Dear Leto,

I’d like to provide the following information on the concerns as rebuttals for the most part:

Regarding the first concern, I’d like to emphasize that I had no intention and did not try to duplicate other’s work, and if there is any issues that might have come from the group members (As we were graduate students trying to do teamwork research with all the existing challenges), I’d be happy to look into it and inquire for them and address the issue. Because when working with several people in a teamwork, especially in the phase of data collection, I agree that some issues might come up later. Typically I’d tell our members that we’re looking for some specific features (like in microstructure) by recommending relevant papers, and ask them to look for those features in the tests (mostly two to three members were taking care of microstructure imaging, and in two cases I personally did). However, if there are any proved issues due to shortcoming from our side, I’d feel responsible, apologize and collaborate to even retract the flawed paper.

Regarding the example you mentioned, respectfully I did not realize which images specifically you mean by identical, so I try to briefly mention what might have been assumed as similarity, and later on in the following, I’ll expand and elaborate on the potential challenges regarding what could be thought of as similarity or even duplication.

Regarding the example paper,

1. SEM microstructure images may seem similar because concrete or mortar micrographs are very similar, especially if taken at the same ages seeking for particular features. However, I’d be surprised if they’re duplicated because as far as I knew, our team member provided the images.
2. Our paper was published in 2012 and the other one in 2016, so ours was published 4 years earlier, and I did not duplicate from that paper. Frankly, I did not try to share the images with the authors of that work.
3. Several papers were published after my work, which are similar in topic and procedure, but I would not say they tried to duplicate my work, as in experimental engineering including construction, many later works are more validations of the earlier works with some improvements. Because local basic materials used in the experiments with similar procedure, can lead to varied results.
* For example, one of the reviewer commented on one of my experimental papers that even though there are other similar works, as cited in the paper, but because the extensive experimental results of the paper would add to the current literature, he would recommend it for publication with some revisions.

Regarding the second concern, I absolutely have not had any affiliation, collaboration or association with Nazari and frankly I do not even know him personally. I came across his papers online and studied his papers while I was reviewing the literature and working on my research. I emailed him a couple times to ask some questions but could never reach out to him. As far as I remember, I also cited some of his papers in some of my works as his works were the most recent and relevant to my research back then. I’d never want to deliberately cite false research if I knew about it. Our research areas are similar but I never had any research collaboration with him. It is worth mentioning that SCC and admixture was a ‘hot topic’ back then and many researchers were parallelly working on that, which might have led to many similar works.

Regarding the third concern, frankly speaking, the experiments were of course labor-intensive and costly and I (we) did not have personal or family financial support, and hence I (we) had to team up with other graduate students to spread the work and the cost. It’s easy to call it gift authorship but to be fair, it never was a gift authorship as anyone who contributed to a part of study (materials procurement, equipment, characterization, etc.) was included in the paper. I’ll expand on this challenge in the following in “challenges” section. I should mentioned that as far as I know, I don’t think even any of our teammates ever had any affiliation or collaboration with Nazari or his team members.

**Challenges:**

**(Including difficulties and conflicts in the existing research and publications)**

* **Causes of Similarity**
* Hot topic: When a hot topic emerges in some engineering area, including experiment and modeling, many researchers start working on that (mostly in similar ways), and in a quit short time, numerous papers become available with similar topic (such as SCC and admixtures in civil engineering materials). Since they include similar procedures based on certain test standards (such as ASTM or ACI), the procedure and test method summaries in the papers also inevitably add to the similarity. Therefore, many phrases and terms and combinations become similar. Not to mentioned that in most cases, authors don’t have free similarity check software (we did not have one) and may not be able to check if there is some issues in the team-work paper.

For instance, I recently wrote a manuscript and rephrased it as much as possible and when I used limited access software for similarity check, it showed nearly 30% which was composed of 30 case of 1%, all phrases or words or terms that you cannot change.

* Paper structure: since many researchers follow a quit similar standard approach and test methods to measure different properties such as mechanical properties, rheological properties, durability properties, and microstructural properties, hence the structure of the papers also seems similar.
* Experimental work: In a hot topic research as mentioned above, several ingredient are used for the experiment, like micro or nano admixture, to make the final product, like concrete. Those ingredient especially the new ones are supplied by limited number of companies with similar data sheet or images (at least back then the products were indirectly supplied by some limited Chinese companies), which are the only available images to be used in the paper if requested by the reviewers.

On the other hand, the product made by those ingredients needs to be characterized in the study, for example for the microstructure by SEM or XRD. There are limited companies who do the characterization with decent price, and there are hundreds of people looking to do the test, most of whom seeking for similar features in the microstructure (for example the concrete microstructure at 3, 7, 21, 28 and 90 days). That’s another source of similarity.

* **Labor and Cost (that should be distributed among members)**

The amount of effort (labor) and cost required for an experimental research especially in civil engineering experiments like concrete is much more significant than it may seem. You can take a look at the following items and think about it:

* The materials including aggregate, cement, admixtures, etc. (Cost and effort to supply),
* All the lab work to make the samples for a variety of tests including rheology, mechanical and durability testing,
* The cost (purchase or rent) of rheological tools and mechanical testing equipment,
* The cost of using the lab area depending on how long you’re going to store and cure the samples (say up to 90 days),
* The cost and effort to take the samples to different places (companies) for microstructural testing and equipment,
* If the research is not funded by any institution, and the cost and labor is on the shoulder of the team members, then they have to be included in the papers based on the level of their contribution. So It is NOT a gift authorship
* If a model is developed later on based on the experiment for another paper, and some supervisor is giving me technical support or covering my time of model development or providing us with the editing service, it is just fair for them to be included in the paper. So it is NOT a gift authorship.
* We had all these challenges and had to distribute the work and the cost among the team members. It is worth noticing that our research was NOT funded and we never claimed that it was. It was tough and it never reflects a gift authorship.