

Please find below point-by-point response (blue text) to the editor and reviewers based on the 'minor revisions'.

With the next revision, please remove the "Team list" section with content from the manuscript. Since only the manuscript's authors are listed in this section. Please note that "team" refers to a different type of contributor group. See more details below: https://www.biogeosciences.net/policies/obligations_for_authors.html > 10.

The Team list has been deleted.

Reviewer #1

According to me the authors sufficiently integrated the reviewer's comments. Among other things, a sentence has been added to moderate the results obtained, regarding the need to include nutrients in the experimental design to allow stronger conclusions. I recommend minor revisions as the first paragraph of the discussion is still a repetition of the introduction; it would be more interesting to summarize the results obtained.

This paragraph has been re-written to highlight the findings, as per reviewer's request. It now reads: *"Here we investigated thermally adapted Leptocylindrus danicus strains isolated from four distinct latitudes to determine how strain-specific physiology, morphology and silica production rates differ with temperature and irradiance. We found strong latitudinal effects on cell volume and pigment content, both diminishing with temperature, and an inverse pattern in photosynthetic efficiency at different growth irradiances, where the higher temperature acclimated strains performed better at low light, while lower temperature strains performed better when grown at higher irradiance. Cell-specific silica incorporation rates were lower at cooler temperatures under low irradiance, but the pattern reversed when normalised to surface area, suggestive of development of thicker frustules in the strains acclimated to cooler temperatures. These data provide new insight into ways in which growth temperature and irradiance modulate physiology and silicification in L. danicus, enhancing our understanding of plasticity, physiological trade-offs and the adaptation potential of a cosmopolitan diatom to ocean warming."*

Reviewer #2

I congratulate the authors for their improved version of their manuscript (and apologize for not having noticed the strains pictures in the supplementals during my first round of

review). The only thing lacking now is a description of the newly added NPQ patterns in the Results section (new Figure 4) and their interpretation vs. strains/temperature optima in the Discussion. And to be complete, the way NPQ was computed needs to be described in the M and M section 2.6.

Information on the NPQ calculations have been added to the methods section (section 2.6). The results have been expanded to provide more detail on the NPQ results (see lines 300-305, clean version). While there was not a lot of information to be obtained from the NPQ data, a brief NPQ interpretation has been included into the discussion, as requested by the reviewer (see lines 440-442, clean version).