

SECTION C

Weekly Journal

Instruction to Student:

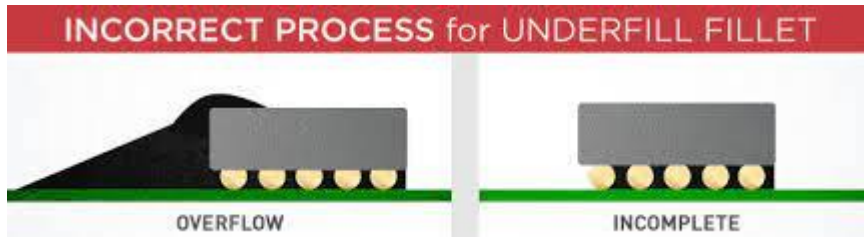
1. On a daily basis, record the specific task that you carried out for that day.
2. At the end of every week, describe one task in more details with diagrams or photos attached.

Week : 2 Date from: 18/3/2024 to 22/3/2024

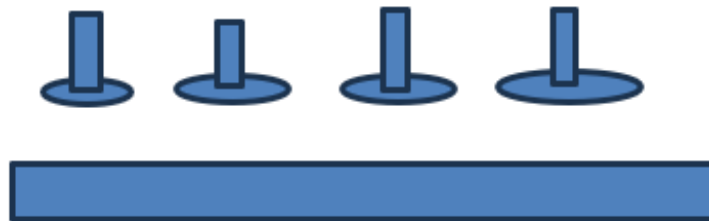
Department/Section Attached: Assembly Metrology

Day	Tasks Record
Monday	<ul style="list-style-type: none">• Spent the day learning the UFADC, defect types.• Understanding the process and how the daily user validation is carried out.• Human intervention still required to ensure ADC and IOT does not overkill/underkill.
Tuesday	<ul style="list-style-type: none">• Conducted Daily User Validation for the ADC Underfill process.• Picked out defects that were underkilled by the system.• Helped find an underkill that was missed out by the system
Wednesday	<ul style="list-style-type: none">• Went for the MSB Line Tour, viewed the testing sites and SSD lines.• Began self-studying AI Image Classification Machine Learning with Python• Aimed to create a ML classifier to pick out defects.
Thursday	<ul style="list-style-type: none">• Prepared the data set to be used for machine learning through cleaning and classifying.• Wrote a simple app for simple image classification.<ul style="list-style-type: none">○ Issue (Images are too similar hence difficult to classify despite large data size)
Friday	<ul style="list-style-type: none">• Spent the day learning machine learning, image processing, supervised and unsupervised learning.• Practiced coding in python.<ul style="list-style-type: none">○ Issue (Image clustering may be difficult due to lack of quantitative data)○ Further image processing required before creating AI model.

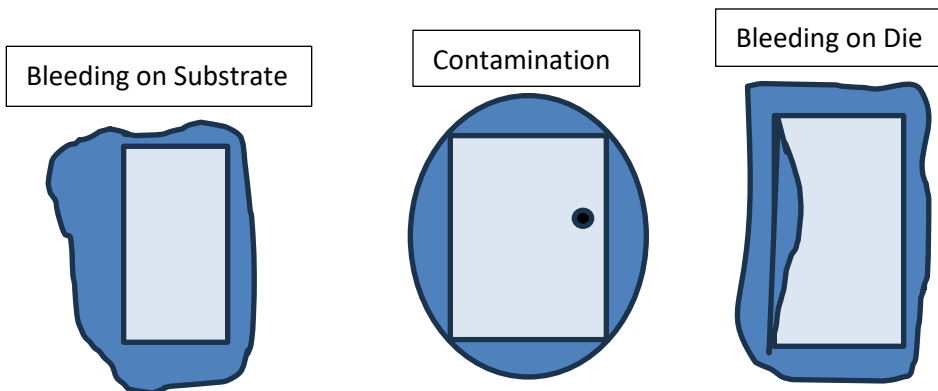
Describe one task in more details with diagrams or photos attached.
Explain the importance/relevance of this task to the company.



The underfill process occurs after the flip-chip attach process. The substrate will undergo baking and plasma before the underfill is under the flip chip. The underfill material used is as thermo-setting encapsulant with the purpose of filling in the gaps between the die and substrate due to the bump, preventing cracking. During exposure to high temperatures, the chip and substrate will expand and shrink back at different rates. The mechanical stress will be concentrated on the bumps causing it to crack.



After the underfilled is cured an image is taken of the die to pick out the defects on the die, such as contamination and bleeding on the substrate. A system will process these images and record down rejected units. Daily user validation is required because the system is not 100% accurate, the system may classify defects and good units or good units as defects essentially underkilling and overkilling. The daily user validation which I did requires the engineer to look through the samples of data each day estimated 7000 images, to pick out mistakes made by the system and report them to the engineers in charge to rectify the issue.




I was able to notice a underkilling made by the system and reported to my supervisor. A contamination larger than 100microns was accepted by the system as a good unit.

Assessment on Student

Grading Scheme :

A (Excellent)	-	Consistently exhibit qualities beyond expectation and norms.
B+ (Very Good)	-	Exhibit qualities above expectation and the norms.
B (Good)	-	Exhibit qualities which are considered necessary to produce good quality work.
C+ (Good Credit)	-	Exhibit good qualities which are the norm.
C (Credit)	-	Exhibit acceptable qualities which are the norm.
D (Pass)	-	Exhibit qualities which varies between the norm and unacceptable standard.
F (Fail)	-	Exhibit qualities which are not acceptable and are hindrances to operations.

Conduct:	A	Attendance: A	* Regular / Average / Poor
Performance :	A	Punctuality: A	* Satisfactory / Unsatisfactory
Remarks :	Firas is doing a good job on picking up how the process and inspection works for underfill process		
Name of Supervisor :	Francis Castro enter text.	Signature :	
*Delete whichever is not applicable		Date :	Mar 22, 2024