**EQUIPMENTS SET UP AT *UNIVERSITA’ DEGLI STUDI DI PALERMO (IT)***

**FOR EXPERIMENTS ON MIP (MW-INDUCED PYROLYSIS)**

**OF SOLID OR LIQUID WASTE, AND OF LOOSE CONTAMINATED SOILS**

| **EQUIPMENT** | **PICTURE** | **APPLICATION / USE AND POSITION** |
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| Microwave professional kitchen oven, FIMAR (1 600 W; Nr. 1 magnetron; 5 power levels). 2x. | FORNO A MICROONDE - Capacità camera di cottura Lt 30 - Potenza resa Kw 1 - Potenza Kw  1.6 - Alimentazione monofase V230 - Cm 54.2 x 46.1 x 32.9 h | Disinfection of medical waste. At *Dipartimento di Scienze per la Promozione della Salute “G. D’Alessandro”,* University Polyclinic Hospital. |
| Microwave laboratory oven, CEM MARS Xpress (1 600 W; PTFE test tubes) |  | For small pasty samples. At *DICAM –* *Dipartimento di Ingegneria Civile, Ambientale etc.* |
| MILESTONE Pyro XL microwave laboratory furnace (1 200 W; up to 900 °C), fitted with one 50 cm3 quartz crucible. |  | Pyrolysis of granular waste samples; with two separate paths for cooling and process gases.At *DICAM.* |
| Self- designed, built and tuned bench prototype for high intensity waste treatment (up to “HT cold plasma” generation). | **IMG_20160128_085705** | Destruction of VOCs. At *Dipartimento di Fisica e Chimica.* |
| Steam generator, 1 kg/h, 1.6 bar. | **H:\Immagini\Università\IMG_1737 steam generator.JPG** | Oriented gasification. At *Dipartimento di Fisica e Chimica.* |
| Heating and Cooling Thermostat LAUDA *Eco RE 630* with *Silver* control head . |  | Cooling of the output process gases and condensation of the vapours. At *Dipartimento di Fisica e Chimica.* |
| Gas ChromatographAgilent 6890N, fitted with one Mass Spectrometry Module + Thermo-Conductivity + Flame Ionization. |  | Liquid and gaseous Products analysis. At *DICAM*. |
| Mass flow meters (BRONKHORST Mass- View®, max equivalent air flow 20 N-dm3/min and ALICAT M, 10 dm3/min). | Gas mass flow meterH:\Proge_ricerca\POR-INTEP\foto appar_INTEP\IMG_20160203_121101.jpg | Inlet gas flow measurement . At *DICAM* and *Dipartimento di Fisica e Chimica.* |
| Cryogenic grinder RETSCH® Cryomill (feed quantities up to 20 ml; vibrational frequency 300 - 1800 min-1). | **http://www.retsch.it/uploads/sl/eb121354df7256d83ca3c6e2243d6c32.jpg** | Sample size reduction, mixing and homogenization. Cryogenic (with liquid N2), wet and dry grinding at room temperature. At *DICAM*. |
| Line of condensers and washing flasks for condensable gaseous products. |  | Fractional recovery of gaseous products for following analysis. At *DICAM* and *Dipartimento di Fisica e Chimica.* |

NOTE: If needed, a Thermo-gravimetric Analyzer is also available at DICAM.