



UNIVERSITY: Public University of Navarre (UPNA)

WIT PROGRAMME'S RESEARCH LINE NAME:

RF/Microwave devices for satellite communications by 3D printing

DOCTORAL PROGRAMME: Doctorate in Communications Technology, Bioengineering and Renewable Energies <https://www.unavarra.es/escuela-doctorado/doctorate-programs/current-plan/engineering-and-architecture/doctorate-in-communications-technology-bioengineering-and-renewable-energies?languageId=1>

COMPLETE DESCRIPTION OF THE LINE

Due to the economic limitation in terms of the cost of each gram launched in a satellite, it is important that the components are as compact and low weight as possible. In this way, additive manufacturing techniques are becoming increasingly important in the space sector, due to their ability to reduce weight, since they allow a greater degree of freedom in the development of components, allowing very complex shapes that cannot be achieved easily by conventional manufacturing techniques. In addition, additive manufacturing allows improving the PIM (Passive Intermodulation) products of RF / Microwave components since it allows a drastic reduction in the number of flanges and screws required, improving this important parameter that can be critical in components designed for satellite communications.

RESEARCH GROUP NAME:

Antenna Group



COORDINATOR:

- Last and first name; link to the “Portal of scientific production”:
Teniente, Jorge
https://academicos.unavarra.es/CawDOS//jsf/seleccionActividades/seleccionActividades.jsf?id_pers=2694&idioma=es&elmeucv=N
- Department: Department of Electrical, Electronic and Communications Engineering
- Email: jorge.teniente@unavarra.es
- Telephone number: (+34) 948 16 6040

MEMBERS OF THE LINE RESEARCH:

- Beruete Díaz, Miguel
- Biurrun Quel, Carlos
- Del Río Bocio, Carlos
- Eterra Urzainqui, Íñigo
- Iriarte Galarregui, Juan Carlos
- Jauregui Lopez, Irati
- Liberal Olleta, Iñigo
- Pérez Escudero, José Manuel
- Pérez Quintana, Dayan
- Teniente Vallinas, Jorge
- Torres García, Alicia Elena

ANOTHER RESEARCH LINES OF THE GROUP: list of them

- Antennas
- Metamaterials and periodic structures
- THz technology and applications
- Quantum technologies
- Sensing



- Thermal emission
- Microfabrication

- Entities involved in research lines and contact person:

- ✓ Academic entities:
 - KTH-Royal Institute of Technology, Sweden (Prof. O. Quevedo, oscarqt@kth.se)
 - Nazarbayev University, Kazakhstan (Prof. B. Orazbayev, bakhtiyar.oralbayev@nu.edu.kz)
 - Newcastle University, UK (Prof. V. Pacheco-Peña, Victor.Pacheco-Pena@newcastle.ac.uk)
 - Novosibirsk State University, Russia (Prof. S. Kuznetsov, SAKuznetsov@nsm.nsu.ru)
 - University of Duisburg-Essen, Germany (Prof. A. Stöhr, andreas.stoehr@uni-due.de)
 - University of Pennsylvania, USA (Prof. N. Engheta, engheta@ee.upenn.edu)
 - University of Rennes 1, France (Prof. R. Suleau, ronan.sauleau@univ-rennes1.fr)
 - University of Siegen, Germany (Prof. P. Haring, peter.haring@uni-siegen.de)
 - University of Siena, Italy (Prof. S. Maci, macis@dii.unisi.it)
 - University of Technology Sydney, Australia (Prof. R.W. Ziolkowski, Richard.Ziolkowski@uts.edu.au)
 - University of Birmingham, UK (Prof. M. Navarro, m.navarro-cia@bham.ac.uk)
 - Universidad Carlos III de Madrid, Spain (Prof. D. Segovia, dani@tsc.uc3m.es)
 - TECNUN, Spain (Prof. R. Berenguer, rberenguer@tecnun.es)



✓ Industrial entities:

- Anteral S.L. ([ltziar Maestrojuan imaestrojuan@anteral.com](mailto:ltziar.Maestrojuan@anteral.com))
- Tafco Metawireless (www.tafcomw.com)
- Expace on Board Systems (Rubén García r.garcia@expa.net)
- Centro Nacional de Energías Renovables, CENER (Jaione Bengoetxea Apezteguia, jbapezteguia@cener.com)
- NAITEC (Javier Bravo, jbravo@naitec.es)
- Asociación de la Industria Navarra, AIN (Pilar Herrera, pherrera@ain.es)

▪ Brief group overview

UPNA's Antenna Group has been actively working on different areas of applied electromagnetics for more than 20 years. During these years, it has become a world reference group in metamaterials and nanophotonics, as well as in other areas of applied electromagnetics, such as terahertz technology and corrugated horn antennas.

The group has 6 permanent members, 1 Ramón y Cajal fellow, 4 Post-Docs and 8 PhD students. During the last decade the group averages yearly more than 18 journal publications and attracts funds over 500.000 € per year from public and private sources. Out of these, the group is currently involved in 4 international research projects, among them projects ERC-2020-STG-948504 (ERC Starting Grant), H2020-FETOPEN-964450 and H2020-MSCA-ITN-2019-MENLAOS^{NT}.

Its state-of-the-art facilities for manufacturing and test comprise an ISO-7 clean room for microfabrication and test equipment from RF to the IR, including the THz range.



<http://www.unavarra.es/antennas-group>

- Link of the group to the “Portal of scientific production”
<https://academicos.unavarra.es/CawDOS/?id=90701b928ac24ad4&idoma=es&tipo=actGrupo>

REQUIRED QUALIFICATIONS: Technology, Physics, Engineering

Knowledge of Electromagnetics. Familiar with radiofrequency communications circuits and components.