

## Polymer IRC Instrument List

### Materials Preparation Equipment

#### Injection moulding

<b>Instrument</b>	<b>Manufacturer</b>
Micropower 15	Wittmann Battenfeld
Wittmann Battenfeld Micropower 15 (2 <sup>nd</sup> generation model)	Wittmann Battenfeld
Microsystem 50	Wittmann Battenfeld
Fanuc 5 tons	Fanuc
Fanuc 100 tons	Fanuc
Fanuc Roboshot 30 tons	Fanuc
Cincinnati	Cincinnati
Water Injection Moulding System	Battenfeld
Ultrasound Injection Moulding Unit	Ultrason

#### Extrusion

<b>Instrument</b>	<b>Manufacturer</b>
11mm twin screw extruder	Pharmalab, Thermo Scientific, UK
16 mm twin screw extruder	Pharmalab, Thermo Scientific, UK
Haake (16 mm twin screw extruder)	Eurolab, UK
Minilab, mini twin screw extruder	Haake
Prism, 16 mm twin screw extruder	Haake
Randcastle Single screw extruder	Randcastle
Roland single screw extruder	
Powder feeder	Brabender, Germany

#### 3D Printing

<b>Instrument</b>
Mojo 3D x 1
Qube 3D x 1
Makerbot Replicator x 3
Makerbot Replicator2 x 2
Reprap Pro x 2
Mendal Full kit x 2

## Solid phase

Instrument	Manufacturer
Biaxial Stretcher	Accupull
Biaxial Stretcher TM long	Customised by Leeds Uni

Instrument	Manufacturer
Microwave Reactor	Anton Paar
Microwave Reactor MARS for Synthesis	CEM Corporation
Reactor Array RS12	Barnstead Stem
High Shear Granulator	GMX Lab Micro
Vacuum Oven	Cole Parmer
Spray Dryer	Lab-Ultima
Freeze Dryer	(Still to be procured)
Ball Mill MM200	Retsch
Cryomicrotoming Microtome & Cryostat	Leica
Dry Cabinet	Leek

## Electrospinning

Instrument	Manufacturer
Rotating spray drum	Spraybase
Fixed platform	Spraybase
Rotating Mandrel	Spraybase

## Materials Physicochemical Characterisation Equipment

Instrument	Manufacturer
Atomic Force Microscope (AFM)	Oxford Instruments
AFM combined with Confocal Microscope	Oxford Instruments and Carl Zeiss
Scanning Electron Microscopy (SEM)/Environmental SEM	FEI, Cambridge
TEM	FEI Tecnai
Confocal Laser Microscope	Olympus
Optical Profiler	Veeco
Hot Stage Microscope with Shear Assembly	Linkam, Workingham
Micro-CT	Nikon
Surface Energy Analyser	Surface Measurement Systems
Dynamic Vapour Sorption	Surface Measurement System
High Speed Camera Equus 81K SM	IRCAM
Zetasizer	Malvern

Laser Diffraction Particle Analyser	Sympatec
Particle Vision and Measurement Probe Kit	Mettler Toledo
Focused Beam Reflectance Measurement Probe Kit	Mettler Toledo
DSC	TA instruments
TGA	TA instruments
Rotational Rheometer	Anton Paar
FTIR	Thermo scientific
FT-IR Spectrometer	Digilab USA
FT-IR Microscope	Digilab USA
Raman Spectrometer	Bruker and Renishaw
Raman Spectrometer for surface mapping	Thermo scientific
In Line Raman Spectrometer	Thermo scientific
SAXS	Anton Paar
WAXS	Anton Paar
Nuclear Magnetic Resonance 400 MHz	Bruker Corporation
Nuclear Magnetic Resonance 600 MHz	JEOL
Powder X-ray Diffractometer	Bruker Corporation
Single Crystal XRD	Bruker Corporation
HPLC	Agilent
HPLC with Atomic Absorption Spectrometer	Waters
Gas Chromatography–Mass Spectrometry Machine	Agilent
Gel Permeation Chromatography	Waters
Advanced Polymer Chromatography	Waters
Ultra Performance Liquid Chromatography	Waters
Franz Diffusion Cell	Copley
Dissolution Apparatus (USP II)	Lab India
Dissolution Apparatus (USP IV)	Sotax
Dielectric Probe Kit	Agilent
Thermal Camera	FLIR systems

### Materials Mechanical Characterisation Equipment

Instrument	Manufacturer
Atomic Force Microscope (AFM)	Oxford Instruments
Nanoindenter	Hysitron
Micro mechanical testing Mach-1	Biomomentum
Mechanical Testing Machine	Bose
Dynamic Mechanical Analysis	TA instruments
Hip/Knee Simulator	ProSim

## Cell and Bacterial Culture Facilities

<b>Instrument</b>	<b>Manufacturer</b>
Incubators	Heraeus and Sanyo
Class II Biological Safety Cabinets	Thermo scientific and Bassaire and Labcaire
Class I Biological Safety Cabinets	Bassaire
Primary cells isolation facilities	
Centrifuges	Hettich Zentrifugen
Optical Microscopes	GT Vision
Ultra Low Temperature Freezer	New Brunswick Scientific
Water Baths	Grant

## Biointerface Characterisation Equipment

### Cell/Bacteria – Material Interactions, Cytocompatibility and Antimicrobial Assessment

<b>Instrument</b>	<b>Manufacturer</b>
UV Sterilisation Cabinet	SCIE-PLAS
UV/Visible Spectrophotometer	Jenway
UV Spectrometer	Agilent
In Line UV Spectrometer	Thermo scientific
Microfluidic Chambers	Made in House
Fluorescent Plate Reader	Spectra Max Gemini EM
Atomic Force Microscope (AFM)	Oxford Instruments
AFM combined with Confocal Microscope	Oxford Instruments and Carl Zeiss
Scanning Electron Microscopy (SEM)/Environmental SEM	FEI, Cambridge
Confocal Laser Microscope	Olympus
Hot stage Microscope with shear assembly	Linkam, Workingham
High Speed Camera Equus 81K SM	IRCAM