

Part A. PERSONAL INFORMATION

CV date

01/12/2020

First and Family name	Juan Carlos Cabanelas Valcárcel	
Researcher codes	Open Researcher and Contributor ID (ORCID**)	0000-0002-5468-1177
	SCOPUS Author ID (*)	35566596200
	WoS Researcher ID (*)	K-2787-2014

(*) Optional (**) Mandatory

A.1. Current position

University/Institution	Universidad Carlos III de Madrid		
Department	Materials Science and Engineering and Chemical Engineering		
Address and Country	Avda. Universidad 30, 28911 Leganés		
Phone number	916248386	E-mail	caba@ing.uc3m.es
Current position	Profesor Titular de Universidad	From	18/02/2008
Key words	Nanocomposites, polymer blends, interphases, fluorescence		

A.2. Education

PhD, Licensed, Graduate	University	Year
Licenciado Ciencias Químicas	Universidad Complutense de Madrid	1993
Doctor por la Univ. Carlos III	Universidad Carlos III de Madrid	2001

A.3. General indicators of quality of scientific production (see instructions)

- **Six-year research (Sexenios de investigación reconocidos):** 3 (Last one owned in 2015)
- **Number of advised and concluded Doctoral Thesis:** 5 (from which 3 before 2010)
- **Number of ongoing Doctoral Thesis:** 1
- **Publications in journals with selective editorial policy (indexed in JCR):** 25
 - From which, publications in first quartile (Q1) journals (JCR): 17 (68%)
 - From which, publications in first quartile (Q1) from 2010: 90%
- **Book Chapters:** 3
- **Number of citations received (Scopus):** 631
- **H-index (Scopus):** 13
- **Average citations/year:** 27 • **Average citations/item:** 25
- **Patents applied for:** 1

Part B. CV SUMMARY (max. 3500 characters, including spaces)

J. Carlos Cabanelas was graduated in Chemistry from the Complutense University of Madrid in 1993. After that, he joined the Carlos III University of Madrid to carry out his doctoral thesis. He received his PhD from the Carlos III University of Madrid in January 2001. He is professor at this university since 2008, in the Materials Science and Engineering and Chemical Engineering department, from which he has been subdirector from 2011 until now.

He has developed most of his research activity in polymeric materials and polymeric matrix composite materials, with special attention to the development of organo-inorganic hybrid materials (doctoral thesis topic), polymer blends and the study of the interphase structure and properties in composite materials. Since 2006 and within the lines initiated by the research



group to which it belongs, it has focused its work on the study of nanocomposites, mainly on the problem of dispersion of nano-reinforcement, development of surface coatings and, in brief, the modeling and control of the interface. He has co-directed a total of 5 doctoral thesis (1 more ongoing). He has also carried out studies with carbonaceous materials, especially graphene, demonstrating how the dispersion of reduced graphene oxide in thermoplastic and thermoset matrices (polysulfone, epoxy) may be improved by surface modification. Also, he used fluorescence and luminescence techniques as a tool for characterizing processes and interphases at the molecular scale. Recently, he spreaded its research focus to the preparation of functional materials with improved mechanical, thermal or electrical properties.

He has participated in more than 16 research projects, most of them with public funding and therefore competitive, being co-IP of two of them (NANOARQ and SEAPORT). Scientific productivity in publications indexed in JCR reaches 25 articles, in addition to 3 book chapters and other minor contributions (confidential reports and publications not indexed in JCR). Among the articles indexed in JCR, the majority, a total of 17, are in the first quartile (Q1), having been cited in total 631 times as of 30/11/2020 (average 25 citations / article), with an H index of 13. He has established collaborations with international researchers such as prof. R.J.J, Williams (Argentina), prof. J.P. Pascault (France), prof. D.Rodrigues (Houston, USA) or prof. M. Terrones (currently at Penn. State Univ., USA), among others, with whom he has publications in common.

Regarding the training aspect of researchers, in addition to co-directing five doctoral theses, all with the highest qualification, he has tutorized numerous degree and master projects (around 1-2/year), and 4 final master's projects in the Master in Materials Science and Engineering, in which he teaches in polymers and blends for more than 10 years.

Part C. RELEVANT MERITS (*last ten years, sorted by typology*)

C.1. Publications (*see instructions*)

1. J. Peña-Bahamonde, Verónica San-Miguel, J. Baselga, J.P. Fernández-Blázquez, G. Gedler, R. Ozisik, **J.C. Cabanelas***, Effect of polysulfone brush functionalization on thermomechanical properties of melt extruded graphene/polysulfone nanocomposites, Article. CARBON 151(2019), 84-93 [Q1, *Polymer Science*]. Times cited: 4 (Scopus).
2. Primo, Victor A.; Perez-Rosa, Daniel; Garcia, Belen*; **Cabanelas, Juan Carlos**. Evaluation of the Stability of Dielectric Nanofluids for Use in Transformers under Real Operating Conditions. Article. NANOMATERIALS 9(2) (2019), 143 [Q1, Materials Science, Multidisciplinary]. Times cited: 8 (Scopus)
3. Pena-Bahamonde, J., San-Miguel, V., **Cabanelas, J.C.**, Rodrigues D.F*, Biological Degradation and Biostability of Nanocomposites Based on Polysulfone with Different Concentrations of Reduced Graphene Oxide. Article. MACROMOLECULAR MATERIALS AND ENGINEERING 303(2), (2018), 1700359. [Q1, Polymer Science]. Times cites: 4 (Scopus)
4. Pena-Bahamonde, Janire; San Miguel, Veronica; Nguyen, Hang N., Ozisik R., Rodrigues D.F., **Cabanelas J.C.***, Functionalization of reduced graphene oxide with polysulfone brushes enhance antibacterial properties and reduce human cytotoxicity. Article. CARBON 111 (2017) 258-268. [Q1, Polymer Science]. Times cited: 28 (Scopus).
5. Artemia Loayza, **Juan Carlos Cabanelas**, Maria Gonzalez, Juan Baselga*. Critical examination of chemically modified hybrid thermosets: Synthesis, characterization and mechanical behavior in the plateau regime of polyaminosiloxane nitrile-DGEBA. Article. POLYMER 69, (2015), 178-185. [Q1, *Polymer Science*]. Times cited: 3 (Scopus).
6. Claire Antonelli, Berna Serrano, Juan Baselga, Rahmi Ozisik, **Juan Carlos Cabanelas***. Interfacial characterization of epoxy/silica nanocomposites measured by fluorescence. Article. EUROPEAN POLYMER JOURNAL 62, (2015), 41-52. [Q1, *Polymer Science*] Times cited: 15 (Scopus).



7. Antonelli C., Serrano B., Baselga J., **Cabanelas, J.C.** Fluorescence probes the early formation of network at the interface of epoxy-silica nanocomposite during curing. Article. MATERIALS LETTERS (2014), 137, 460-463 [Q1, Categoría: *Materials Science, Multidisciplinary*] Times cited: 3 (Scopus).
8. Terrones, M., Martín, O., González, M., Pozuelo, J., Serrano, B., **Cabanelas, J. C.**, VegaDíaz, S. M. and Baselga, J. "Interphases in Graphene Polymer-based Nanocomposites: Achievements and Challenges". Article. ADVANCED MATERIALS, 23, 5302-5310 (2010). [Q1, *Nanoscience & Nanotechnology, Materials Science, Multidisciplinary*]. Times cited: 206 (Scopus).
9. González M.G., **Cabanelas J.C.**, Pozuelo J., Baselga J. Preparation of cycloaliphatic epoxy hybrids with non-conventional amine-curing agents. JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY 103(2), 717-723 (2011). [Q2, *Thermodynamics, Q3, Chemistry Analytical*] Times cited: 9 (Scopus)
10. Katelyn Parker, Ryan T. Schneider, Richard W. Siegel, Rahmi Ozisik, **Juan Carlos Cabanelas**, Berna Serrano, Claire Antonelli, Juan Baselga. Molecular Probe Technique for Determining Local Thermal Transitions: The Glass Transition at Silica/PMMA Nanocomposites. Article. POLYMER, 51, 4891-4898 (2010). [Q1, *Polymer Science*]. Times cited: 25 (Scopus).

C.2. Research projects

1. **Reference:** RTC-2015-3742-4
Title: Self-Healing and resistant asphalts for ports (SEAPORT)
Funding agency: Ministerio de economía y competitividad, Spain.
Duration: 2015-2019
Research IP: **Juan Carlos Cabanelas** (coordinator from UC3M). Maria Helena Hidalgo Pérez (consortium coordinator, Eiffage Infraestructuras).
Consortium: Eiffage infraestructuras, CEPSA, Univ. de Granada, Universidad Carlos III
Financial resources: 806077,05 € full consortium (106609,5 € in the UC3M)
2. **Reference:** MAT2014-57557-R
Title: Nanocomposites con arquitecturas estructuradas jerárquicamente (NANOARQ).
Funding Agency: Ministerio de Ciencia e Innovación, Spain
Duration: 2015-2018 **Research IP:** **Juan Carlos Cabanelas**, Juan Baselga Llido
Financial resources: 110.000 €
3. **Reference:** MAT2010-17091
Title: Nanocomposites con partículas funcionalizadas (NANOMOD)
Funding Agency: Ministerio de Ciencia e Innovación. Spain
Duration: 2011-2014
Research IP: Juan Baselga Llidó
Financial resources: 100.000 €
4. **Reference:** IPT-2011-1359-420000 (Programa Innpacto)
Title: Materiales multifunc. avanzados para aplicación en carreteras y edificios (MAMCE)
Funding Agency: Ministerio de Ciencia e Innovación. Spain.
Duration: 2011-2014
Research IP: Juan Baselga Llidó (UC3M) y Dr. Ignacio Barreno (PROAS)
Financial resources: 174.195,10 € (UC3M)
5. **Reference:** ERA-NET (MEC, NAN2007-31173-E)
Title: Nano-conductive Polymer Composites with predefined architecture and customized dielectric and EMC properties dedicated to shielding and absorbent panels (NACOPAN).
Funding Agency: European Union ERA-NET. Ministerio de Educación y Ciencia, Spain.
Duration: 2008-2011
Research IP: Romeo Ciobanu (IASI, Rumanía), Javier Pozuelo (UC3M) **Financial resources:** 200.000 € (UC3M)



C.3. Contracts, technological or transfer merits

- Title:** Aircraft lightning strike protection with graphene hybrid nanomaterials (LIGHTGRAPH)
Research IP: Juan Baselga Llidó. **Financing company:** EADS/CASA Duration: 2014-2018 **Financial resources:** 242.000 €
- Title:** Nanotecnología para Aeroestructuras Composite Multifuncionales “Nanomulfun”
Research IP: Juan Baselga Llidó (UC3M), Jose Sanchez Gomez (AIRBUS) **Financing company:** AIRBUS.
Duration: 2008-2010
Consortium: AIRBUS, Inasmet, UC3M. **Financial resources:** 115.000 € (UC3M)

C.4. Patents

- Nº Patent:** PCT/EP2020/054868; EP 3 702 411 A1
Date of application: 25/2/ 2020
Title registered: Self-healing asphalt by rejuvenator-containing microcapsules activable at will by irradiation.
Industrial property Inventors: CEPSA: Vicente Pérez Mena; María González González, Ignacio Pérez Barreno. UC3M: Yahya Agzenai Ben Salem, Juan Carlos Cabanelas Valcárcel, Juan Baselga Llidó. **Entity holder of rights:** CEPSA, UC3M

C.5. Book Chapters

- Cabanelas J.C.**, Antonelli C., Miguel V.S., Serrano B., Baselga J., Spectroscopic análisis of epoxy/thermoplastic blends. Book chapter of Handbook of Epoxy Blends (2017), pp 583612, ELSEVIER. ISBN: 978-331940043-3
- Maria Gonzalez, Juan Baselga, **Juan Carlos Cabanelas**, Applications of FTIR on epoxy resins-identification, monitoring the curing process, phase separation and wáter uptake. Book Chapter of Infrared Spectroscopy: Materials Science, Engineering and Technology (2012), pp.261-284, INTECH. ISBN: 978-953-51-0537-4.

C.5. Direction of Doctoral Thesis

- Title:** “Modificación de grafeno con cadenas de polisulfona e incorporación a matrices poliméricas. Evaluación de las propiedades y de la biocompatibilidad de los nanocomposites”
Author: Janire Peña Bahamonde Co-director: Veronica San Miguel Aranz
University: Universidad Carlos III de Madrid. Escuela politécnica superior (2017)
- Title:** “Nuevas formulaciones de materiales híbridos basados en epoxy y poliaminosiloxanos modificados con acrilonitrilo”
Author: Artemia Loayza Co-director: Juan Baselga Llidó
University: Universidad Carlos III de Madrid. Escuela politécnica superior (2015)
- Title:** “Nanocomposites de matriz epoxi: caracterización de la interfase por fluorescencia”
Author: Claire Antonelli. Co-director: Berna Serrano Prieto
University: Universidad Carlos III de Madrid. Escuela politécnica superior (2014) PhD directed Before 2010:
- Title:** “Termoestables nanoestructurados: poliorganosiloxanos funcionales y resinas epoxi”
Author: D^a. María González González Co-director: Juan Baselga Llidó
University: Universidad Carlos III de Madrid. Escuela politécnica superior (2008)
- Title:** “Termoestables híbridos organo-inorgánicos. Síntesis, caracterización y propiedades”
Author: Silvia Gonzalez Prolongo Co-director: Juan Baselga Llidó
University: Universidad Carlos III de Madrid. Escuela politécnica superior (2003).