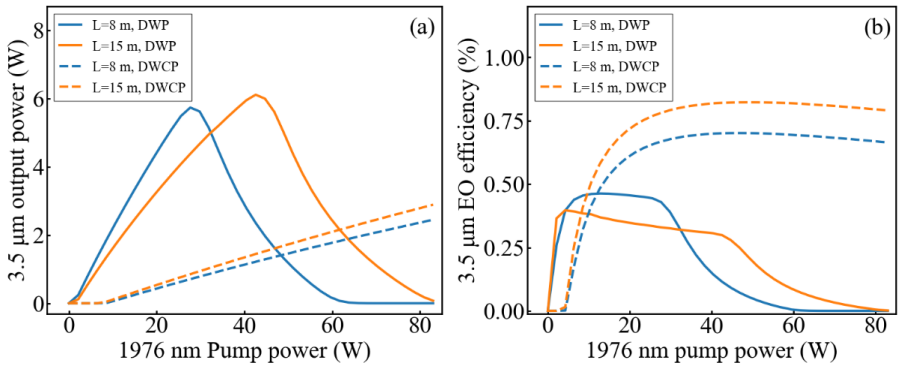
Response to Reviewer 1 Comments

Point 1: The statement "The stability and electro-optical conversion efficiency are better than traditional DWP scheme, whereas the slop efficiency is decreased, and the lasing threshold is increased" is a very weak statement. This is because the statement implies that the slop efficiency has decreased while the lasing threshold has increased. Instead of making a general comment, authors should include the particular data that can be used to compare the performances of the items.



Response 1: With the help of other reviewer comments, Figure 3 is remade to show this statement more clearly. Figure (a) shows the slope efficiency is decreased while lasing threshold increased. Figure (b) shows the electro-optical efficiency is improved. For a 15 m long fiber, at 2 W 3.5 μm laser output, DWCP shows a 48% higher electro-optical efficiency than DWP scheme. In this kind of numerical analize, these data are not expected to be very accurate. Therefor we would like to keep them as qualitative analysis, while in analysis of fiber length, core diameter, and OC reflectivity, more accurately quantitative results are given.

Point 2: If it is at all possible, I would want to encourage the authors to add a table that compares the performance of the currently available core-pumped laser with the proposed clad pump laser.

Response 2:

Pumping scheme	Output power (W)	Pump 1 (W)	Pump 2 (W)	Year and reference
Spacial DWP	0.26	0.194	2.15	2014 [1]
All fiber DWP	1.52	6.5	9.2	2016 [2]
All fiber DWP	5.6	3.61	17.6	2017 [3]
All fiber DWP	14.9	50.2	36.3	2017 [4]
Spacial DWP	0.85	1.76	4.89	2017 [5]
Simulation DWCP	2	10	64	This work

We made a table to show the power performance of DWP 3.5 μm lasers. 3.5 μm fiber laser is still at an early stage of investigation. The propose of DWCP scheme is not intended to show its performance, but for its stability. In our experiment, core pumping scheme is very unstable. It should be re-adjusted every a few days, because the excursion caused by vibrations and gravity makes the couple efficiency decrease. The convenience brought by clad pump is the key point of this DWCP scheme. Thus, we

tend to not include this table in the article, but we do have a revised figure 3 (shows in response 1) to show the performance of DWCP more clearly.

[1] Ori Henderson-Sapir, Jesper Munch, and David J. Ottaway, "Mid-infrared fiber lasers at and beyond 3.5 μm using dual-wavelength pumping," Opt. Lett. 39, 493-496 (2014)
[2] Vincent Fortin, Frédéric Maes, Martin Bernier, Souleymane Toubou Bah, Marc D'Auteuil, and Réal Vallée, "Watt-level erbium-doped all-fiber laser at 3.44 μm," Opt. Lett. 41, 559-562 (2016)
[3] Frédéric Maes, Vincent Fortin, Martin Bernier, and Réal Vallée, "5.6 W monolithic fiber laser at 3.55 μm," Opt. Lett. 42, 2054-2057 (2017)
[4] Frédéric Maes, Vincent Fortin, Martin Bernier, and Réal Vallée, "5.6 W monolithic fiber laser at 3.55 μm," Opt. Lett. 42, 2054-2057 (2017)
[5] Zhipeng Qin, Guoqiang Xie, Jingui Ma, Peng Yuan, and Liejia Qian, "Mid-infrared Er:ZBLAN fiber laser reaching 3.68 μm wavelength," Chin. Opt. Lett. 15, 111402- (2017)