



Compass Technology Company Limited

金柏科技有限公司

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Reel-to-Reel System to Support the Development of Innovative Full Additive Process for upcoming Electronics devices.

Expression of Interest are invited from suppliers who wish to submit a tender

1. Background Information

The fabrication of flexible substrate to accommodate next generation electronic device requires new manufacturing approach to cope with the trend of product miniaturization. This advanced manufacturing technique is capable of producing fine-pitch circuitization for a wide variety of high performance applications such as display driver module, IoT/IoE, medical devices, etc. To realize this project, one of the critical processes in this new technique is the chemical modification process that requires five different chemical modules.

2. Scope of Works

The work to be conducted for this project is to provide reel-to-reel chemical modules as a part of the substrate fabrication according to the following:

- a. **Module I:** Design & manufacturing of plating module including the chemistry bath tanks with water and chemical supply for formation of nickel-phosphorus (Ni-P) layer on an activated dielectric surface, as well as the electroless nickel (Ni) plating chemicals. Suppression of gas bubbles formation during the Ni-P plating process with precise agitation system and controlling the stress on the dielectric during electroless nickel (Ni) plating to prevent porosity and minimize warpage are both critical to the electroless nickel (Ni) plating process. This module is critical to form an uniform and thin Ni-P layer (with thickness of $<0.2 \mu\text{m}$). Each module of the system has to fulfill stringent tolerances and requirement in order to be working as a whole system for the successful application of the substrate fabrication process.
- b. **Module II:** Design & manufacturing of degreasing module including the chemistry bath tanks with water and chemical supply to remove surface impurities of the dielectric with degreasing chemical. Removing all kinds of surface impurities and contamination is critical as it provides a clean surface for subsequent chemical process. It can only be achieved by specialized nozzle design which enables even applications of the degreasing chemicals. Each module of the system has to fulfill stringent tolerances and requirement in order to be working as a whole system for the successful application substrate fabrication process.
- c. **Module III:** Design & manufacturing of modification module including the chemistry bath tanks with water and chemical supply to accelerate the catalyst adsorption with chemical modification. The modification is a critical step which enables the formation of adsorption site on the dielectric for catalyst adsorption in the next catalyzing stage. Each module of the system has to fulfill stringent tolerances and requirement in order to be working as a whole system for the successful application the substrate fabrication process.
- d. **Module IV:** Design & manufacturing of catalyzing module including the chemistry bath tanks with water and chemical supply for the adsorption of metal catalyst, as well as the catalyzing chemical. This module is critical to provide a highly permeable modified layer to the catalyst and at the same time, allow a highly selective deposition of modified layer for the catalyst. It can only be achieved by maintaining an optimal neutral medium for the catalysis to take place through precise control of the pH value of the bath. Each module of the system has to fulfill stringent tolerances and requirement in order to be working as a whole system for the successful application of the substrate fabrication process.



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- e. **Module V: Design & manufacturing of activating module including the chemistry bath tanks with water and chemical supply for metallization of the catalyst, as well as the activating chemicals. This module is critical to form a thin catalyzed layer (with thickness of <10nm) for joining the electroless nickel (Ni) in subsequent process. Each module of the system has to fulfill stringent tolerances and requirement in order to be working as a whole system for the successful application the substrate fabrication process.**

3. Key Dates (Tentative)

Tender issue	2/3/2018
Tender return	15/3/2018
Contract award	26/3/2018
Contract completion	29/3/2018

4. Expressions of Interest

In order to be considered for pre-qualification, interested parties having the relevant resources, qualifications, and experiences according to the scope of work are requested to express their interest through email to kelvin_pun@cgth.com on or before 15 March 2018.

5. Deadline to Return Answers/Information

Upon expression of interest, the suppliers will receive invitation of pre-qualification via email. The supplier shall complete and submit all information and details no later than the specified date on the invitation email.

For any technical enquiry on the module specification, please contact Mr Kelvin Pun of Compass Technology Co. Ltd via kelvin_pun@cgth.com