



Albert Redo-Sanchez, PhD

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■ PROFILE

Albert Redo-Sanchez is a Professor at the Universidad de Zaragoza and a member of the Graphics and Imaging Lab, where he works on non-line-of-sight and transient imaging: reconstructing scenes that are hidden from direct view. His career spans academia and industry, from research at the MIT Media Lab, Rensselaer Polytechnic Institute and the University of Barcelona to leading terahertz technology at das-Nano, business development at Zomega Terahertz Corporation and optical design at Brelyon. He has authored 21 journal papers and is an inventor on 18 patents.

■ RESEARCH AREAS

Non-line-of-sight (NLOS) imaging

Transient imaging

Computer vision and machine learning

Modeling and simulation

Terahertz technology

Non-destructive testing

■ EXPERIENCE

Professor · Universidad de Zaragoza

Mar. 2021 – present

Graphics and Imaging Lab · Zaragoza, Spain

- Co-principal investigator in project ENLIGHTEN by the [European Defence Fund](#)
- Cohesive framework for non-line-of-sight imaging based on Dirac notation
- Non-line-of-sight imaging in the presence of scattering media using phasor fields (paper [here](#))

Research Scientist · Brelyon

Feb. 2021 – Sep. 2023

Remote

- Patent ideation and writing
- Optical design and simulation

Scientist II · Lynntech

Nov. 2018 – Jan. 2020

College Station TX, United States

- Led machine-learning research for non-destructive testing and defence applications
- Built adversarial attacks in TensorFlow and PyTorch against production image detectors and classifiers
- Principal investigator of two 2019 SBIR Phase I awards: U.S. Air Force (\$150k) and NASA (\$125k)

Director of Terahertz Technology · das-Nano

Apr. 2016 – Nov. 2019

Pamplona, Spain

- **IRYS**: non-contact multi-layer thickness measurement for the automotive industry
- **NOTUS**: system for multi-layer thickness and adherence characterization of composite structures
- **ONYX**: system for 2D materials characterization for the semiconductor and materials research

Research Scientist · Massachusetts Institute of Technology

Sep. 2014 – Feb. 2016

MIT Media Lab · Cambridge MA, United States

- Researched and developed the reading through a closed book proof of concept
- Researched and developed new algorithms for analyzing time-domain volumetric data
- Designed compact optical devices for portable eye diagnosis applications
- Wrote research grants and mentored Ph.D. students

Director of Business Development · Zomega Terahertz Corporation

Nov. 2011 – May 2014

East Greenbush NY, United States

- Non-destructive testing applications with terahertz technology
- Prototypes to validate proof of concept applications
- Customers' needs and requirements collection and analysis

Research Assistant Professor · Rensselaer Polytechnic Institute

Jul. 2010 – Nov. 2011

Aug. 2004 – Aug. 2008

Troy NY, United States

- Invented a method to analyze terahertz spectra without the need of a reference
- Developed an ultrafast scanner for a fast terahertz imaging
- Developed a portable system for the non-destructive inspection of the Space Shuttle insulation
- Researched non-destructive testing applications with terahertz technology
- Researched statistical and machine-learning algorithms for spectral analysis
- Wrote research proposals and supervised Ph.D. students

Postdoctoral Associate · University of Barcelona

Nov. 2009 – Jul. 2010

Barcelona, Spain

- Researched the application of terahertz imaging technology for cultural heritage inspection
- Researched terahertz spectroscopy for pharmaceutical applications
- Established a laboratory for terahertz technology research

Project Manager · Leitat Technological Center

Sep. 2008 – Oct. 2009

European Project Office · Terrassa, Spain

R&D and IT Manager · ASM-Dimatec Ingeniería

Dec. 2001 – Jul. 2004

Reus, Spain

- Developed a microwave adhesive quality-control device
- Developed a robotic positioning system for automated windshield insertion (PCT/ES2004/000248)
- Co-led the European IDA-STEP project

■ EDUCATION

PhD in Applied Physics · University of Barcelona

2004

Barcelona, Spain

■ SKILLS

Code and data processing: Python, C/C++, Matlab, Mathematica, LabView

Design: Zemax, SolidWorks, Fusion360, VRED

Research: Experiment design, execution, data modeling, analysis and reporting; proof-of-concept experiments and prototyping up to a minimum viable product (MVP)

Management: Project planning, execution and supervision; proposal writing and funding

Sales and business development: Customer requirements collection and analysis; relationships with distributors; commercial product development

■ PUBLICATIONS AND PATENTS

18 journal papers have been published in journals indexed in Clarivate Journal Citation Reports (JCR). 13 of them (72%) are in Q1 journals and the other 5 in Q2 journals. Journals include Nature Communications (IF 12.124), Optica (IF 7.727), Scientific Reports, Optics Express, Optics Letters, Analyst and IEEE Transactions on Microwave Theory and Techniques. The cumulative impact factor is 70.0, with an average of 3.9 per paper. Five of the Q1 papers are first-authored. Each figure uses the JCR edition for the paper's year of publication and the journal's best-ranked category.

Journal papers

1. Chu, V., Pueyo-Ciudad, O., Tseng, E., Schiffers, F., Kuo, G., Matsuda, N., **Redo-Sanchez, A.**, Lanman, D., Cossairt, O., & Heide, F. (2025). Artifact-resilient real-time holography. *ACM Transactions on Graphics*, 44(6), 219. doi: [10.1145/3763361](https://doi.org/10.1145/3763361)
2. **Redo-Sanchez, A.**, Luesia-Lahoz, P., Gutierrez, D., & Muñoz, A. (2024). Cohesive framework for non-line-of-sight imaging based on Dirac notation. *Optics Express*, 32(6), 10505–10526. doi: [10.1364/oe.518466](https://doi.org/10.1364/oe.518466)
JCR 2024 · IF 3.3 · Q2 · Optics
3. Luesia, P., Crespo, M., Jarabo, A., & **Redo-Sanchez, A.** (2022). Non-line-of-sight imaging in the presence of scattering media using phasor fields. *Optics Letters*, 47(15), 3796–3799. doi: [10.1364/ol.463296](https://doi.org/10.1364/ol.463296)
JCR 2022 · IF 3.6 · Q2 · Optics
4. Melios, C., Huang, N., Callegaro, L., Centeno, A., Cultrera, A., Cordon, A., Panchal, V., Arnedo, I., **Redo-Sanchez, A.**, Etayo, D., Fernandez, M., Lopez, A., Rozhko, S., Txoperena, O., Zurutuza, A., & Kazakova, O. (2020). Towards standardisation of contact and contactless electrical measurements of CVD graphene at the macro-, micro- and nano-scale. *Scientific Reports*, 10(1), 3223. doi: [10.1038/s41598-020-59851-1](https://doi.org/10.1038/s41598-020-59851-1)
JCR 2020 · IF 4.379 · Q1 · Multidisciplinary Sciences
5. Cultrera, A., Serazio, D., Zurutuza, A., Centeno, A., Txoperena, O., Etayo, D., Cordon, A., **Redo-Sanchez, A.**, Arnedo, I., Ortolano, M., & Callegaro, L. (2019). Mapping the conductivity of graphene with Electrical Resistance Tomography. *Scientific Reports*, 9(1), 10655. doi: [10.1038/s41598-019-46713-8](https://doi.org/10.1038/s41598-019-46713-8)
JCR 2019 · IF 3.998 · Q1 · Multidisciplinary Sciences
6. Mackenzie, D. M. A., Whelan, P. R., Bøggild, P., Jepsen, P. U., **Redo-Sanchez, A.**, Etayo, D., Fabricius, N., & Petersen, D. H. (2018). Quality assessment of terahertz time-domain spectroscopy transmission and reflection modes for graphene conductivity mapping. *Optics Express*, 26(7), 9220–9229. doi: [10.1364/oe.26.009220](https://doi.org/10.1364/oe.26.009220)
JCR 2018 · IF 3.561 · Q1 · Optics
7. Heshmat, B., Andrews, G. M., Naranjo-Montoya, O. A., Castro-Camus, E., Ciceri, D., **Redo-Sanchez, A.**, Allanore, A., Kmetz, A. A., Eichmann, S. L., Poitzsch, M. E., & Raskar, R. (2017). Terahertz scattering and water absorption for porosimetry. *Optics Express*, 25(22), 27370–27385. doi: [10.1364/oe.25.027370](https://doi.org/10.1364/oe.25.027370)
JCR 2017 · IF 3.356 · Q1 · Optics
8. Aghasi, A., Heshmat, B., **Redo-Sanchez, A.**, Romberg, J., & Raskar, R. (2016). Sweep distortion removal from terahertz images via blind demodulation. *Optica*, 3(7), 754–762. doi: [10.1364/optica.3.000754](https://doi.org/10.1364/optica.3.000754)
JCR 2016 · IF 7.727 · Q1 · Optics
9. **Redo-Sanchez, A.**, Heshmat, B., Aghasi, A., Naqvi, S., Zhang, M., Romberg, J., & Raskar, R. (2016). Terahertz time-gated spectral imaging for content extraction through layered structures. *Nature Communications*, 7(1), 12665. doi: [10.1038/ncomms12665](https://doi.org/10.1038/ncomms12665)
JCR 2016 · IF 12.124 · Q1 · Multidisciplinary Sciences
10. Lopez-Dominguez, V., Boix-Montañas, A., **Redo-Sanchez, A.**, & Tejada-Palacios, J. (2016). Direct estimation of the permeation of topical excipients through artificial membranes and human skin with non-invasive Terahertz time-domain techniques. *Journal of Pharmacy and Pharmacology*, 68(7), 873–882. doi: [10.1111/jphp.12553](https://doi.org/10.1111/jphp.12553)
11. **Redo-Sanchez, A.**, Laman, N., Schulkin, B., & Tongue, T. (2013). Review of Terahertz Technology Readiness Assessment and Applications. *Journal of Infrared, Millimeter, and Terahertz Waves*, 34(9), 500–518. doi: [10.1007/s10762-013-9998-y](https://doi.org/10.1007/s10762-013-9998-y)
JCR 2013 · IF 1.891 · Q2 · Engineering, Electrical & Electronic
12. Seco-Martorell, C., López-Domínguez, V., Arauz-Garofalo, G., **Redo-Sanchez, A.**, Palacios, J., & Tejada, J. (2013). Goya's artwork imaging with Terahertz waves. *Optics Express*, 21(15), 17800. doi: [10.1364/oe.21.017800](https://doi.org/10.1364/oe.21.017800)
JCR 2013 · IF 3.525 · Q1 · Optics
13. Riley, M., **Redo-Sanchez, A.**, Karampouriotis, P., Plawsky, J., & Lu, T.-M. (2012). Nanostructured porous silicon films for terahertz optics. *Nanotechnology*, 23(32), 325301. doi: [10.1088/0957-4484/23/32/325301](https://doi.org/10.1088/0957-4484/23/32/325301)
JCR 2012 · IF 3.842 · Q1 · Physics, Applied

14. **Redo-Sanchez, A.**, Salvatella, G., Galceran, R., Roldós, E., García-Reguero, J.-A., Castellari, M., & Tejada, J. (2011). Assessment of terahertz spectroscopy to detect antibiotic residues in food and feed matrices. *Analyst*, 136(8), 1733–1738. doi: [10.1039/c0an01016b](https://doi.org/10.1039/c0an01016b)
JCR 2011 · IF 4.230 · Q1 · Chemistry, Analytical
15. **Redo-Sanchez, A.**, & Zhang, X.-C. (2011). Self-referenced method for terahertz wave time-domain spectroscopy. *Optics Letters*, 36(17), 3308. doi: [10.1364/ol.36.003308](https://doi.org/10.1364/ol.36.003308)
JCR 2011 · IF 3.399 · Q1 · Optics
16. **Redo-Sanchez, A.**, Kaur, G., Zhang, X.-C., Buersegens, F., & Kersting, R. (2009). 2-D Acoustic Phase Imaging with Millimeter-Wave Radiation. *IEEE Transactions on Microwave Theory and Techniques*, 57(3), 589–593. doi: [10.1109/tmtt.2009.2013306](https://doi.org/10.1109/tmtt.2009.2013306)
JCR 2009 · IF 2.076 · Q1 · Engineering, Electrical & Electronic
17. Song, Q., Zhao, Y., **Redo-Sanchez, A.**, Zhang, C., & Liu, X. (2009). Fast continuous terahertz wave imaging system for security. *Optics Communications*, 282(10), 2019–2022. doi: [10.1016/j.optcom.2009.02.019](https://doi.org/10.1016/j.optcom.2009.02.019)
JCR 2009 · IF 1.316 · Q2 · Optics
18. **Redo-Sanchez, A.**, & Zhang, X.-C. (2008). Terahertz Science and Technology Trends. *IEEE Journal of Selected Topics in Quantum Electronics*, 14(2), 260–269. doi: [10.1109/jstqe.2007.913959](https://doi.org/10.1109/jstqe.2007.913959)
JCR 2008 · IF 2.518 · Q1 · Optics
19. Zhong, H., **Redo-Sanchez, A.**, & Zhang, X.-C. (2007). Standoff Sensing and Imaging of Explosive Related Chemical and Bio-Chemical Materials Using THz-TDS. *International Journal of High Speed Electronics and Systems*, 17(02), 239–249. doi: [10.1142/s0129156407004461](https://doi.org/10.1142/s0129156407004461)
20. Zhong, H., **Redo-Sanchez, A.**, & Zhang, X.-C. (2006). Identification and classification of chemicals using terahertz reflective spectroscopic focal-plane imaging system. *Optics Express*, 14(20), 9130. doi: [10.1364/oe.14.009130](https://doi.org/10.1364/oe.14.009130)
JCR 2006 · IF 4.009 · Q1 · Optics (ranked 1/55)
21. **Redo-Sanchez, A.**, Tejada, J., & Bohigas, X. (2006). Bubble Detector in Polyurethane Applications Based on a Microwave System. *IEEE Sensors Journal*, 6(4), 939–944. doi: [10.1109/jsen.2006.877999](https://doi.org/10.1109/jsen.2006.877999)
JCR 2006 · IF 1.117 · Q2 · Instruments & Instrumentation

Conference papers

1. Pueyo-Ciudad, O., Enguita-Lahoz, G., Moon, Y., Maeda, R., Baek, S.-H., **Redo-Sanchez, A.**, & Gutierrez, D. (2026). Transient polarimetry. *SIGGRAPH 2026 Posters*, 1–3. Association for Computing Machinery.
2. Christnacher, F., Laurenzis, M., Schertzer, S., Spaett, A., **Redo-Sanchez, A.**, & Gutierrez, D. (2025). Influence of some acquisition parameters in non-line-of-sight imaging. *Emerging Technologies and Materials for Security and Defence 2025*. doi: [10.1117/12.3069294](https://doi.org/10.1117/12.3069294)
3. Pueyo-Ciudad, O., Marco, J., Schertzer, S., Christnacher, F., Laurenzis, M., Gutierrez, D., & **Redo-Sanchez, A.** (2024). Time-Gated Polarization for Active Non-Line-Of-Sight Imaging. *SIGGRAPH Asia 2024 Conference Papers*, 1–11. Tokyo, Japan: Association for Computing Machinery. doi: [10.1145/3680528.3687575](https://doi.org/10.1145/3680528.3687575)
4. Cordon, A., Miranda, L., Martinez, C., Ines, A., Etayo, D., Fernandez, M., Rodriguez, P., Taboada, E., **Redo-Sanchez, A.**, Castrillo, M., Laso, M. A. G., & Arnedo, I. (2019). THz to Inspect Graphene and Thin Film Materials. 2019 44th International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz). doi: [10.1109/irmmw-thz.2019.8874447](https://doi.org/10.1109/irmmw-thz.2019.8874447)
5. Callegaro, L., Cassiagio, C., Cultrera, A., D'Elia, V., Serazio, D., Ortolano, M., Marzano, M., Kazakova, O., Melios, C., Raso, F., Matias, L., Zurutuza, A., Centeno, A., **Redo-Sanchez, A.**, Kretinin, A., Sann-Ferro, K., Fabricius, A., Weking, G., Bergholz, W., & Fabricius, N. (2018). GRACE: Developing Electrical Characterisation Methods for Future Graphene Electronics. 2018 Conference on Precision Electromagnetic Measurements (CPEM 2018). doi: [10.1109/cpem.2018.8501012](https://doi.org/10.1109/cpem.2018.8501012)
6. Satat, G., Heshmat, B., Naik, N., **Redo-Sanchez, A.**, & Raskar, R. (2016). Advances in ultrafast optics and imaging applications. *Ultrafast Bandgap Photonics, Proc. SPIE 9835*, 98350Q. doi: [10.1117/12.2222438](https://doi.org/10.1117/12.2222438)
7. **Redo-Sanchez, A.**, Laman, N., Schulkin, B., & Tongue, T. (2014). Non-destructive imaging with compact and portable terahertz systems. *AIP Conference Proceedings*, 1581(1), 1583–1587. doi: [10.1063/1.4865012](https://doi.org/10.1063/1.4865012)

8. **Redo-Sanchez, A.**, Laman, N., Schulkin, B., & Tongue, T. (2013). Compact, portable Terahertz systems for on-site inspection applications. 2013 38th International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz). doi: [10.1109/irmmw-thz.2013.6665510](https://doi.org/10.1109/irmmw-thz.2013.6665510)
9. Ferrer-Mico, T., Prats-Fernàndez, M. À., & **Redo-Sanchez, A.** (2012). Impact of Scratch programming on students' understanding of their own learning process. *Procedia - Social and Behavioral Sciences (WCES 2012)*, 46, 1219–1223. doi: [10.1016/j.sbspro.2012.05.278](https://doi.org/10.1016/j.sbspro.2012.05.278)
10. Zhang, J., Zhang, X.-C., & **Redo-Sanchez, A.** (2012). THz Polarization-Dependent Imaging of Nuclear Graphite. *Frontiers in Optics*.
11. Song, Q., **Redo-Sanchez, A.**, Zhao, Y., & Zhang, C. (2008). High speed imaging with CW THz for security. 2008 International Conference on Optical Instruments and Technology: Optoelectronic Measurement Technology and Applications, Proc. SPIE 7160, 716016. doi: [10.1117/12.807197](https://doi.org/10.1117/12.807197)
12. Zeng, G., Zhang, X.-C., **Redo-Sanchez, A.**, & Embrechts, M. J. (2007). Independent Component Analysis for Separating Water Vapor Spectrum from Terahertz Spectra. *Intelligent Engineering Systems Through Artificial Neural Networks*, 585–591. doi: [10.1115/1.802655.paper92](https://doi.org/10.1115/1.802655.paper92)
13. **Redo-Sanchez, A.**, Karpowicz, N., & Zhang, X.-C. (2006). Sensing and Imaging with Continuous-Wave Terahertz Systems. *AIP Conference Proceedings*, 820(1), 508–514. doi: [10.1063/1.2184570](https://doi.org/10.1063/1.2184570)
14. Zhong, H., Karpowicz, N., **Redo-Sanchez, A.**, Li, X., Wang, S. H., Ferguson, B., & Zhang, X.-C. (2006). Terahertz Wave Imaging Technology. 4th World Congress on Industrial Process Tomography.
15. Zeng, G., Embrechts, M., **Redo-Sanchez, A.**, Han, L., & Zhang, X.-C. (2006). Independent component analysis for materials identification from terahertz spectra. *Intelligent Engineering Systems Through Artificial Neural Networks*, 16.
16. Zhong, H., **Redo-Sanchez, A.**, Chen, Y., & Zhang, X.-C. (2006). THz wave standoff detection of explosive materials. *Terahertz for Military and Security Applications IV*, Proc. SPIE 6212, 62120L. doi: [10.1117/12.665360](https://doi.org/10.1117/12.665360)
17. **Redo-Sanchez, A.**, Karpowicz, N., Xu, J., & Zhang, X.-C. (2006). Damage and defect inspection with terahertz waves. *The 4th International Workshop on Ultrasonic and Advanced Methods for Nondestructive Testing and Material Characterization*, 11, 67–77. [NDT.net full text](#)
18. Karpowicz, N., **Redo-Sanchez, A.**, Zhong, H., Li, X., Xu, J., & Zhang, X.-C. (2005). Continuous-wave terahertz imaging for non-destructive testing applications. *Joint 30th International Conference on Infrared and Millimeter Waves and 13th International Conference on Terahertz Electronics*, 1, 329–330. doi: [10.1109/icimw.2005.1572542](https://doi.org/10.1109/icimw.2005.1572542)
19. Liu, H., Zhong, H., Karpowicz, N., Li, X., **Redo-Sanchez, A.**, Chen, Y., Xu, J., Zhang, X.-C., Han, H., & Jin, Y.-S. (2005). THz Photonics Technology and Its Applications. 2005 International Topical Meeting on Microwave Photonics. doi: [10.1109/MWP.2005.203530](https://doi.org/10.1109/MWP.2005.203530)
20. Zhong, H., **Redo-Sanchez, A.**, Chen, Y., & Zhang, X.-C. (2005). Standoff Distance Detection of Explosive Materials with THz Waves. 2005 Joint 30th International Conference on Infrared and Millimeter Waves and 13th International Conference on Terahertz Electronics, 1, 42–43. doi: [10.1109/icimw.2005.1572397](https://doi.org/10.1109/icimw.2005.1572397)

Other publications

1. Rachapudi, P., Sinha, S., Lee, W. S., **Redo-Sanchez, A.**, & Raskar, R. (2016). A purely solid-state device for rapid reconstruction of 3D models of the anterior segment of the eye with no moving parts. *Investigative Ophthalmology & Visual Science*, 57(12), 1908. [ARVO abstract](#)
2. **Redo-Sanchez, A.**, & Zhang, X.-C. (2013). THz photonics. In C. H. Lee (Ed.), *Microwave Photonics* (2nd ed., pp. 423–475). CRC Press.
3. Zhang, X.-C., & **Redo-Sanchez, A.** (2012). *Handheld THz Instrumentation*. SPIE Professional. doi: [10.1117/2.4201204.09](https://doi.org/10.1117/2.4201204.09)
4. **Redo-Sanchez, A.** (2012). *The Terahertz Wave eBook: Technical Overview*. Zomega Terahertz Corporation, East Greenbush, NY, United States.
5. **Redo-Sanchez, A.**, Broquetas, A., Romeu, J., & Jofre, L. (2009). Terahertz technology review and outlook. *Leitat Technological Center and Universitat Politècnica de Catalunya*.

6. Ruiz, X., Ramírez-Piscina, L., **Redo-Sanchez, A.**, & Casademunt, J. (2001). Nonlinear Response of Fluid Flow to G-Jitter in Differentially Heated Cavities. Subharmonic Route to Chaos and Beyond. First International Symposium on Microgravity Research and Applications in Physical Sciences and Biotechnology, ESA SP-454, 871. [NASA ADS abstract](#)

Patents

1. Dehkordi, B. H., Barsi, C., & **Redo-Sanchez, A.** (2025). Methods and systems for programming momentum and increasing light efficiency in deeper roundtrips of folded optics and cavities via time-space harmonics and moiré effects. United States Patent and Trademark Office, Patent No. [US-12253674-B2](#).
2. Dehkordi, B. H., Barsi, C., Ting, I.-H., **Redo-Sanchez, A.**, & Mehta, A. A. (2025). Display and imaging systems with 1D-1D optical surfaces for stereoscopic and monocular depth programming. United States Patent and Trademark Office, Patent No. [US-12298511-B2](#).
3. Dehkordi, B. H., Barsi, C., & **Redo-Sanchez, A.** (2025). Methods and systems for programming momentum and increasing light efficiency in deeper roundtrips of folded optics via axial refraction. United States Patent and Trademark Office, Patent No. [US-12216280-B2](#).
4. Dehkordi, B. H., Barsi, C., & **Redo-Sanchez, A.** (2024). Multipurpose in-vehicle display systems with ambient light sources for integrated HUDs, instrument clusters, and interactive displays. United States Patent and Trademark Office, Patent No. [US-12025798-B1](#).
5. Dehkordi, B. H., Barsi, C., & **Redo-Sanchez, A.** (2024). Methods and systems for programming momentum and increasing light efficiency above 25% in folded optics and field evolving cavities via quantum effects. United States Patent and Trademark Office, Patent No. [US-12158583-B2](#).
6. Dehkordi, B. H., Barsi, C., & **Redo-Sanchez, A.** (2024). Methods and systems for interactive displays with intelligent generative content and tandem computing. United States Patent and Trademark Office, Patent No. [US-12099771-B1](#).
7. Dehkordi, B. H., Barsi, C., & **Redo-Sanchez, A.** (2024). Methods and systems for interactive displays with intelligent generative content and tandem computing. United States Patent and Trademark Office, Patent No. [US-12026420-B1](#).
8. Dehkordi, B. H., Barsi, C., & **Redo-Sanchez, A.** (2024). Methods and systems for interactive displays with intelligent generative content and tandem computing. United States Patent and Trademark Office, Patent No. [US-11868672-B1](#).
9. Dehkordi, B. H., Barsi, C., & **Redo-Sanchez, A.** (2023). Methods and systems for programming momentum and increasing light efficiency above 25% in folded optics and field evolving cavities. United States Patent and Trademark Office, Patent No. [US-11774762-B1](#).
10. Dehkordi, B. H., Barsi, C., Ting, I.-H., **Redo-Sanchez, A.**, & Mehta, A. A. (2023). Display systems and imaging systems with dynamically controllable optical path lengths. United States Patent and Trademark Office, Patent No. [US-11662591-B1](#).
11. Dehkordi, B. H., Mehta, A. A., Barsi, C., **Redo-Sanchez, A.**, & Raskar, R. (2023). Methods, systems, apparatuses, and devices for facilitating stress-adaptive virtual experience stations. United States Patent and Trademark Office, Patent Application Publication No. [US-20230191077-A1](#).
12. Dehkordi, B. H., **Redo-Sanchez, A.**, Andrews, G. M., & Raskar, R. (2021). Methods and apparatus for high resolution imaging with reflectors at staggered depths beneath sample. United States Patent and Trademark Office, Patent No. [US-11016309-B2](#).
13. Dehkordi, B. H., **Redo-Sanchez, A.**, Raskar, R., Aghasi, A., & Romberg, J. (2020). Methods and apparatus for imaging of layers. United States Patent and Trademark Office, Patent No. [US-10796190-B2](#).
14. Dehkordi, B. H., **Redo-Sanchez, A.**, Andrews, G. M., & Raskar, R. (2019). Methods and apparatus for high resolution imaging with reflectors at staggered depths beneath sample. United States Patent and Trademark Office, Patent No. [US-10386650-B2](#).

15. López-Zorzano, A., Etayo-Salinas, D., Fernández-Vallejo, M., Chudzik, M., **Redo-Sanchez, A.**, & Azanza-Ladrón, E. (2019). Method for Characterising a Material with Layered Structure and a Measuring System. European Patent Office, Patent No. [EP-3516373](#).
16. Sinha, S., Park, H., **Redo-Sanchez, A.**, Lawson, M. E., Savidis, N., Rachapudi, P., Raskar, R., & Patalano, V. (2018). Methods and Apparatus for Anterior Segment Ocular Imaging. United States Patent and Trademark Office, Patent No. [US-10105049-B2](#).
17. Moya-Garcia, J. J., & **Redo-Sanchez, A.** (2004). Palpation system for insertion of windows in vehicles. World Intellectual Property Organization, International Application No. PCT/ES2004/000248.
18. **Redo-Sanchez, A.** (2004). Device for separating, lifting and moving aluminium sheets or other non-ferromagnetic material. United States Patent and Trademark Office, Patent No. [US-6746063-B1](#).

■ TALKS

Invited talks

1. Dirac notation and cohesive framework for non-line-of-sight (NLOS) imaging. Optics, Photonics and Lasers, Valencia, Spain, Nov. 26, 2024.
2. Onyx: a new standard for 2D materials characterization. GraphIn2018 (ImagineNano 2018), Bilbao, Spain, Mar. 2018.
3. Onyx 2D materials inspector. Graphene Conference, Barcelona, Spain, Mar. 30, 2017.
4. Terahertz in art and cultural heritage inspection: present and future. Eastern Analytical Symposium, Somerset NJ, United States, Nov. 16, 2015.
5. Cultural heritage inspection applications with terahertz waves based on reading a closed book. Primera Reunión Mexicana de Ciencia y Tecnología de Terahertz, León, Guanajuato, Mexico, Oct. 2015.
6. Portable open-field terahertz instrumentation. Pittcon Conference, Philadelphia PA, United States, Mar. 2013.
7. Zomega Terahertz Corporation overview. RFIC Panel Sessions, Montreal, Canada, Jun. 2012.
8. Frontiers of terahertz time-domain imaging. Arizona State University, Tempe AZ, United States, Jan. 2012.
9. THz time-domain spectroscopy for food and pharmaceutical applications. Universitat de Barcelona, Barcelona, Spain, Jan. 2010.
10. Terahertz science and technology review. Universidad Politécnica de Madrid, Madrid, Spain, Jul. 2009.
11. Terahertz science and technology review. Universitat Politècnica de Catalunya, Barcelona, Spain, May 2009.
12. Terahertz science and technology for security applications. Upstate New York Electronic Crimes Coalition Conference, Troy NY, United States, Nov. 2007.
13. Sensing explosive and related compounds with terahertz technology: from laboratory demonstration to open field applications. Gordon Research Conference, Big Sky MT, United States, Sep. 2007.
14. Damage and defect inspection with terahertz waves. University of Massachusetts Dartmouth, Dartmouth MA, United States, Jun. 2006.
15. Continuous-wave terahertz systems. Capital Normal University, Beijing, China, Mar. 2006.
16. Sensing and imaging with CW terahertz systems. Quantitative Non-Destructive Evaluation Conference, Brunswick ME, United States, Jul. 2005.
17. Sensing and imaging with continuous-wave terahertz. Rensselaer Polytechnic Institute, Troy NY, United States, Oct. 2005.
18. Terahertz applications in solid state physics. Universitat de Barcelona, Barcelona, Spain, Sep. 2005.

Seminars and workshops

1. Terahertz spectroscopy workshop. EPFL, Lausanne, Switzerland, Feb. 2013.
2. Terahertz instrumentation status and market outlook. 2012 Workshop on Terahertz Science Instruments and Frontier Technology, Beijing, China, Aug. 2012.

3. Practical guide to develop terahertz systems. Universitat Politècnica de Catalunya, Barcelona, Spain, Jun. 2010.
4. Terahertz systems integration constraints. Universitat Politècnica de Catalunya, Barcelona, Spain, May 2009.