

Mailing list:

Members of the examination committee
Doctoral candidate

Munich, April 21, 2026

Invitation to the Oral Examination – Department CE

For the occasion of his examination for a Doctoral Degree,

Mr. Matthias Ludwig

will present his dissertation entitled:

„ Physical Inspection of Microelectronics for Trust: A Study on Integrity and Authenticity Verification Techniques “

(„Physikalische Inspektion für Vertrauenswürdige Mikroelektronik: Eine Studie über Techniken zur Verifikation der Integrität und Authentizität “)

on

April 29th, 2026, at 16:00 PM

Attendance to the **presentation is open to the public** and will take place in **hybrid mode**:

Presence in N1414 and BBB - to get the access data, please contact:
schrag@tum.de

The presentation will be in **English**.

The candidate, all members of the Examination Committee, and authorized examiners of the TUM School of CIT are invited to the presentation and subsequent oral examination.

Subsequent examination will take place **in presence**
in room:

N1414, N4 (on the first floor), Theresienstr. 90/I, 80333 Munich

Examination committee:

Chair: Prof. Dr. rer. nat. habil. Gabriele Schrag

First Examiner: Prof. Dr.-Ing. Georg Sigl

Second Examiner: Hon.-Prof. Dr.-Ing. Wolfgang Ecker

Third Examiner: ---

Abstract:

„ This thesis proposes methods to verify hardware integrity and authenticity through physical inspection. For counterfeit detection, physical inspection methods are proposed conceptually. The technology analysis is validated on realistic and simulated cases. For the detection of layout modifications, a golden and a non-golden model is introduced and experimentally applied. The research emphasizes a holistic approach, integrating method development, qualification, and cross-methodical considerations. “