

## PERSONAL INFORMATION

Jun Fujii

📍 S.S.14 Km163,5 in AREA Science Park Basovizza, 34149, Trieste, Italy

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✉ ...omissis...

Sex ...omissis... | Date of birth ...omissis... | Nationality ...omissis...

Enterprise	University	EPR
<input type="checkbox"/> Management Level	<input type="checkbox"/> Full professor	<input type="checkbox"/> Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
<input type="checkbox"/> Mid-Management Level	<input type="checkbox"/> Associate Professor	<input checked="" type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

## WORK EXPERIENCE

from Dic. 2008 to today

**Permanent Level III Technologist**

Istituto Officina dei Materiali del CNR (CNR - IOM), Trieste (Italy)

- One of the main scientific interest is to study electronic and geometrical structures of surfaces and interfaces by means of photoelectron spectroscopy using synchrotron radiation, STM and STS. The electronic and geometrical structures of magnetic materials are of particular interest.
- Another main interest is in developments, upgrades and installing of the apparatuses for keeping the equipments of our laboratory state of the arts, in order to carry out the investigation of interest.

*Business or sector: Research*

from Jul. 2003 to Dic. 2008

**Tenure Track Researcher**

Istituto Officina dei Materiali del CNR (CNR - IOM), Trieste (Italy)

*Business or sector: Research*

from Jul. 2001 to Jul. 2003

**Postdoctoral fellow**

Elettra, Sincrotrone Trieste S.C.p.A. (Italy)

*Business or sector: Research*

from Apr. 1994 to Jun. 2001

**Research Associate**

Gakushuin University, Tokyo (Japan)

*Business or sector: Research*

## EDUCATION AND TRAINING

from Apr. 1991 to Mar. 1994

**PhD Degree in Science (Physics)**

EQF level 8

University of Tsukuba (Japan)

- Doctoral thesis title : "Electronic Structures of Ferromagnetic Ni studies by Spin Resolved Photoelectron Spectroscopy"

Mar. 1991 Master Degree in Physics  
University of Tsukuba (Japan)

EQF level 7

Mar. 1989 Bachelor Degree in Physics  
Shinshu University (Japan)

EQF level 6

## PERSONAL SKILLS

Mother tongue(s) Japanese

Other language(s) English, proficiency Level: C1, Italian, proficiency Level: B2

### Job-related skills

- Knowledge of condensed matter physics, surface physics, and magnetism in particular electronic structure, surface and interface structure, magnetic structure, and material growth for metals, semiconductors, and organic molecules.
- Knowledge of various photoelectron spectroscopies (spin- and angle-resolved electron spectroscopy (Spin-ARPES), x-ray photoelectron spectroscopy (XPS), hard x-ray photoelectron spectroscopy (HAXPES), x-ray absorption spectroscopy (XAS), x-ray magnetic circular dichroism (XMCD), resonant photoelectron spectroscopy (RESPES)) with synchrotron radiation to investigate electronic and magnetic properties.
- Knowledge of electron spectroscopy (low energy electron diffraction (LEED), Auger electron spectroscopy, reflective high energy electron diffraction (RHEED)), and microscopy (scanning photoelectron microscopy (SPM), STM, atomic force microscope (AFM), scanning electron microscope (SEM), STS) to investigate surface structure.
- Knowledge of various magnetometries (magnetic optical Kerr effect (MOKE), vibration sample magnetometry (VSM), scanning electron microscopy with polarization analysis (SEMPA), magnetic force microscope (MFM)).
- Knowledge of ultra high vacuum (UHV), surface preparation in UHV, epitaxial sample growth by means of chemical vapour deposition (CVD) and molecular beam evaporation (MBE).
- Knowledge of synchrotron radiation source in particular undulator insertion device, and high resolution monochromator for the photon energy range for vacuum ultra violet (VUV), soft x-ray (SX), and hard x-ray.
- Knowledge of helium cryogenics for cooling of samples and optical elements.
- Experience in the design and realization of UHV setups (SEMPA, STM, Spin-ARPES).
- Experience in the maintenance and upgrade of synchrotron beamlines (APE-LE and APE-HE), UHV surface preparation section of APE, STM, and designing a new synchrotron beamline (APE-TX).
- Experience in the DFT band calculation with Quantum Espresso.

### Digital skills

- Knowledge of data analysis and data drawing software Igor (Wave Matrics) and the programming in Igor.
- Knowledge of C++ programming language.
- Knowledge of mechanical drawing with CAD.
- Knowledge of software (Spectra, Oasys and Reflec) for designing undulator and monochromator.
- Knowledge of the Latex and the Microsoft Office suite for producing scientific articles and presentations.

## ADDITIONAL INFORMATION

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SCOPUS 7103343743

Publications more than 170 refereed papers in international scientific journals  
 H index (August 2024) = 32 (source: Web of Science), 34 (source: Scopus), 40 (source: Google scholar)

Selected publications in peer-reviewed journals 2020-2024:

1. Sandeep Kumar Chaluvadi, Shyni Punathum Chalil, Anupam Jana, Deepak Dagur, Giovanni Vinai, Federico Motti, Jun Fujii, Moussa Mezhoud, Ulrike Lüders, Vincent Polewczyk, Ivana Vobornik, Giorgio Rossi, Chiara Bigi, Younghun Hwang, Thomas Olsen, Pasquale Orgiani and Federico Mazzola  
 "Uncovering the Lowest Thickness Limit for Room-Temperature Ferromagnetism of Cr<sub>1.6</sub>Te<sub>2</sub>"  
 Nano Lett. **24** 7601–7608 (2024)
2. Federico Mazzola, Wojciech Brzezicki, Maria Teresa Mercaldo, Anita Guarino, Chiara Bigi, Jill A. Miwa, Domenico De Fazio, Alberto Crepaldi, Jun Fujii, Giorgio Rossi, Pasquale Orgiani, Sandeep Kumar Chaluvadi, Shyni Punathum Chalil, Giancarlo Panaccione, Anupam Jana, Vincent Polewczyk, Ivana Vobornik, Changyoung Kim, Fabio Miletto-Granozio, Rosalba Fittipaldi, Carmine Ortix, Mario Cuoco and Antonio Vecchione  
 "Signatures of a surface spin-orbital chiral metal"  
 Nature **626** 752–758 (2024)
3. Takahiro Kobayashi, Yuichiro Toichi, Koichiro Yaji, Yoshitaka Nakata, Yuchi Yaoita, Mutsuki Iwaoka, Mariko Koga, Yituo Zhang, Jun Fujii, Shimpei Ono, Yasmine Sassa, Yasuo Yoshida, Yukio Hasegawa, Fumio KomoriShik, ShinSatoru Ichinokura, Ryota Akiyama, Shuji Hasegawa, Tatsuya Shishidou, Michael Weinert, Kazuyuki Sakamoto  
 "Revealing the Hidden Spin-Polarized Bands in a Superconducting TI Bilayer Crystal"  
 Nano Lett. **23** 7675–7682 (2023)
4. Domenico Di Sante, Chiara Bigi, Philipp Eck, Stefan Enzner, Armando Consiglio, Ganesh Pokharel, Pietro Carrara, Pasquale Orgiani, Vincent Polewczyk, Jun Fujii, Phil D. C. King, Ivana Vobornik, Giorgio Rossi, Ilija Zeljkovic, Stephen D. Wilson, Ronny Thomale, Giorgio Sangiovanni, Giancarlo Panaccione and Federico Mazzola  
 "Flat band separation and robust spin Berry curvature in bilayer kagome metals"  
 Nat. Phys. **19** 1135–1142 (2023)
5. Polina M. Sheverdyaeva, Conor Hogan, Gustav Bihlmayer, Jun Fujii, Ivana Vobornik, Matteo Jugovac, Asish K. Kundu, Sandra Gardonio, Zipporah Rini Benher, Giovanni Di Santo, Sara Gonzalez, Luca Petaccia, Carlo Carbone, Paolo Moras  
 "Giant and Tunable Out-of-Plane Spin Polarization of Topological Antimonene"  
 Nano Lett. **23** 6277–6283 (2023)
6. Atasi Chakraborty, Jun Fujii, Chia-Nung Kuo, Chin Shan Lue, Antonio Politano, Ivana Vobornik, and Amit Agarwal  
 "Observation of highly anisotropic bulk dispersion and spin-polarized topological surface states in CoTe<sub>2</sub>"  
 Phys. Rev. **B107** 085406 (2023)
7. Pierantozzi, Gian Marco and De Vita, Alessandro and Bigi, Chiara and Gui, Xin and Tien, Hung-Ju and Mondal, Debashis and Mazzola, Federico and Fujii, Jun and Vobornik, Ivana and Vinai, Giovanni and Sala, Alessandro and Africh, Cristina and Lee, Tien-Lin and Rossi, Giorgio and Chang, Tay-Rong and Xie, Weiwei and Cava, Robert J. and Panaccione, Giancarlo  
 "Evidence of magnetism-induced topological protection in the axion insulator candidate EuSn<sub>2</sub>P<sub>2</sub>"  
 PNAS, **119** e2116575119 (2022)
8. Vobornik, Ivana and Sarkar, Anan Bari and Zhang, Libo and Boukhvalov, Danil W. and Ghosh, Barun and Piliat, Lesia and Kuo, Chia-Nung and Mondal, Debashis and Fujii, Jun and Lue, Chin Shan and Vorokhta, Mykhailo and Xing, Huaizhong and Wang, Lin and Agarwal, Amit and Politano, Antonio  
 "Kitaite NiTeSe, an Ambient-Stable Layered Dirac Semimetal with Low-Energy Type-II Fermions with Application Capabilities in Spintronics and Optoelectronics"  
 Adv. Funct. Mater., **31** 2106101 (2021)
9. Fujii, Jun and Ghosh, Barun and Vobornik, Ivana and Sarkar, Anan Bari and Mondal, Debashis and Kuo, Chia-Nung and Bocquet, Francois C. and Zhang, Lixue and Boukhvalov, Danil W. and Lue, Chin Shan and Agarwal, Amit and Politano, Antonio  
 "Mitrofanovite Pt<sub>3</sub>Te<sub>4</sub>: A Topological Metal with Termination-Dependent Surface Band Structure and Strong Spin Polarization"  
 ACS Nano, **15** 14786-14793 (2021)
10. Vinai G., Motti F., Petrov A.Yu, Polewczyk V., Bonanni V., Edla R., Gobaut R., Fujii J., Suran F., Benedetti D., Salvador F., Fondacaro A., Rossi G., Panaccione G., Davidson B.A., Torelli P.

"An integrated ultra-high vacuum apparatus for growth and in situ characterization of complex materials"  
Rev. Sci. Instrum. **91** 085109 (2020)