SPIN Equipments – Lithography

	Lithography				
	Name	**Picture**	**Description**	**Site**	**Responsible**
1	Ion milling system	Ion gun 3cm FC Source VEECO, ION TECH LTD Power Supply ION GUN MPS 3000;	High vacuum chamber equipped with ion gun for etching process and a self-made substrate cooling system based on N2 gas flow. The substrate's temperature can be monitored during the process.	NA	Parlato
2	Ion milling/reactive ion etching system	Prototype	Ion milling and reactive ion etching. The system is optimized for samples of dimensions 1 cm^2. During ion milling the sample is cooled at -100°C and allows the realization of YBCO nanochannels down to 50 nm and operating at 77 K.	NA	Tafuri

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3	Photolitographic Laboratory		Photolitographic room and substrate treatment room allowing processes with a resolution of 1 m . The room is dedicated to activities concerning oxide materials of interest for electronics and soft – lithography technique for the realization of PDMS microchannel.	NA	Cassinese
4	Bonder		Standard bonding facilities (Al and Au wires)	NA	Tafuri

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5	SPINCOAT		Spinner coater for photoresist deposition. Table-top. Rotation speed up to 8000 rpm. Suitable for wafers up to 150 mm of diameter. Manual photoresist dispensing. Small samples spinning capabilities.	GE	Pellegrino
6	SPUTMET	Sputtering SEM coating system.	Small table-top metal coater. Available targets: Molybdenum, Gold, Aluminium, Titanium. Target diameter: 57 mm. The system works in a 10 SCCM Argon flux. Vacuum pumping by rotary pump.	GE	Pellegrino

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7	MASKALIG		Optical lithography system designed for samples smaller than 3 cm. Exposure through a 390 nm UV led. Basic Alignment with micrometric screws and a small low-magnification binocular microscope. Suited for 5 x 5 inches photomasks.	GE	Pellegrino

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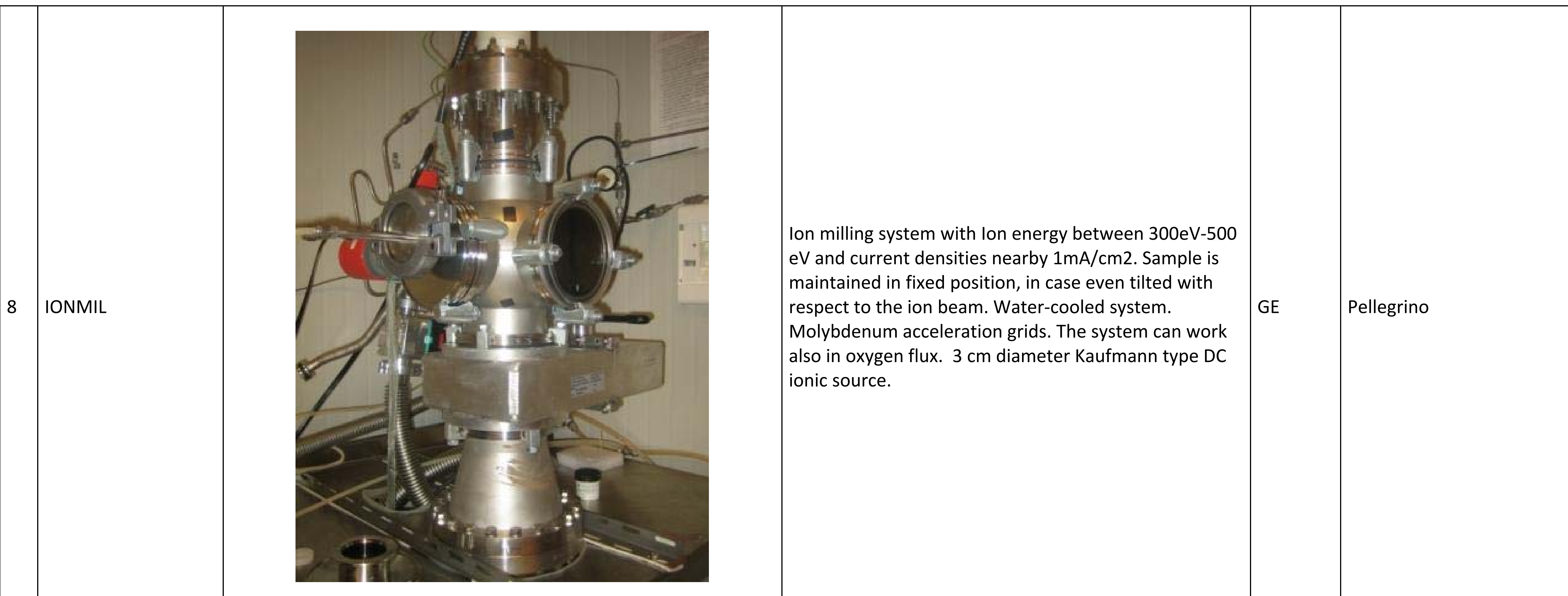
8	IONMIL		Ion milling system with Ion energy between 300eV-500 eV and current densities nearby 1mA/cm2. Sample is maintained in fixed position, in case even tilted with respect to the ion beam. Water-cooled system. Molybdenum acceleration grids. The system can work also in oxygen flux. 3 cm diameter Kaufmann type DC ionic source.	GE	Pellegrino

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9	CPDRIER		System for drying MEMS samples by supercritical CO_2. Completely manual process. Maximum sample diameter is 1.25 inches.	GE	Pellegrino
10	Photolithography laboratory	*- old lab photo -* Maskaligner MJB3 SUSS (main equipments)	Laboratory dedicated to optic lithography in class 1000 Clean Room, with Mask Aligner Karl Suss with UV lamp, spinner Cammax and spinner Laurell, drying oven, chemical bench, optical transmission and reflection microscope.	SA	Martucciello

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11	Electron Beam Lithography	*- old lab photo -* EBL FEI/Raith	Electron Beam Lithography with beam control system and Raith software for writing. Resolution 100 nm. The system is installed in class 10000 Clean Room.	SA	Martucciello
12	SIMC-SA (Station for Ion-Milling and Contact deposition)		UHV Riber system allows milling of thin films using argon ions with energies of 300eV-500eV and current density near 1mA/cm2. The sample is kept fixed, also inclined with respect to the ionic beam. In addition, the system is equipped with an 3-crucibles e-beam RIBER for in-situ deposition of metal contacts in the form of pure materials and/or alloys..	SA	Orgiani