My evaluation on the Habiltatation Thesis formed by 8 publications under the common title "Fast-switching photonic crystal fibers infiltrated with ferroelectric and nematic liquid crystals." by Dr inż. Daniel Konrad Budaszewski:

1-Dr. Budaszewski has demonstrated a consistent research program on developing photonic crystal fibers having ferroelectric and nematic liquid crystals inside for improved electro-optical properties. Core of these works are demonstrated in publications H1-H8 which form the basis of this habilitration thesis. Such new concepts are important for applications targeting to obtain tunable long-period fiber gratings, in-fiber polarization controllers, or in-fiber optical attenuators using photonic crystal fibers. The overall goal of the resarech program can be summarized as achieving photonic crystal fibers with fast switching electro-optical properties. I am happy to see that this goal has been achieved especially based on the results reported in publications H6 andf H8. H6 demonstrates up to 82% reduction in switching times under electric fields for photonic liquid crystal fibers (containing 6CHBT) doped with 2 nm gold nanoparticles. H8 shows further enhancement in electro-optical switching propoerties of photonic crystal fibers containing ferroelectric liquid crystals doped with TiO2.

2-Papers other than H6 and H8 demonstrate the steps needed to achieve those publicartions. H1, H2 and H5 constitute works with photonic crystal fibers filled with ferroelectric liquid crystals that were later used in H8. While H3 and H4 constitute works with photonic crystals fibers filled with nematic liquid crystals doped with metal nanoparticles. These results have lead to the main result shown in H6.

3-Another important aspect of this habilitation thesis is the demonstration of the photo-alignment concept for ferroelectric liquid crystals (shown in H1 and H2). In these works ultraviolet light is used as a novel mechanism of aligning ferroelectric liquid crystals.

4-Please note that in some places of the Zal_3b document the number of publications forming the core of the habilitation thesis is declared as 7 but not 8 (e.g. page 5 line 4). I think this is a typo and can be corrected by the candidate. Also publication H8 is not referred in the paragpraph below in page 4 of Zal_3b:

> Publications [H1, H2, H5] involve research works on electro-optical properties of the PCFs infiltrated with chiral smectic C LCs (SmC*) that possess ferroelectric properties. Publications [H3, H4, H6] corresponds to research on PCFs infiltrated with NLCs doped with metallic nanoparticles (NPs). The last publication [H7] joins together the research approaches mentioned above and describes spectral and electro-optical properties of the PCFs infiltrated with NPs-doped ferroelectric liquid crystals (FLCs).

I think these are due to the fact that H8 is a very recent publication. The candidate can make sure that H8 related discussions are better incorporated into the whole habilitation thesis.

5-The publications that constitute the core of this habilitation thesis were obtained as a result of 3 research grants. The candidate was the PI in two of those grants while he was the researcher in the third one. I think this shows a good performance on obtaining research grants on the part of the candidate. Considering the period from 2012 to 2023, I think the number of acquired grants could be higher, and especially more European grants could be added to the list of projects for an exceptional project performance. Hence, I find the candidate's grant acquisition performance to be "very good" but not "exceptional".

6-Teaching & Supervision: The candidate has been teaching 9 different courses between 2012-2023 in Warsaw University of Technology. Furthermore the candidate has supervised 11 undergraduate, 1 MS and 1 PhD students, and currently supervising 2 undergraduate students. In my opinion, these point at a "very good" performance in teaching & supervision. At the same time I also think that, especially the number of MS/PhD students supervised by the candidate could be larger. So, this looks like a point of improvement for the future career of the candidate I believe. I have to note that every university has their own conditions for MS/PhD student recruitment, and recently recruiting good graduate students has become more and more difficult internationally. These may also have played roles in limiting the number of graduate students supervised by the candidate.

In conclusion, from the files it is clear to me that Dr inż. Daniel Konrad Budaszewski is a very good academician who has demonstrated very good independent researcher skills showing a clear research track on photonic crystal fibers with embedded liquid crystals for improved (faster) electro-optical properties. I think the graduate student supervision, and research grants acquisitions aspects of his career could be improved, and the candidate can give special emphasis on improving these aspects in his future career. There are also some minor typos in the habilitation thesis as noted in item 4 above. Overall I find this habilitation thesis to be very good, and to satisfy all necessary criteria for promoting him to a habilitated doctor in physical sciences. I strongly recommend the accpetance of this habilitation thesis by Dr inż. Daniel Konrad Budaszewski to the faculty. I wish him all the success in his future carrier.