



TASK FORCE ORGANIZATION FORM (TFOF)

Date Prepared: 12 July 2017

Revised (if Applicable):

Name of Task Force (TF): Electron Microscopy Workflow TF

Originating Global Technical Committee: Physical Interfaces and Carriers

Originating TC Chapter Region/Locale: NA

Originating Subcommittee Region/Locale (if applicable):

Submitted by: Troy Morrison

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Fax:

1. Charter: (State the objective of the proposed TF.)

With rapidly shrinking design rules extremely high resolution techniques are required for investigating nano and sub-nanometer sized features and defects in semiconductor wafers and devices in manufacturing lines for semiconductor devices. Electron microscopes are capable to perform this task but so far standards are missing for operating these tools, for sample preparation and for data exchange. This lack of standards impedes the operation of electron microscopes in semiconductor device manufacturing lines as well as the exchange of information and communication between the involved parties.

Therefore this task force is chartered to develop standards needed for workflows involving electron microscopes – scanning electron microscopes as well as transmission electron microscopes – and related equipment in support of development and manufacturing of semiconductor devices as well as silicon and other semiconductor wafers.

The charter also includes any activities that are necessary for writing, maintaining, updating or improving standards such as setting up working groups, arranging workshops, round robins and phone conferences.

2. Scope: (Define the specific activities that the TF will conduct.)

- Developing and maintaining standards for
 - o operating electron microscopes (EM's) in semiconductor device manufacturing lines,
 - o performing investigations with EM's,
 - o preparing and transporting samples for EM's,
 - o consumables used in this context.
- Identifying missing standards
- Defining and developing common understanding of terms used
- Educating industry regarding new standards

In the near term the TF will develop a specification for so-called lamella carriers used to transfer the sample from tools such as FIB's (focused ion beam systems used for preparing TEM lamellas from full wafers) to the EM allowing to automate this process.

3. Formal Linkages with TFs in Other Regions/Locales: *(Show each associated TF and its parent global technical committee; indicate nature of relationship – global TF, observer TF, etc.)*

Polished Wafer TF, EPI wafer TF, SOI Wafer TF (Silicon Wafer)

Inspection and Metrology TF (3DS-IC)

[Japan PIC](#)

4. Leaders:

Name		Employer	Telephone	Fax	Email
Last	First				
Morrison	Troy	Thermo Fisher Scientific	+1 503 927-1724		Troy.morrison@fei.com
Rollings	David	Ted Pella	+1 530 243-3761		David_rollings@tedpella.com

5. Members:

Note: Final members will include TEM preparation equipment suppliers, TEM grid intermediate processing equipment suppliers, 3mm Grid manufactures, and end users in IC manufacturing. (60% of survey respondents agreed to follow up discussion on possible involvement).

Name		Employer	Telephone	Fax	Email
Last	First				
Kwakman	Laurens	Thermo Fisher Scientific	+33 6 80489138		Laurens.kwakman@fei.com
Wagner	Peter	Self	+49 (8677) 610186		peter.wagner@onlinehome.de
TBD		JEOL, Hitachi			Active in TEM
TBD		Zeiss, Tescan			TEM Prep
TBD		Fischione			Grid processing
TBD		X			Grid supplier
TBD		Y			Grid supplier
TBD		XX			IC manufacturer (optional)
TBD		YY			IC manufacturer (optional)

6. Formation Date: *(TF formed on:)*

If you do not have email capability, you may fax this form to the nearest SEMI office:

SEMI HQ: 1.408.943.7943

Europe: 32.2.416.6448

Japan: 81.3.3222.5757

Korea: 82.2.551.3406

North America: 1.408.943.7943

Taiwan:

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