SYNCHROTRON USERS SURVEY

Report

The ALBA Synchrotron and the Spanish Synchrotron User Association (AUSE) have prepared a survey addressed to synchrotron users. The aim of this survey is to know the present and future scientific fields of interest of the Spanish ALBA synchrotron light source community. These results will help to assist the decisions on the development of new ALBA instruments.

1. General Information of the survey

The survey was sent by e-mail to ALBA Users and AUSE databases. It was available from 8th October 2013 till 4th November 2013. During this time, it was also accessible from the ALBA website.

The survey included seven different areas of information:

1. General information of participants, including: name, surname, institution and position and e-mail address.
2. Other SL and FEL source used by participants.
3. Techniques and scientific areas that participants have already used or are interested in using.
4. Key enabling and industrial technologies and societal challenges of the H2020 program to which your synchrotron-based research may contribute.
5. Future ALBA's beamlines: interest and strong support of beamlines
6. Additional information and comments

Level of participation

266 responses were collected, representing a 27% of the survey respondents.

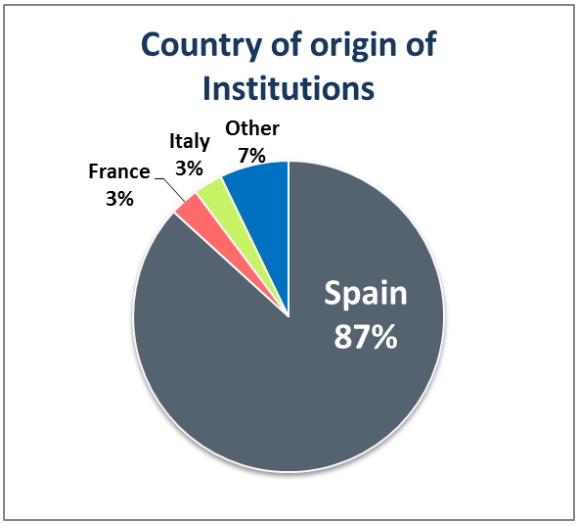
Number of total responses	**266**
Number of contacts at the e-mail list distribution*	**1.000**
% success	**>27%**

* The real number of contacts was lower considering the fact that some ALBA users are also in the AUSE mailing list.

New users interested in being part of AUSE = 99 (37% respondants)

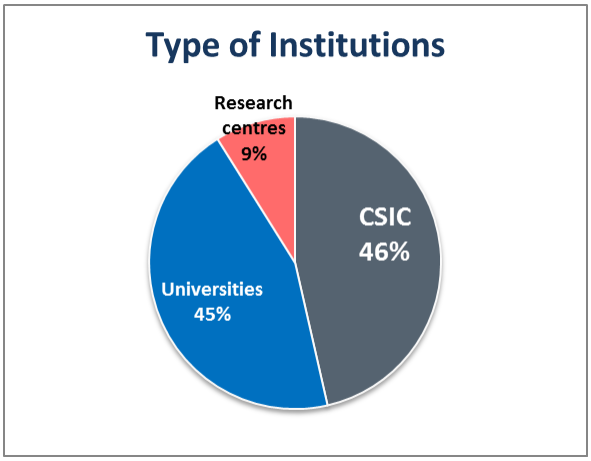
2. General Information of the survey respondents

Most of the survey respondents (**87%**) work in **Spanish institutions**, followed by France (3%) and Italy (3%). The remaining 7% is divided in other countries.

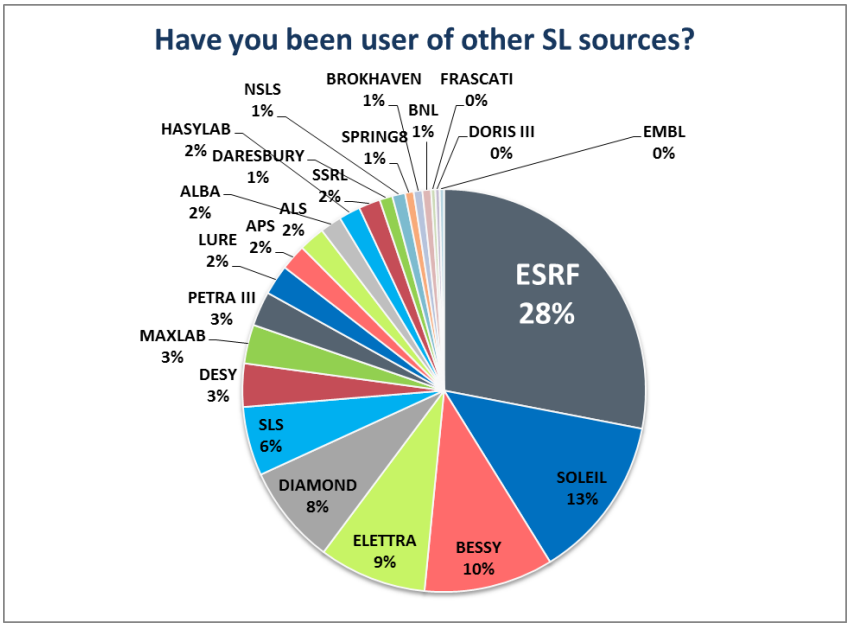


Regarding the type of research institution, almost half of the survey respondents (**46%**) work at the Spanish National Research Council (**CSIC**).

The **45%** work at **universities** and the remaining **9%** work at **research centers**.



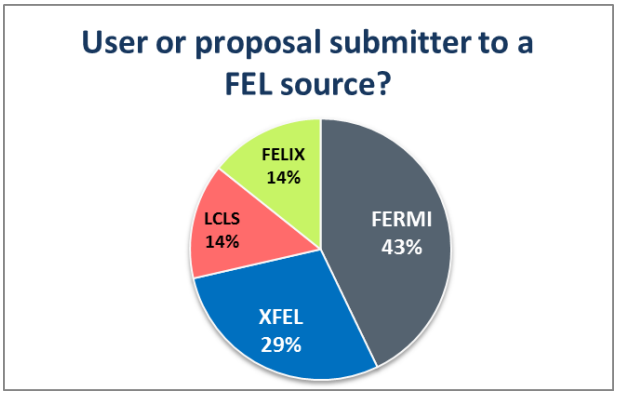
32% of survey respondents did not answer the question regarding the use of other synchrotron light or FEL source different from ALBA. The **28%** of participants confirmed they have been **users of the European Synchrotron Radiation Facility (ESRF),** followed by **Soleil Synchrotron (used by the 13% of respondents)** and **Bessy (10%).**



ESRF	81
SOLEIL	38
BESSY	30
ELETTRA	25
DIAMOND	23
SLS	16
DESY	10
MAXLAB	9
PETRA III	8
LURE	7
APS	6
ALS	6
ALBA	5
HASYLAB	5
SSRL	5
DARESBURY	3
NSLS	3
SPRING8	2
BROKHAVEN	2
BNL	2
FRASCATI	1
DORIS III	1
EMBL	1

Only **7 participants** informed that they have been users or have accepted proposals in FEL sources: FERMI (43%), XFEL (29%) and LCLS (14%) and FELIX (14%).

FERMI	**3**
XFEL	**2**
LCLS	**1**
FELIX	**1**

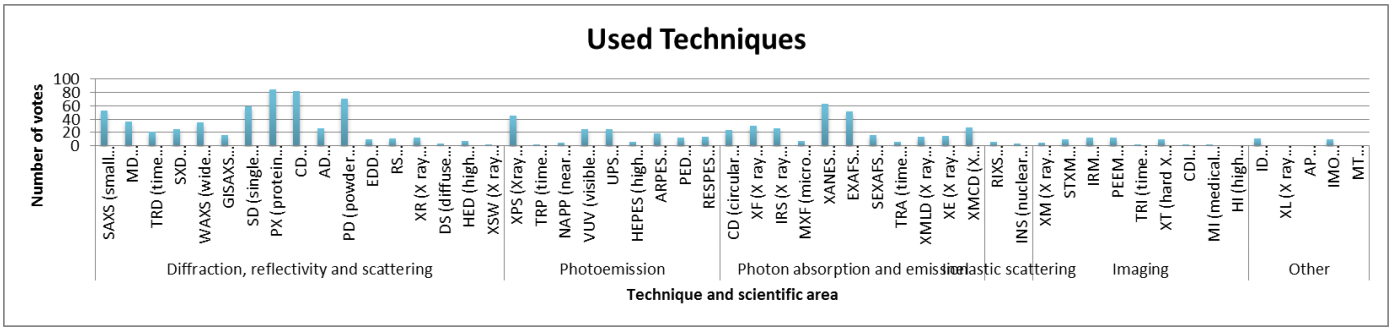


3. Techniques and scientific areas

This section of the survey included information about the interest and the used of several techniques and scientific areas. **Half of the participants (52%) did not complete this section**.

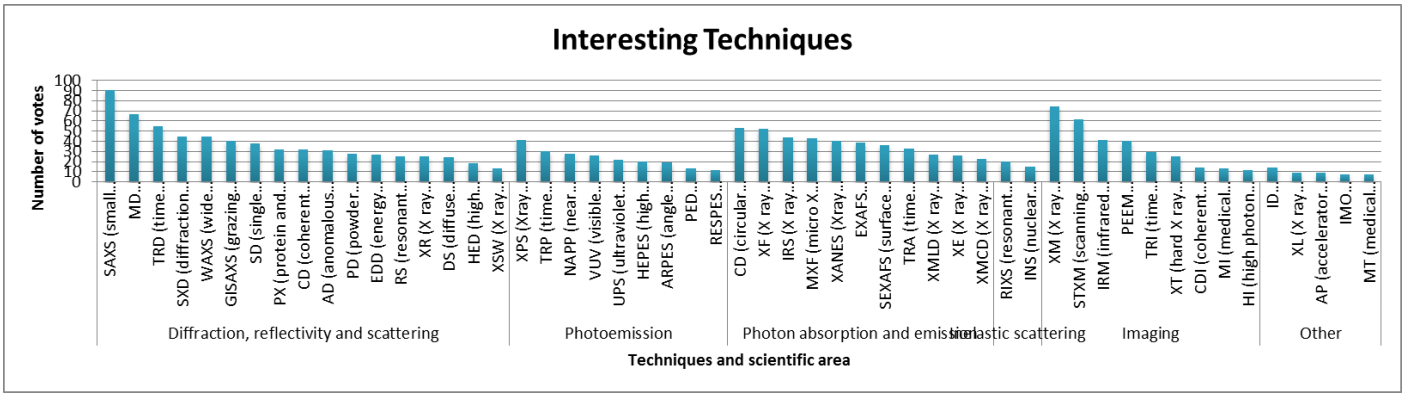
Diffraction, reflectivity and scattering techniques are the most used: **PX** (protein and macromolecular crystallography) -**32%**- in 1st position, followed by **CD** (coherent diffraction time, correlation, spectroscopy, speckles, etc.) -**31%**- and **PD** (powder diffraction) – **27%**-.

Less used techniques (each of them with 0 votes) were **HI** (high photon energy imaging), **XL** (X Ray lithography) and **MT** (medical therapy).



Users show a bigger interest also in diffraction, reflectivity and scattering techniques: SAXS (small angle x ray scattering) – **34%**- and **MD** (microdiffraction) -**25%**- but also in **imaging techniques**, occupying 2nd position **XM** (X Ray microscopy) – **28%**-.

Techniques perceived by users as less interesting are: **AP** (accelerator physics) – **3%-**, **IMO** (instrumentation mechanics and optics) – **3%**- and **MT** (medical therapy) -**3%**-.



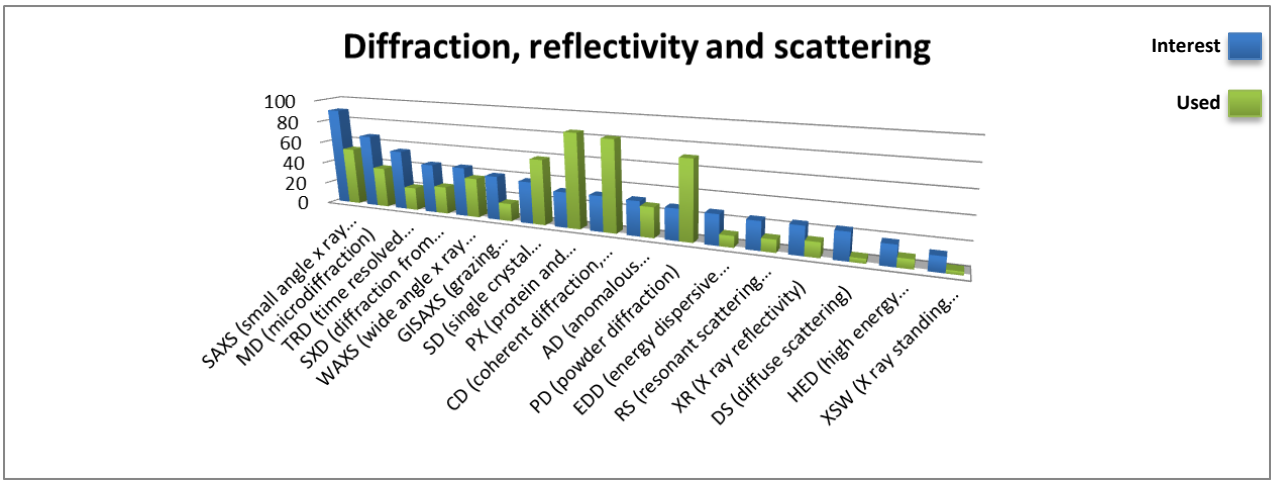
		Interest		Used	
Diffraction, reflectivity and scattering	SAXS (small angle x ray scattering)	90	34%	53	20%
	MD (microdiffraction)	67	25%	37	14%
	TRD (time resolved diffraction, dynamics)	55	21%	21	8%
	SXD (diffraction from surfaces, interfaces and thin films)	45	17%	25	9%
	WAXS (wide angle x ray scattering)	45	17%	36	14%
	GISAXS (grazing incidence small angle x ray scattering)	40	15%	16	6%
	SD (single crystal diffraction)	38	14%	59	22%
	PX (protein and macromolecular crystallography)	32	12%	85	32%
	CD (coherent diffraction, time correlation, spectroscopy, speckles,.)	32	12%	82	31%
	AD (anomalous dispersion)	31	12%	27	10%
	PD (powder diffraction)	28	11%	71	27%
	EDD (energy dispersive diffraction)	27	10%	10	4%
	RS (resonant scattering magnetic and non magnetic)	25	9%	11	4%
	XR (X ray reflectivity)	25	9%	13	5%
	DS (diffuse scattering)	24	9%	4	2%
	HED (high energy diffraction)	18	7%	8	3%
	XSW (X ray standing waves)	13	5%	3	1%
Photoemission	XPS (Xray photoemission spectroscopy)	41	15%	46	17%
	TRP (time resolved photoemission, dynamics)	30	11%	2	1%
	NAPP (near ambient pressure photoemission)	28	11%	5	2%
	VUV (visible ultraviolet spectroscopy)	26	10%	25	9%
	UPS (ultraviolet photoemission spectroscopy)	22	8%	25	9%
	HEPES (high energy photoemission)	20	8%	6	2%
	ARPES (angle resolved photoemission spectroscopy)	19	7%	19	7%
	PED (photoelectron diffraction)	13	5%	13	5%
	RESPES (resonant photoemission spectroscopy)	12	5%	14	5%
Photon absorption and emission	CD (circular dichroism)	53	20%	24	9%
	XF (X ray fluorescence)	52	20%	31	12%
	IRS (Infrared spectroscopy)	44	17%	27	10%
	MXF (micro X ray fluorescence)	43	16%	8	3%
	XANES (Xray absorption near edge structure)	40	15%	63	24%
	EXAFS (extended x ray absorption fine structure)	39	15%	52	20%
	SEXAFS (surface EXAFS)	36	14%	16	6%
	TRA (time resolved X ray absorption)	33	12%	7	3%
	XMLD (X ray magnetic linear dichroism)	27	10%	14	5%
	XE (X ray emission)	26	10%	15	6%

	XMCD (X ray magnetic circular dichroism)	23	9%	28	11%
Inelastic scattering	RIXS (resonant inelastic X ray scattering)	20	8%	7	3%
	INS (nuclear inelastic scattering)	15	6%	4	2%
Imaging	XM (X ray microscopy)	74	28%	5	2%
	STXM (scanning transmission X ray microscopy)	62	23%	10	4%
	IRM (infrared microscopy)	41	15%	13	5%
	PEEM (photoemission microscopy)	40	15%	13	5%
	TRI (time resolved imaging)	29	11%	2	1%
	XT (hard X ray tomography)	25	9%	10	4%
	CDI (coherent diffraction imaging, holography, ptychography)	14	5%	2	1%
	MI (medical imaging)	13	5%	3	1%
	HI (high photon energy imaging)	12	5%	0	0%
Other	ID (instrumentation detectors and data acquisition/handling)	14	5%	12	5%
	XL (X ray lithography)	9	3%	0	0%
	AP (accelerator physics)	9	3%	1	0%
	IMO (instrumentation mechanics and optics)	7	3%	10	4%
	MT (medical therapy)	7	3%	0	0%

3.1. Diffraction, reflectivity and scattering

Most used techniques are: **PX** protein and macromolecular crystallography (**32%**), **CD** coherent diffraction, time correlation, spectroscopy, speckles, etc. (**31%**) and **PD** powder diffraction (**27%**) while less used techniques are: XSW X ray standing waves (1%), DS diffuse scattering (2%) and HED high energy diffraction (3%).

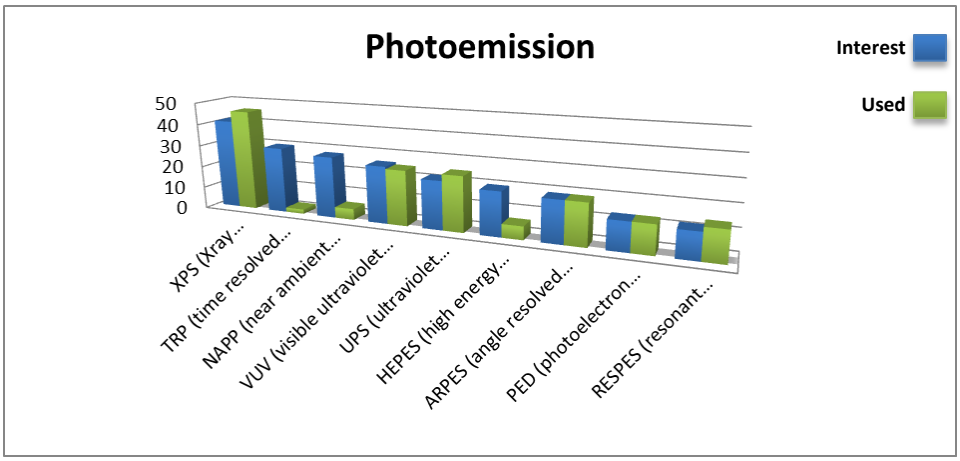
Techniques which arouse a bigger interest are: **SAXS** small angle x ray scattering (**34%**), **MD** microdiffraction (**25%**) and **TRD** time resolved diffraction, dynamics (**21%**).



3.2. Photoemission

Most used techniques inside this group are: **XPS** X Ray photoemission spectroscopy (**17%**), **VUV** (visible ultraviolet spectroscopy) (**9%**) and **UPS** (ultraviolet photoemission spectroscopy) (**9%**).

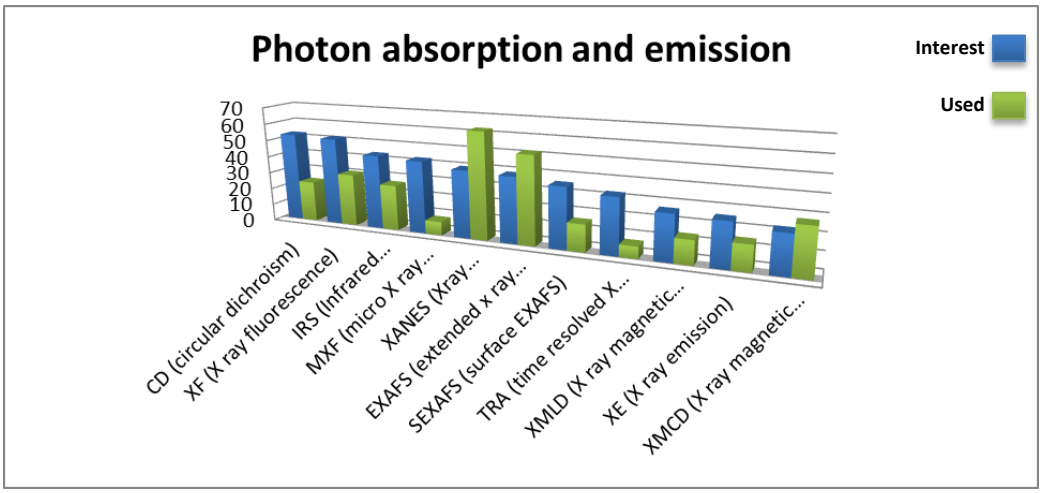
Most interesting techniques for respondents are: **XPS** X Ray photoemission spectroscopy (**15%**), **TRP** time resolved photoemission, dynamics (**11%**) and NAPP near ambient pressure photoemission (**11%**).



3.3. Photon absorption and emission

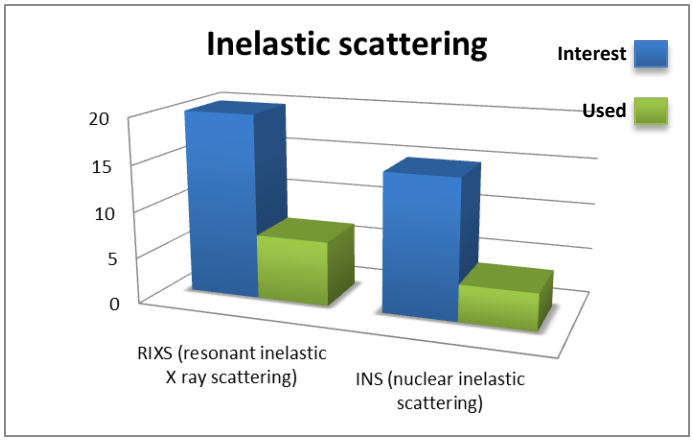
Inside the Photon absorption and emission techniques, the most used ones are: **XANES** X Ray absorption near edge structure (**24%**), **EXAFS** extended x ray absorption fine structure (**20%**) and **XF** X ray fluorescence (**12%**).

Respondents identified as more interesting the following techniques: **CD** (circular dichroism) (**20%**), **XF** (X ray fluorescence) (**20%**) and **IRS** infrared spectroscopy (**17%**).



3.4. Inelastic scattering

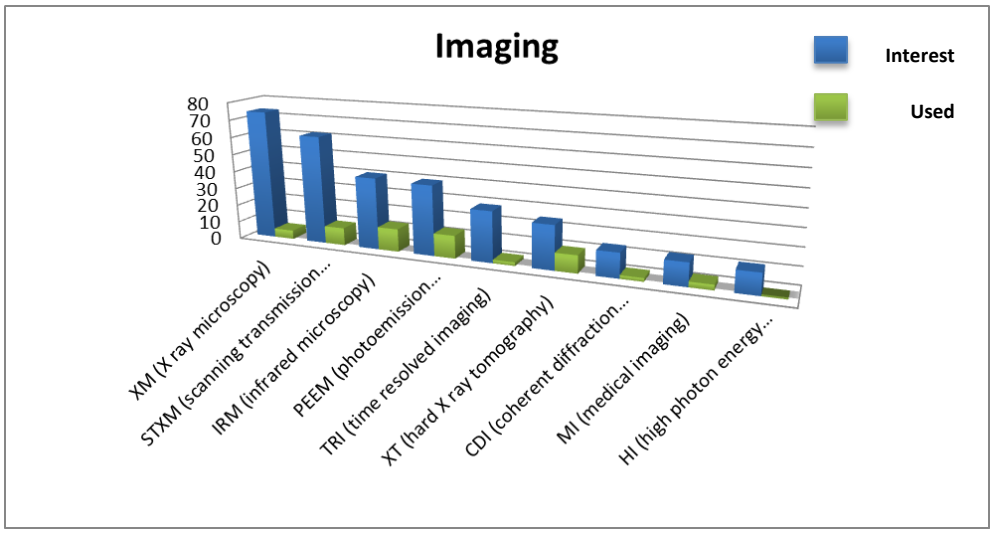
Inelastic scattering techniques were less valued by participants: only **8 %** of responses consider **RIXS** resonant inelastic X Ray scattering as an interesting technique. Besides, these techniques have been rarely used (only **2 %** and **3%**).



3.5. Imaging

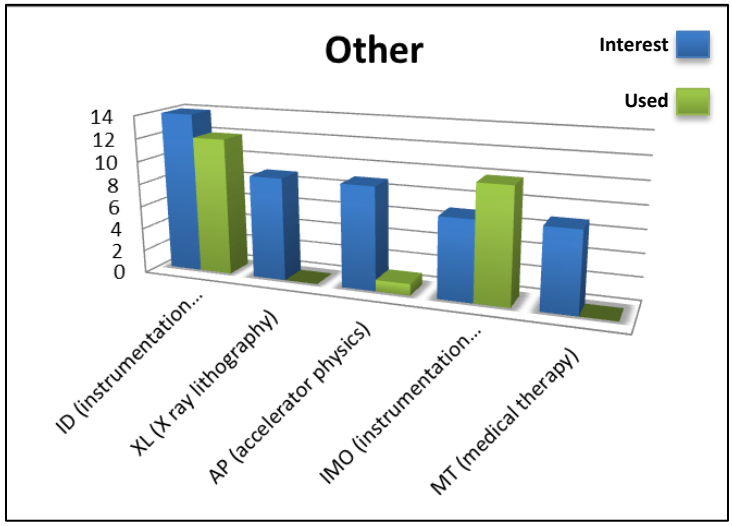
Although **XM** X Ray microscopy is being **rarely used** by respondents (only **2%**), this technique is considered to be the **most interesting of the Imaging techniques group (28%),** followed by **STXM** scanning transmission X ray microscopy (**23%**).

In general, all Imaging techniques have not been very **used**: **IRM** infrared microscopy and **PEEM** photoemission microscopy have been used for the **5 %** of the participants (each of them).



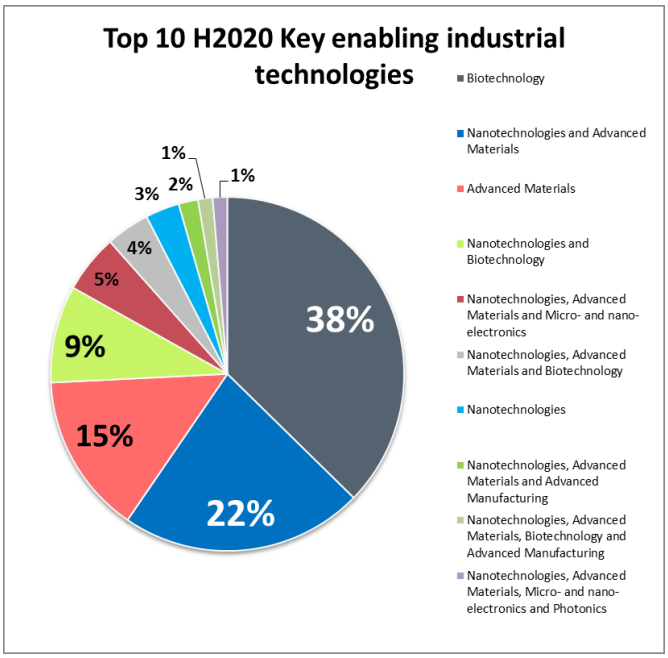
3.6. Other

This group of techniques **has not been used by the most of participants**. Only **5%** used **ID** instrumentation detectors and data acquisition/handling. The interest in these techniques is not very big as well: ID instrumentation detectors and data acquisition/handling is the bigger value (5%).

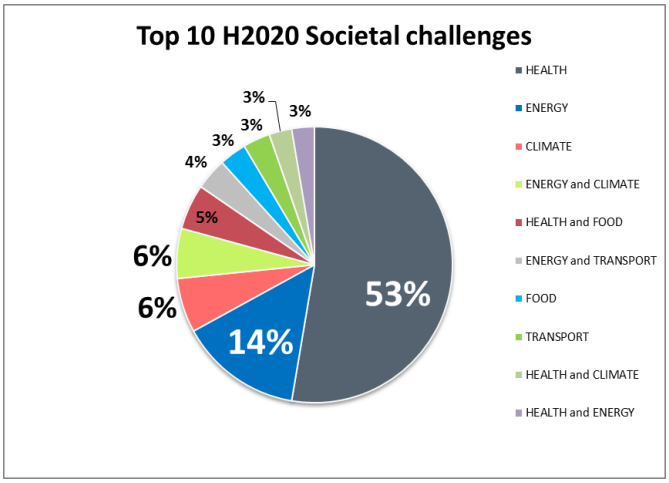


4. H2020: key enabling and industrial technologies and societal challenges

The survey respondents considered that their synchrotron-based research may contribute in the future to **Biotechnology (38%),** followed by **Nanotechnologies and Advanced Materials (22%).**



Regarding the social challenges that their research may overcome **health, demographic change and wellbeing i**s the most voted item (**53%**), followed by **secure, clean and efficient energy (14%)** and **climate action, resource efficiency and raw materials (6%)**.



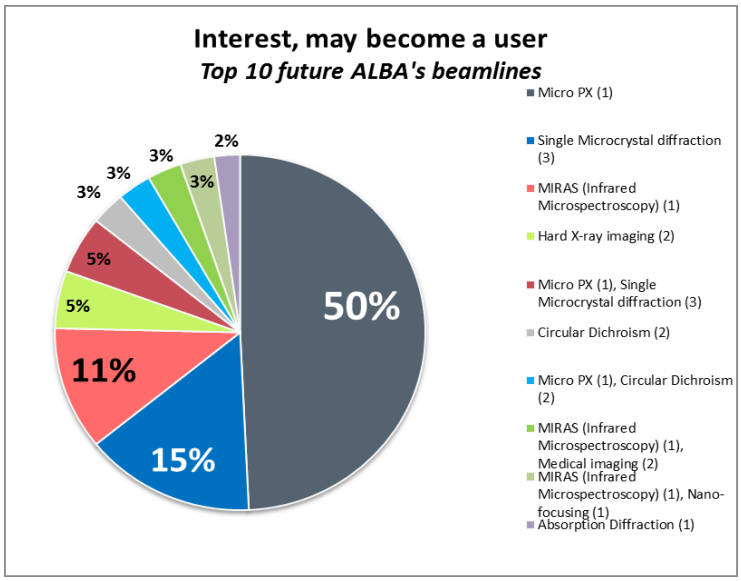
Key enabling industrial technologies	*combinations that have been most voted*
Biotechnology	84
Nanotechnologies and Advanced Materials	50
Advanced Materials	33
Nanotechnologies and Biotechnology	20
Nanotechnologies, Advanced Materials and Micro- and nano-electronics	12
Nanotechnologies, Advanced Materials and Biotechnology	9
Nanotechnologies	7
Nanotechnologies, Advanced Materials and Advanced Manufacturing	4
Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing	3
Nanotechnologies, Advanced Materials, Micro- and nano-electronics and Photonics	3
Nanotechnologies, Advanced Materials, Micro- and nano-electronics, Photonics, Biotechnology and Advanced Manufacturing	3
Nanotechnologies, Advanced materials and Photonics	2
Nanotechnologies, Advanced materials, Photonics and Biotechnology	2
Advanced Manufacturing	2
Advanced Materials, Advanced Manufacturing	2
Photonics	2
Nanotechnologies, Advanced Materials, Micro- and nano-electronics and Advanced Manufacturing	1
Nanotechnologies, Advanced Materials, Micro- and nano-electronics and Biotechnology	1
Nanotechnologies, Advanced Materials, Micro- and nano-electronics, Photonics and Advanced Manufacturing	1
Nanotechnologies, Photonics and Biotechnology	1
Advanced Materials, Biotechnology	1
Advanced Materials, Biotechnology and Advanced Manufacturing	1
Advanced Materials and Micro- and nano-electronics	1
Advanced Materials, Micro- and nano-electronics and Biotechnology	1
Advanced Materials, Photonics and Biotechnology	1
Micro- and nano-electronics	1
Photonics and Biotechnology	1

Societal challenge	combinations that have been most voted
HEALTH	99
ENERGY	27
CLIMATE	12
ENERGY and CLIMATE	11
HEALTH and FOOD	10
ENERGY and TRANSPORT	7
FOOD	6
TRANSPORT	6
HEALTH and CLIMATE	5
HEALTH and ENERGY	5
ENERGY, TRANSPORT and CLIMATE	4
FOOD, ENERGY and TRANSPORT	2
HEALTH, FOOD and CLIMATE	2
HEALTH, FOOD and ENERGY	2
HEALTH, ENERGY and TRANSPORT	2
CLIMATE and SOCIETIES	1
FOOD and CLIMATE	1
FOOD and ENERGY	1
FOOD, ENERGY and CLIMATE	1
HEALTH, FOOD and TRANSPORT	1
HEALTH, ENERGY and CLIMATE	1
HEALTH, ENERGY, CLIMATE and SECURITY	1
HEALTH and TRANSPORT	1
HEALTH, TRANSPORT and CLIMATE	1
ENERGY and SECURITY	1
TRANSPORT and CLIMATE	1

5. Future ALBA's beamlines

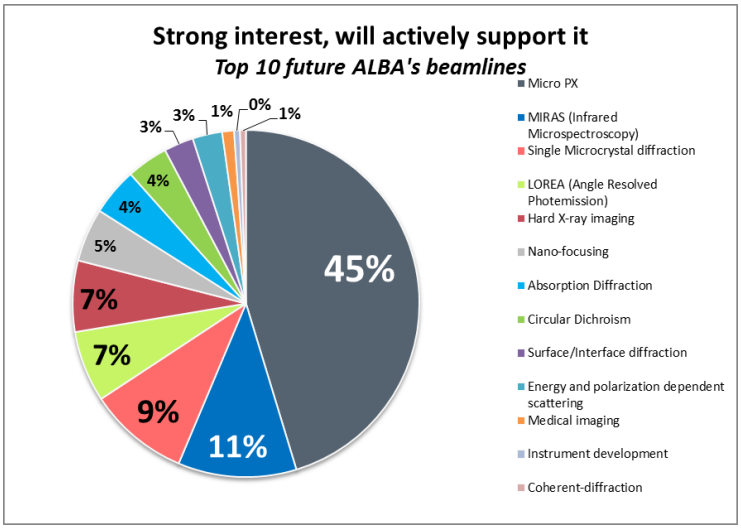
Participants clearly considered that the most interesting future beamline for ALBA should be a **Micro PX (50%),** followed by **Single Microcrystal diffraction (15%)** and **MIRAS Infrared Miscrospectroscopy (11%).**

See table below.

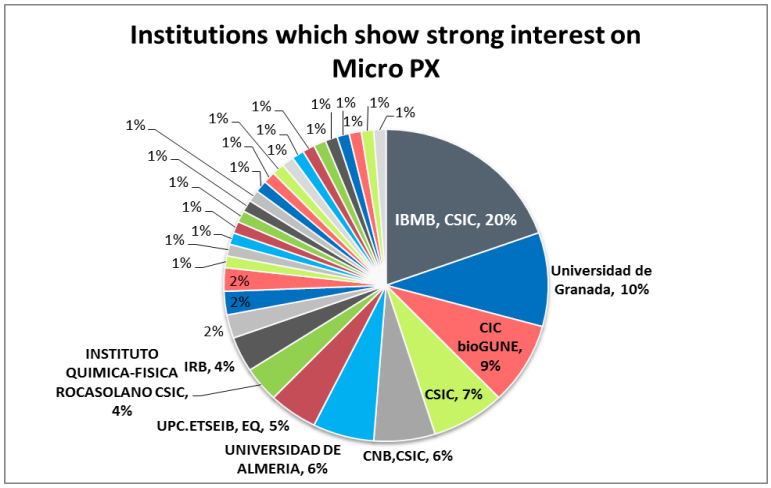


Respondents also chose **Micro PX (45%), MIRAS Infrared Miscrospectroscopy (11%) and Single Microcrystal diffraction (9%)** as beamlines that they will actively support, expressing a strong interest in them.

Strong interest, will actively support it	
Micro PX	82
MIRAS (Infrared Microspectroscopy)	20
Single Microcrystal diffraction	17
LOREA (Angle Resolved Photemission)	12
Hard X-ray imaging	12
Nano-focusing	9
Absorption Diffraction	8
Circular Dichroism	7
Surface/Interface diffraction	5
Energy and polarization dependent scattering	5
Medical imaging	2
Instrument development	1
Coherent-diffraction	1

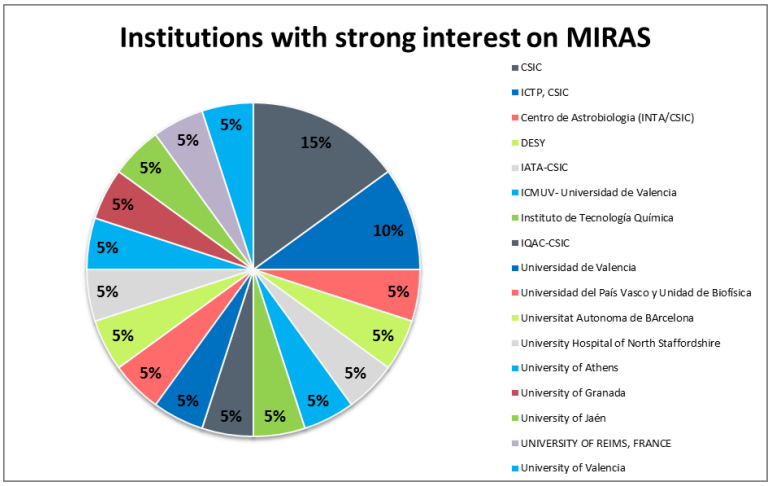


Half of the **institutions** who show **strong interest on Micro PX** are the **IBMB, CSIC (20%), University of Granada (10%), CIC bioGUNE (9%), other CSIC centres (7%) and CNB, CSIC (6%).**



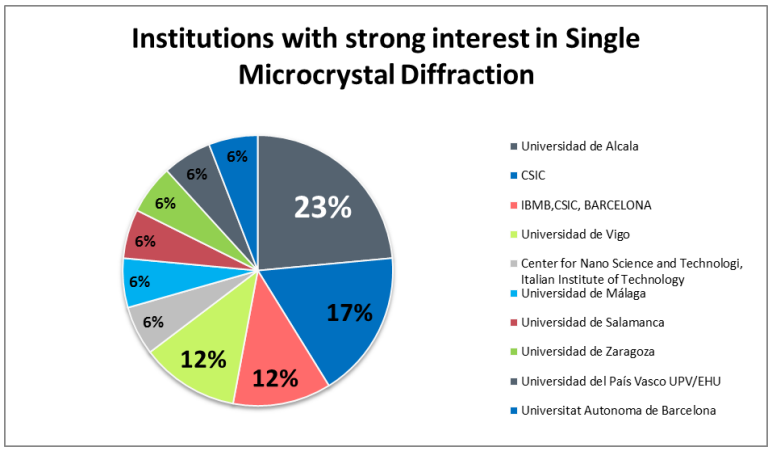
IBMB, CSIC	16
Universidad de Granada	8
CIC bioGUNE	7
CSIC	6
CNB,CSIC	5
UNIVERSIDAD DE ALMERIA	5
UPC.ETSEIB, EQ	4
INSTITUTO QUIMICA-FISICA ROCASOLANO CSIC	3
IRB	3
Instituto de Biomedicina de Valencia	2
Unidad de Biofisica (CSIC, UPV/EHU)	2
Universidade de Santiago de Compostela	2
ARIZONA STATE UNIVERSITY	1
CABD, Universidad Pablo de Olavide	1
CELLS	1
CIB-CSIC	1
CNIO	1
CNRS	1
IBB - UAB	1
Institute for Biomedical Research (IIB) Sant Pau	1
Instituto de Biología Molecular y Celular del Cáncer (CSIC-USAL)	1
Laboratorio de Estudios Cristalograficos, IACT-CSIC	1
UC- IBBTEC	1
UNIVERSIDAD DE CANTABRIA	1
Universidad de Zaragoza	1
Universidad Miguel Hernandez	1
Universitat Autònoma de Barcelona	1
Universitat Jaume I	1
University of Geneva	1
UPC - DEQ	1
UPC-MACROM	1

Strong interest on MIRAS is shared among different institutions: CSIC (15%), ICTP CSIC (10%), INTA CSIC (5%), DESY (5%),…



CSIC	3
ICTP, CSIC	2
Centro de Astrobiologia (INTA/CSIC)	1
DESY	1
IATA-CSIC	1
ICMUV- Universidad de Valencia	1
Instituto de Tecnología Química	1
IQAC-CSIC	1
Universidad de Valencia	1
Universidad del País Vasco y Unidad de Biofísica	1
Universitat Autonoma de BArcelona	1
University Hospital of North Staffordshire	1
University of Athens	1
University of Granada	1
University of Jaén	1
UNIVERSITY OF REIMS, FRANCE	1
University of Valencia	1

More than half of the **institutions** who show **strong interest on Single Microcrystal Diffraction** are the **Universidad de Alcalá (23%), CSIC centres (17%) and IMBB, CSIC (12%).**



Universidad de Alcala	**4**
CSIC	**3**
IBMB,CSIC, BARCELONA	**2**
Universidad de Vigo	**2**
Center for Nano Science and Technologi, Italian Institute of Technology	**1**
Universidad de Málaga	**1**
Universidad de Salamanca	**1**
Universidad de Zaragoza	**1**
Universidad del País Vasco UPV/EHU	**1**
Universitat Autonoma de Barcelona	**1**

Interest, may become a user	combinations that have been most voted
Micro PX (1)	66
Single Microcrystal diffraction (3)	20
MIRAS (Infrared Microspectroscopy) (1)	15
Hard X-ray imaging (2)	7
Micro PX (1), Single Microcrystal diffraction (3)	7
Circular Dichroism (2)	4
Micro PX (1), Circular Dichroism (2)	4
MIRAS (Infrared Microspectroscopy) (1), Medical imaging (2)	4
MIRAS (Infrared Microspectroscopy) (1), Nano-focusing (1)	4
Absorption Diffraction (1)	3
Circular Dichroism (2), Single Microcrystal diffraction (3)	3
LOREA (Angle Resolved Photoemission) (1), Circular Dichroism (2), Surface/Interface diffraction (2)	3
Micro PX (1), Circular Dichroism (2), Single Microcrystal diffraction (3)	3
MIRAS (Infrared Microspectroscopy) (1), Circular Dichroism (2)	3
MIRAS (Infrared Microspectroscopy) (1), Surface/Interface diffraction (2)	3
Nano-focusing (1), Absorption Diffraction (1), Surface/Interface diffraction (2)	3
Surface/Interface diffraction (2)	3
Absorption Diffraction (1), Coherent-diffraction (1), Single Microcrystal diffraction (3)	2
Absorption Diffraction (1), Surface/Interface diffraction (2)	2
Circular Dichroism (2), Surface/Interface diffraction (2)	2
Coherent-diffraction (1), Micro PX (1), Single Microcrystal diffraction (3)	2
Instrument development (1)	2
LOREA (Angle Resolved Photoemission) (1), Circular Dichroism (2)	2
LOREA (Angle Resolved Photoemission) (1), Surface/Interface diffraction (2)	2
MIRAS (Infrared Microspectroscopy) (1), Coherent-diffraction (1), Micro PX (1), Hard X-ray imaging (2), Circular Dichroism (2), Single Microcrystal diffraction (3)	2
Nano-focusing (1)	2
Nano-focusing (1), Micro PX (1)	2
Nano-focusing (1), Surface/Interface diffraction (2)	2
Absorption Diffraction (1), Circular Dichroism (2), Single Microcrystal diffraction (3), Energy and polarization dependent scattering (3)	1
Absorption Diffraction (1), Circular Dichroism (2), Surface/Interface diffraction (2)	1
Absorption Diffraction (1), Coherent-diffraction (1)	1
Absorption Diffraction (1), Coherent-diffraction (1), Circular Dichroism (2), Single Microcrystal diffraction (3), Energy and polarization dependent scattering (3)	1
Absorption Diffraction (1), Coherent-diffraction (1), Micro PX (1), Single Microcrystal diffraction (3)	1
Absorption Diffraction (1), Hard X-ray imaging (2)	1
Absorption Diffraction (1), Hard X-ray imaging (2), Circular Dichroism (2)	1
Absorption Diffraction (1), Surface/Interface diffraction (2), Single Microcrystal diffraction (3)	1
Coherent-diffraction (1)	1
Coherent-diffraction (1), Hard X-ray imaging (2)	1
Coherent-diffraction (1), Micro PX (1), Hard X-ray imaging (2), Circular Dichroism (2), Single Microcrystal diffraction (3)	1
Energy and polarization dependent scattering (3)	1
Hard X-ray imaging (2), Circular Dichroism (2)	1
Hard X-ray imaging (2), Medical imaging (2)	1
Instrument development (1), Coherent-diffraction (1), Hard X-ray imaging (2), Circular Dichroism (2), Surface/Interface diffraction (2), Single Microcrystal diffraction (3)	1
Instrument development (1), Hard X-ray imaging (2), Medical imaging (2)	1
Instrument development (1), LOREA (Angle Resolved Photoemission) (1)	1
Instrument development (1), LOREA (Angle Resolved Photoemission) (1), Single Microcrystal diffraction (3)	1
Instrument development (1), Micro PX (1), Circular Dichroism (2), Single Microcrystal diffraction (3)	1
Instrument development (1), Nano-focusing (1), Coherent-diffraction (1), Surface/Interface diffraction (2), Energy and polarization dependent scattering (3)	1
LOREA (Angle Resolved Photoemission) (1)	1
LOREA (Angle Resolved Photoemission) (1), Absorption Diffraction (1), Energy and polarization dependent scattering (3)	1
LOREA (Angle Resolved Photoemission) (1), Absorption Diffraction (1), Single Microcrystal diffraction (3),	1

Energy and polarization dependent scattering (3)	
LOREA (Angle Resolved Photoemission) (1), Circular Dichroism (2), Energy and polarization dependent scattering (3)	1
LOREA (Angle Resolved Photoemission) (1), Energy and polarization dependent scattering (3)	1
Medical imaging (2)	1
Micro PX (1), Hard X-ray imaging (2), Circular Dichroism (2)	1
Micro PX (1), Surface/Interface diffraction (2)	1
MIRAS (Infrared Microspectroscopy) (1), Absorption Diffraction (1), Coherent-diffraction (1)	1
MIRAS (Infrared Microspectroscopy) (1), Absorption Diffraction (1), Surface/Interface diffraction (2)	1
MIRAS (Infrared Microspectroscopy) (1), Hard X-ray imaging (2)	1
MIRAS (Infrared Microspectroscopy) (1), Instrument development (1), Nano-focusing (1), Coherent-diffraction (1)	1
MIRAS (Infrared Microspectroscopy) (1), LOREA (Angle Resolved Photoemission) (1)	1
MIRAS (Infrared Microspectroscopy) (1), LOREA (Angle Resolved Photoemission) (1), Coherent-diffraction (1), Hard X-ray imaging (2), Circular Dichroism (2), Surface/Interface diffraction (2), Single Microcrystal diffraction (3)	1
MIRAS (Infrared Microspectroscopy) (1), LOREA (Angle Resolved Photoemission) (1), Micro PX (1), Hard X-ray imaging (2), Surface/Interface diffraction (2)	1
MIRAS (Infrared Microspectroscopy) (1), LOREA (Angle Resolved Photoemission) (1), Surface/Interface diffraction (2)	1
MIRAS (Infrared Microspectroscopy) (1), Micro PX (1)	1
MIRAS (Infrared Microspectroscopy) (1), Micro PX (1), Circular Dichroism (2), Surface/Interface diffraction (2), Single Microcrystal diffraction (3)	1
MIRAS (Infrared Microspectroscopy) (1), Nano-focusing (1), Absorption Diffraction (1), Circular Dichroism (2), Surface/Interface diffraction (2), Single Microcrystal diffraction (3), Energy and polarization dependent scattering (3)	1
MIRAS (Infrared Microspectroscopy) (1), Nano-focusing (1), Absorption Diffraction (1), Coherent-diffraction (1)	1
MIRAS (Infrared Microspectroscopy) (1), Nano-focusing (1), Absorption Diffraction (1), Coherent-diffraction (1), Circular Dichroism (2), Surface/Interface diffraction (2), Energy and polarization dependent scattering (3)	1
MIRAS (Infrared Microspectroscopy) (1), Nano-focusing (1), Absorption Diffraction (1), Coherent-diffraction (1), Hard X-ray imaging (2), Single Microcrystal diffraction (3)	1
MIRAS (Infrared Microspectroscopy) (1), Nano-focusing (1), Circular Dichroism (2)	1
MIRAS (Infrared Microspectroscopy) (1), Nano-focusing (1), Circular Dichroism (2), Energy and polarization dependent scattering (3)	1
MIRAS (Infrared Microspectroscopy) (1), Nano-focusing (1), Coherent-diffraction (1), Hard X-ray imaging (2), Surface/Interface diffraction (2)	1
MIRAS (Infrared Microspectroscopy) (1), Nano-focusing (1), LOREA (Angle Resolved Photoemission) (1)	1
MIRAS (Infrared Microspectroscopy) (1), Nano-focusing (1), LOREA (Angle Resolved Photoemission) (1), Absorption Diffraction (1), Surface/Interface diffraction (2)	1
MIRAS (Infrared Microspectroscopy) (1), Nano-focusing (1), LOREA (Angle Resolved Photoemission) (1), Coherent-diffraction (1), Circular Dichroism (2), Single Microcrystal diffraction (3)	1
MIRAS (Infrared Microspectroscopy) (1), Nano-focusing (1), Surface/Interface diffraction (2)	1
MIRAS (Infrared Microspectroscopy) (1), Single Microcrystal diffraction (3)	1
Nano-focusing (1), Absorption Diffraction (1)	1
Nano-focusing (1), Absorption Diffraction (1), Hard X-ray imaging (2)	1
Nano-focusing (1), Absorption Diffraction (1), Hard X-ray imaging (2), Circular Dichroism (2), Single Microcrystal diffraction (3)	1
Nano-focusing (1), Absorption Diffraction (1), Micro PX (1), Single Microcrystal diffraction (3)	1
Nano-focusing (1), Circular Dichroism (2), Medical imaging (2)	1
Nano-focusing (1), LOREA (Angle Resolved Photoemission) (1), Circular Dichroism (2), Surface/Interface diffraction (2)	1
Nano-focusing (1), LOREA (Angle Resolved Photoemission) (1), Circular Dichroism (2), Surface/Interface diffraction (2), Single Microcrystal diffraction (3)	1
Nano-focusing (1), LOREA (Angle Resolved Photoemission) (1), Surface/Interface diffraction (2)	1
Nano-focusing (1), Surface/Interface diffraction (2), Energy and polarization dependent scattering (3)	1