

Google Scholar sent me today (October 26, 2026) an email notification that the below review article cited one of my peer-reviewed Journal publications.

Citing article:

T. Yoshida, T. Tanabe, and M. Yamamoto, "Gallium oxides and hydroxides as photocatalysts for water splitting and CO₂ reduction with water: a review," *Catalysis Science and Technology*, 11 September 2026, <https://doi.org/10.1039/d6cy00416d>.

My article cited:

A. C. Tas, P. J. Majewski, and F. Aldinger, "Synthesis of gallium hydroxide crystals in aqueous solutions with or without urea and their calcination behavior," *Journal of The American Ceramic Society*, [85\(6\), 1421-1429 \(2002\)](#).

As I did most of the time when I am notified about articles that cited my contributions to materials science, I opened this new review article and started reading it at a spare time of mine.

My article originated from my research work, as a visiting professor, at Max-Planck-Institut fuer Metallforschung (Stuttgart, Germany) that lasted from February 1999 till February 2001, just before I joined Merck Biomaterials GmbH (Darmstadt, Germany).

My work published in 2002 in the Journal of The American Ceramic Society produced zeppelin-like or spindle-like GaO(OH) nanoparticles as shown in its Figs. 2a and 2b, as well as their experimental powder X-ray diffraction pattern depicted in Table I of my article. This XRD pattern of GaO(OH) was then accepted into the ICDD-PDF (International Centre for Diffraction Data – Powder Diffraction File) database with the number of ICDD-assigned number of [00-054-0910](#) (to replace the low quality XRD pattern of GaO(OH) with the number 00-006-0180). My article also provided valuable data to disclose the calcination (heating in an air atmosphere) behavior of GaO(OH) nano-zeppelins/nano-spindles (into Ga₂O₃) using XRD, SEM, TG/DTA and FTIR.

As a result, when I first opened the new review article that cited my work I was hoping that the authors would give a proper citation to my contribution. They prepared extensive Tables to cite the previous literature. My article clearly deserved to be cited in their Table 2.

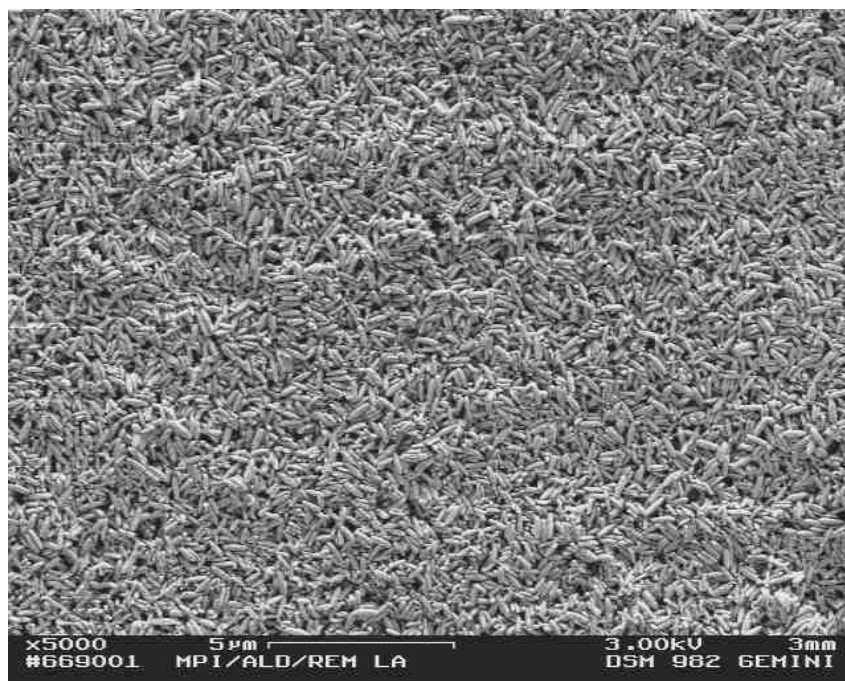
No, it was not! The authors of this review article apparently preferred to cite in Table 2 (and in Tables 3 and 4) articles which were published long after the publication of my contribution in 2002.

The only sentence they used in citing my article did appear in p. 7 of their article, quoted below.

*"As seen in Fig. 3, Ga₂O₃ is usually synthesized by impregnation and calcination starting from gallium nitrate (Ga(NO₃)₃) or its hydrate (Ga(NO₃)₃ + nH₂O) or a hydrothermal method starting from Ga metal or GaCl₃. In both processes, the first product is GaOOH (sometimes Ga(OH)₃ is included), which is stable up to around 350°C, and succeeding heat treatment above 400°C transforms GaOOH into Ga₂O₃."*⁸⁵

That reference **85** was for my article, they never cited my work ever again in their article although they ascribed the term “nanospindles of GaOOH” numerous times in their article to some authors which took the podium long after the publication of my article.

Below are the scanning electron microscope (SEM) photomicrographs from my work on GaO(OH) nano-zeppelins/nano-spindles; captured at Max-Planck-Institut in Stuttgart back in the year 2000.



Converting gallium oxyhydroxide (**GaO(OH)**) to gallium nitride (**GaN**) is an ammonolysis reaction in which the oxygen in the precursor is replaced by nitrogen. This process is widely used to synthesize high-quality, submicron-sized GaN powders or nanostructures. Gallium Nitride (GaN) is the foundational semiconductor material that made modern bright-white and blue LEDs possible. By combining blue GaN LEDs with phosphors, manufacturers convert the short-wavelength blue light into full-spectrum white light, allowing them to drastically outperform incandescent bulbs in energy efficiency and longevity.

And, the below was how my GaO(OH) monodisperse nano-zeppelins/nano-spindles as-produced at 90°C looked when viewed by a transmission electron microscope (TEM), together with their inscribed selected area electron diffraction (SAED) pattern.



The authors of this fresh review article also focused on the effectiveness of ZnGa_2O_4 and mentioned it 39 times. However, they seemed to be not aware of my article on ZnGa_2O_4 in which I used the same procedure wet-chemical synthesis at 90°C and published that also in 2002. That ZnGa_2O_4 article was a direct companion to the $\text{GaO}(\text{OH})$ article and this was why I synthesized $\text{GaO}(\text{OH})$ and pure or Mn-doped ZnGa_2O_4 materials within the same timeframe:

A. C. Tas, P. J. Majewski, and F. Aldinger, "Chemical synthesis of crystalline, pure or Mn-doped ZnGa_2O_4 powders at 90°C ," *Journal of Materials Research*, [17 \(6\), 1425-1433 \(2002\)](#). This *Journal of Materials Research* was the premiere *Journal* of the Materials Research Society. The procedure I described in this paper then became a European patent:

"Method of producing crystalline phosphor powders at low temperature," European Patent No. [1,227,139 B1](#) (April 5, 2006).

It is more than interesting to note that the ZnGa_2O_4 synthesis articles so many times this fresh review article chose to cite were all published long years after my ZnGa_2O_4 publication of 2002.

There shall be no misunderstanding here; I am not craving to increase my citation numbers at this stage of my career (received my PhD in 1993 from the Department of Materials Science and Engineering of the Iowa State University), I have already gathered more than 7600 Google Scholar citations over the years (to only 70 journal publications) which turned out to generate a Google Scholar h-index of 44.

This writeup has the sole intention of underlining something more serious than receiving a proper citation to one's work and I happen to see what I will describe below more and more over the course of the last decade.

The authors of today started to cite only the recently published articles, sometimes limited to the last 10 years or so and they kept omitting or ignoring the seminal papers which were published a while ago. Since the authors keep citing only the most recent articles, some potential authors might be looking at the previous publications to catch some seminal work in their field that they can repeat in one way or the other. When and if they find such significant previous publications, they only seemed to add an infinitesimal novelty to their so-called "new work" and repeat the synthesis/characterization procedures already published, but publish it this time in their own names, without even having the bare minimum courtesy to cite the previous work.

Moreover, with the tremendous/exponential increase in the new manuscripts (in line with the global population increase) flooding the submission sites of *Journals*, the reviewers (if the *Journal* editors are able to find them) would not have the will to perform a careful literature survey on the topic of the new manuscript they are looking at. This brings up the question: are the reviewers performing a novelty check by using Science Citation Index/Web of Science? I don't think so. Thus, the process of ignoring the papers published, let's say, 25-30 years ago proceeds in an involuntary yet joint effort of authors

and reviewers. What happens when the Journals also advise their potential authors to limit their list of references to the last 5, 10, 15 or 20 years? *Tragedy tripled?!*

The authors of this 50 pages-long review article, with 279 references, was contributed from Nagoya University (Japan). One can assume that the authors had full access to the Web of Science/Science Citation Index database for searching the literature. When one uses Web of Science, one will surely obtain more than 279 articles on this topic, but the precision will be lost when the authors start eliminating some articles.

Review articles are dangerous, when they come with “respectable” (whatever that means is a separate discussion topic) institutional addresses in their 1st page, then the young and budding grad or undergrad students who happen to study or at least read that review article may tend to regard it as a source summarizing the “state-of-the-art.” This is the danger. On the other hand, typical university curricula do not have any courses to teach science/engineering/technology students how to access, analyze and digest previous work.

“This is the online database for published literature, start using it by the usernames/passcodes you have and collect articles on the topic.” (The poor student may have hundreds or thousands of articles on a given topic in his/her computer but did not have time to read, analyze and understand those. Analyzing and understanding the previous literature is a skill mastered with the passage of time, if it is not altogether commissioned to today’s AI/SI.) The approach in quotation marks has nothing to do with educating the young and budding scientists on reading, analyzing and understanding the previous literature paper-by-paper, it could only lead to long articles with long list of references with significant omissions. The case of ZnGa₂O₄ I gave above is a live example, the author of this review article did not perform a careful literature search on ZnGa₂O₄, or omitted the articles published before 2010, while having a so-so literature search on GaO(OH).

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