have a certain value determined by the mechanism of the occurring electrode reaction [3]. Unfortunately, the values of b_c and b_a given in some manuscripts differ significantly from those allowed by the electrochemical kinetics and explained in terms of generally accepted concepts. However, the authors of such studies fail to provide any theoretical justification of these results.

It often happens that the results of electrochemical measurements contain contradictions, *i.e.*, an inhibitor hinders the electrode reaction of a metal but decreases the Tafel slope of the polarization curve compared to the background medium. If a corrosion inhibitor added to a corrosive medium hinders the electrode reaction, then the slope of the polarization curve should either increase or remain equal to the corresponding value in the background medium. The results differing from this principle require theoretical justifications.

The above contradictions most often result from the incorrect calculation of b_c and b_a values obtained from voltammetric measurement data and a scatter of experimental data due to an insufficient number of parallel experiments. Recall that the optimal region for determining a Tafel slope of a polarization curve is within 0.2–0.3 V from the metal's current-free potential.

Reason 3. The number of significant digits of some data reported in the articles. Usually this is not a reason for a refusal to publish an article, but it leads to long correspondence with the authors. Sometimes they provide data with an accuracy of 5–9 significant digits. The

authors reply to our objections that a computer-assisted measuring device produces results with such accuracy. Note that a computer can produce a lot of decimal digits that have no physical meaning after a few first ones. However, it is not the calculated digits, but the reproducibility of the results in parallel experiments that is in question. It is usually not higher than a few percent for corrosion systems. In simple words, 2, maximum 3 significant numbers should only be given. Please take this into account when you prepare your data for publication.

Reason 4. The list of references. Self-citation should not exceed 15–20%. These norms accepted in scientific literature are often not met by authors. Sometimes, in response to our comments, authors do not reduce the number of references to their own works, but instead significantly increase the total number of literature sources to fulfil our requirements formally. We believe that the reference list in a usual (non-review) article should not exceed 100, preferably less. Please do not refer to publications that are not directly related to the subject of your article.

Of course, these are not absolute limitations. Exceptions to these rules may occur if they are justified. Nevertheless, we ask you to take them into account when you prepare your manuscripts for publication.

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