

PhD position 6: Reliability of IC packages under small loading conditions	
Employers	
Prof. Willem van Driel from Delft University of Technology in Delft, the Netherlands, Dr. Romuald Roucou and Dr. Rene Rongen from NXP Semiconductors N.V. in Nijmegen, the Netherlands are looking for a PhD candidate to join a three-year research training within the EU-funded MCSA industrial doctorate MIRELAI . You will be enrolled in the PhD programme of Delft University of Technology and supervised by Prof. Willem van Driel (TU Delft) and Prof. Guo Qi Zhang (TU Delft).	
Project description	
<ul style="list-style-type: none"> Review of the common available acceleration models for small loads on semiconductor materials. Investigation of the impact of how loads are dissipated through most common package technologies. Investigation of the influence of many small loads (ΔT) on the reliability of packages and how this should be covered during qualification. Quantification of the physical degradation of materials within packages (grain size change and crystal orientation or crack growth in solder or chain length decrease in polymers). Development of a universal acceleration model for small loads following material degradations on the small scale. Verification to a carrier device. 	
International mobility	
As a PhD candidate, you will be employed for 18 months each by TU Delft and NXP. During the placement at TU Delft, you will also undertake a 1-month placement at PCCL, supervised by Dr. Gernot Oreski.	
Requirements	
Specific Eligibility Criteria on the Horizon Europe: Marie Skłodowska-Curie (MSCA) programme apply, including the mobility rule and PhD rules. Applicants of any nationality are welcome.	
Additional requirements	
<ul style="list-style-type: none"> Master's degree in science, electrical/mechanical engineering, physics, mathematics Background in programming (e.g., Matlab, Python) English proficiency: Toefl-IBT test >100 points or IELTS test >7,0 	
The monthly support and benefits	
<ul style="list-style-type: none"> The successful candidate will benefit from an international scientific network of academic and industrial partners with research excellence in microelectronics reliability based on experimental characterization, simulation, and data-driven approaches Flexible working hours and part-time home office Personalised career development plans will be established to support the needs of the PhD candidate The PhD candidate will receive an attractive salary in accordance with the MSCA regulations. The financial package will include: 1) Living allowance of €3,400 (country correction coefficient applies), 2) Mobility allowance of €600, 3) Family allowance (€660), if applicable. The exact (net) salary will be confirmed upon appointment and is dependent on local tax, social and health insurance regulations and on the country correction factor and be subjected to deductions for employment costs. 	
Application	
Required documents:	Complete applications in English should include: <ul style="list-style-type: none"> CV* and copy of diploma Letter of motivation and letter of recommendation English language proficiency certificate(s) (not for native speakers)
Selection process:	<ul style="list-style-type: none"> Our selection procedure for PhD position is open, transparent, merit-based and in line with the principles set out in the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers The application dossier needs to be submitted as a single PDF file to w.d.vandriel-1@tudelft.nl by 28-02-2023. Please indicate by: 'MIRELAI: PhD position 06 - your name' Pre-selected candidates will be invited for interviews by 15-03-2023. Unsuccessful applicants will not receive any notification
Application deadline:	28-02-2023
Expected start date:	The individual PhD project is set to start after 15-03-2023
Contact person for enquiries:	Prof. Dr. Ir. W.D. van Driel Email address: w.d.vandriel-1@tudelft.nl Phone: +31 6 50 123153

* The CV must be signed by the candidate and has to bear the following sentence concerning the management of candidate's personal data: *"The undersigned Name and Surname authorizes the management of his/her personal data contained in the application documents as foreseen by the European Regulation 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and declares to be aware of the rights of the data subject as listed in Chapter III of the aforementioned European Regulation"*.