DIPLOMA THESIS EVALUATION
OPPONENT EVALUATION

Author name: Michael Dostálek

Thesis title: Development of a computer aided software to capture and determine crack lengths of fracture mechanics test specimens

Opponent: M.A. Dipl.-Ing. (FH) Stefan Keck

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A. Abstract quality, keywords matching ........................................... Excellent (1)
B. Research scope and processing .................................................. Excellent (1)
C. Level of theoretical part ............................................................. Excellent minus (1-)
D. Appropriateness of the methods .................................................... Excellent (1)
E. Results elaboration and discussion ............................................... Excellent (1)
F. Students own contribution ........................................................... Excellent (1)
G. The conclusion statement ............................................................ Excellent (1)
H. Fulfillment of Thesis tasks (goals) ................................................. Fulfilled
I. Structure, correctness and fullness of references ............................... Excellent (1)
J. Typographical and language level .................................................. Excellent (1)
K. Formal quality ................................................................. Excellent (1)
   (text structure, chapters order, clarity of illustrations)

Comments, remarks

The author has taken many methods into account.
There is also an excellent assessment of the results obtained.
The conclusion part contains many advices to deal with the software and hardware.

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Overall assessment:

Describing the crack path in fracture mechanics test specimens (e.g. made of unidirectional aligned fibre-reinforced plastics) not knowing the real crack path is a difficult topic in the field of material testing. If it is not possible to estimate specific properties by means of well-established testing procedures new methods need to be developed.

In this master thesis a computer aided software was build from scratch holding various methods to determine the real crack path. The experimental procedure was well-chosen including many constellations to obtain satisfactory results for analyses. Because of capturing a huge amount of image data for evaluation there is a big advantage in analysing these data automatically.

This software can also be used to capture and determine surface cracks of any other materials.

Questions for the defense:

1. Why were cross and diamond kernel particularly chosen as morphological operators?

Overall classification:

Work meets the Master degree requirements and therefore I recommend it for defense

I suggest to classify this work by grade Excellent (1)

In Zittau, Germany

date 17.08.2016

By signing I certify that I am not in any personal relationship with the author of the thesis

Opponent signature