

Europass

## CURRICULUM VITAE

### Personal data:

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**Web of Science Researcher ID:** C-4194-2012

**Educational background:** B.S. Vălenii de Munte, Prahova, 1960

"Bucharest" University, Faculty of Chemistry; Department of Physical Chemistry: 1960 - 1965

**Project for chemist' degree:** "Kinetic Aspects by Thermogravimetric data." supervised by prof. dr. doc.acad. Eugen Segal, Bucharest University, Diploma of Chemist, June 1965.

1968 – 1971, PhD student, "Al. I. Cuza" University, Department of Physical Chemistry, Iasi; with **Research project for doctor ' degree:** "New Methods for Characterization of the Binary and Ternary Polymer Blends" supervised by prof dr.doc I. A. Schneider, "Al. I. Cuza" University, Department of Physical Chemistry. Thesis defense: November 22, 1971, approval: June 1972, **PhD diploma.**

### Work experience and Titles:

1965 - 1966 - Assistant professor, "Grigore T. Popa" Medicine and Pharmacy University of Iasi Romania, Physical-Chemistry Department

1966 - 1968 – Chemist at "Kinetics of the polymerization and polycondensation reactions" group, "P.Poni" Institute of Macromolecular Chemistry of the Romanian Academy, Iasi,

1972 - 1978 - Researcher, "P.Poni" Institute of Macromolecular Chemistry (PPIMC), Iasi as leading researcher of the "Polymer Degradation" group with add. Nr. 10122/15.10.1979.

1979 –graduation of the University of Politics and Leading-Iasi, with thesis "People in conditions of the Technical-Scientific Revolution conditions. The implications of environmental pollution on social life" supervised by conf. dr. Morarasu Marcel.

1978 - 2019 - Senior researcher, CPIII (1977), CPII (1990) and CPI (1996) at "P. Poni" Institute of Macromolecular Chemistry, of the Romanian Academy, Iasi, Romania research group "Polymer Degradation" being research programs/contracts director. The studies have been related both with basic research supported by Romanian Academy entitled "Physical Chemistry of Multicomponent Polymeric Systems" and contracts supported by Ministry of the Chemical Industry and Ministry of Research and Environment directed to the "Effects of the macromolecular compounds on the Environment". I obtained approval of the Romanian Academy to create a new department of "Physical-Chemistry of Polymers" in our PPIMC Institute and I have been the head/leading researcher of this department involved in studies on polymer systems characterisation, thermodynamics of polymers in solutions and in solid state, non-isothermal kinetics, environment protection, polymer waste recycling and recovery. For the last research field I also activated as member of the Iasi county commission for 5 years.

1994 - 2019 - supervisor of the MSc and PhD theses ; 32 PhD theses successfully defended until 2018; I have also supervised a total of 28 bachelors degrees, 8 master students (2 of them in joint supervision); 9 PhD students and 3 postdocs stages have been co-supervised.

1970 -2018 – leading researcher for collaboration with SMEs: SC INCERPLAST SA – Bucharest and SC CEPROPLAST SA Iasi - Romania

### Awards and honours:

1965 - "Bucharest" University *award* for the scientific research of students with the paper entitled: "Kinetics of Decomposition of Ni, Co and Cu complexes with pyridine";

1969 - "N. Teclu" distinction of the Romanian Academy for the studies entitled: "Contributions at the Polymerization, Copolymerization and Compatibility of Homogeneous Systems Based Acrylonitrile for Filable Solutions" Cornelia Vasile, I. Vlăgiu, Silvia Ioan, N. Asandei, I.A. Schneider, received in 1971, and an award received on March, 2, 1974, recognizing the contributions to the macromolecular chemical sciences;

1980 - Affiliate Member of the "BioEnergy" Council of USA

1984 - member of the Association of the Romanian Scientists"

**1986, 1987 2004, 2005, 2008, 2016, 2017, 2018 - 15 distinctions: Gold, Silver or bronze medals and diplomas** awarded at the "Inventica" Symposia held at Iasi, Bucharest, Ploiesti-Prahova, Timisoara for the achievements concerning the recovery of polymer wastes by destructive and non-destructive procedures and novel active materials for food packagings and drug delivery systems. (Romania Patents 879036, 88032 and 92783, etc.)

2006 – **Excellence Diploma and Medal** for participation to PC6 project of the European Community for Research, Technological Development and Demonstrative Activities *provided by Ministry of Education and Research/ANCS*.

**2017- Best Paper Award** by *Japan Society of Materials Cycles and Waste Management* – For publication on *Gas production by steam gasification of polypropylene/biomass waste composites in a dual-bed reactor*. E. Butnaru, Md. A. Uddin, Y. Kato, T. Watanabe, J. Yanik, C. Vasile, *J Mater Cycles Waste Manag*. DOI 10.1007/s10163-014-0308-0, published in 2014.

**2017 - Top reviewers for „Materials” Journal** - 3rd most prolific contributing peer reviewer on Publons for Materials

2018 - *Merit allowance* for entire research activity from Romanian Academy.

**2020 - Excellence Diploma "Justin CAPRA" and gold medal** for Patent RO131883/30.09.2019 Bioactive, stratified, antibacterian, antifungic, antioxidant composites and processing procedure, "Traian Vuia" Timișoara, **2020** Munteanu S.B., Ghiocel E.I, Pricope G.M, Miteluț A.C. Tănase E.E., Vasile C.

**2020 - Lifetime Achievement Award in "6-th International Scientist Awards on Engineering, Science and Medicine" VDGGOOD of Professional Association": *International Scientist Awards On***

*Engineering, Science and Medicine*. 20 & 21-June-2020, Chennai, India for activity consisted in : 8 Awards and honours; 127 Books and Chapters in books; 53 – research programmes and international contracts; 17 invited conferences .

**2025 - Polymers - Best Paper Award for Open Access Review: *Lignins as Promising Renewable Biopolymers and Bioactive Compounds for High-Performance Materials*** by Cornelia Vasile and Mihaela Baican, *Polymers* **2023**, 15(15), 3177; <https://doi.org/10.3390/polym15153177> high quality, scientific significance, and extensive influence.

**2025 - International Research Awards on Fiber reinforced Polymers**. For the paper titled "Lignins as Promising Renewable Biopolymers and Bioactive Compounds for High-Performance Materials" in the *US Best Paper Award*; cited by multiple articles in sustainable polymer science.

**2025 July, 30.06**, Title- **Honorary citizen** of the **Izvoarele Commune** (Village Homoraciu, Prahova county) Decision nr. 32 of the Local Conseil

**2025 September 26- Excellence Diploma for global scientific activity in the field of „Physical Chemistry of Polymers”and national and international recognition**

**December 23, 2025 8:33 AM: World Green Energy (WGE) Awards; under the category of Research Excellence Award; Domain: Waste to Energy Conversion. The Research Excellence Award** category reflects the quality and impact of the work.

#### **Additional Positions:**

1966 – Assis. Prof. "Gr.T. Popa", Medicine and Pharmacy University, Iasi, Romania

1971 – 1974; 1980-1981; 1999 - Associate lecturer or professor at "Al. I. Cuza University and Physical Chemistry –Thermodynamics; the course “*Physical Chemistry of Macromolecules*” for students of last year (V) as specialization and at the Department of Textile at Polytechnic University “Gh. Asachi” of Iasi – laboratory and workshops; and Ass.Prof. for master courses at "Al. I. Cuza” University of Iasi - Romania, Physics Faculty, the Departments of Physical Chemistry or of Optics and Spectrometry, respectively; the courses may cover topics on Physical Chemistry of Polymers such as thermodynamics, chemical kinetics, for chemists and for master students in Physics.

1994-1995 – **Fulbright fellowship** in University of Massachusetts-Lowell, in Plastics Engineering Department, USA with project *Polymer Blends and Composites*, prof. Rudolph Deanin with project *Polymer Blends and Composites*; after 1995 - Fulbright Association member, International Exchange of Scholars, Washington D.C;

1995 – 1998 (2011) (three visits even starting from USA) **Visiting Scientist** expert at Queen’s University, Canada, project “Polymer Blends and Composites” prof. A. Nathanson and **Associate Professor at - Laval University**, Department of chemical engineering, **Quebec, Canada**; 3 months international cooperation (3018-8314/1998) grant offered /supported by Ministry of Education of Quebec, National Research Council of Canada.; for the projects: “Vacuum pyrolysis of polymer waste” and “Pyrolysis of Plastic Waste from single use products (Medical Waste)” prof. C. Roy and for supervising PhD theses. Carte d’identite 2002/9.03; No Dossier 000522391;

2000. - **Visiting Scientist** at Johannes Gutenberg University of Mainz - Germany.

2000 - 2008 – **Ass. Professor** at “Al.I. Cuza” University, Faculty of Physics, Department of Plasma, Optics and Molecular Physics, master studies

1998 – 2007 – **Ass. Professor** at “Gh. Asachi” Technical University of Iasi, Faculty of Chemistry, Department of Macromolecules, as PhD theses supervisor.

### **Professional training / societies - Collaborations**

12.1971 – CAER exchange at Institute for plastics studies, Budapest Hungary. Prof Bodor Geza-polymer morphology, XRD

1974 – Training In Computers And Softwares at the Computer Center, Iasi, Romania

1984 - 1999 - Member of Romanian Association of Scientists;

1998 october - Active member of the New York Academy of Sciences

1990 - 2020 – **IUPAC active member - representative of the Romanian Academy, Chemical Section for Affiliate IUPAC members**; Programme for Young Researchers; **IUPAC Affiliate Membership** Certificate and Card 1999/2000;

1992-1993 - **Weizmann Institute of Sciences**, Rehovot, Israel, 2 months; grant from Ministry of Research and Technology; prof E. Katchalsky-Katzir and dr. A Warshawski.

1993- May 16-26, **3-rd Mediterranean School for Polymer Based Materials- Arco-Felice and Capri- UNESCO grant**;

1997 – **NATO grant University of Patras - Greece** with project: Stimuli responsive polymer systems.

1994 - 1999 member of the Board of the Directors by the General Assembly of the **Mediterranean Network on Science and Technology of Advanced Polymer Based Materials**;

1994, 1996 member of the International Organizing Committee of the First and second Mediterranean Exhibition of Technological Innovation.

1990 - 1999 - member of Planetary Society (Pasadena - California).

1990 - present - member in the Romanian Academy Commissions for " Thermal Analysis and Calorimetry" and "Environmental Protection”.

1999 – **Dictionary of International Biography** – Twenty Seventh Edition citing 7 books, 170 papers, 35 patents

1999 – **Expert Evaluator of the European Commission EE1991A24578**

2000 - **American Biographical Institute (ABI)**; **ABI’s Research Board of Advisors/18.02.2000**; Contemporary *Who’s Who* publication; Woman of the year 1998 and Biographical Inclusion in the Eighth Edition of the International Directory of Distinguished Leadership by Editorial Board; the

Sixth edition of the International Who's Who of Professional and Business Women (1000 World Leaders of Scientific Influence/2000) published biography October 29, 1999; Certificate of Appointment; Researcher of the year of the ABI/ 2002; woman of the year 2000; person of the year 2004; Who's Who in the World 14-th edition 1996; 15-th edition 1998- published biography / Who's Who in America/ Who's Who in Science and Engineering 4th edition - published biography; Marquis Who's Who certificate of Recognition/2001 - published biography: 1999 for 16 and 18th edition 2001; Who's Who in Medicine and Healthcare 2nd Edition - published biography and certificate of Recognition;

1996/2003 – **International Biographical Center (IBC) /Association Cambridge CB2 3QP** England, Fourth Edition of the International Leaders of Achievements published biography and photograph Dictionary of International Biography. 25-27 –th editions 1996 - 1998, published biography; 1997- The World Who's Who of Women; Fourteenth Edition; 1998 - International Who's Who of Intellectuals thirteenth; 1999-2000 - Outstanding people intellectuals of the 20th century award for achievement 1998; Outstanding Achievement Awards published biography; The twentieth Century Award for Achievement/5-th December 1997 and 10th April 1998; International Personality “Woman of the year 2000/2001”, nominated by Editorial and Advisory Boards of the IBC-Cambridge; Living Legends/2003;

**2000 – 2025** Evaluator of the proposals of the research projects for Romania, France, Croatia, Poland, Turkey. Certificates of reviewing awarded by Ministry of Education – UEFISCDI; Certificate no: 2016, D-2100-002N-5167 - Cornelia Vasile in recognition of the review contributed to the Romanian National Evaluation process for PNCDI III, SP 2.1, Transfer of knowledge to the economic agent; „**Bridge Grant**” - Certificate no: 2021,2022 D-2200-006Y-9652 in recognition of the review contributed to the Romanian National Evaluation process for "PNCDI III, SP 2.1, Experimental - Demonstration projects (PED-2021)", etc.

**Editorial Board member:** 1) the International Organizing Committee of the Fourth Mediterranean School for Advanced Polymer Based Materials - Crete, 5-9 June, 1995.; 2.member of the Advisory Committee of *International Journal of Polymeric Materials* - USA and 3. Scientific Committee of the MED-NET Magazine, Italy, 4. *International Journal of Polymer Science*, 5. *Materials*, 6.*Polymers* (MDPI) – head of the section”Polymer Physics”, 7. *Environmental Open Waste Management*, 8. 2008 *Polymers Research Journal*; 9. 2009 - *J. of Environmental Protection* 10. 2014- present *International J. Polym. Sci.*; the Hindawi Editor Community closed may 2024 and changed to Wiley Editor Community. 11. *Polymer Research J.*; 12. from 2015 *International Journal of Nanomaterials, Nanotechnology and Nanomedicine*, 13. iMedPub: *Archives in Chemical Research*, 14. *Results in Physics*, 15. 1st December 2024; 16. *Journal of Nanoscience and Nanomedicine*, 18. *J. of Modern Nanotechnology*; 17. *Sustainable Polymer & Energy*; 18. *Journal of Biosciences and Bioengineering*; 21. *Assistant Editor, Academic Editor, Advisory Board Member for Special Issues, Collections and Topics and reviewer for the MDPI journals (Polymers, Foods, Coatings, Molecules, Nanomaterials, Materials Basel-reviewed 22 papers in the period 2017–2022 award received)* - 27 January 2022; 22. *Exploration of BioMat-X* from 2023 - Academic Editor

**2023 - present Advisory Board Member -Special Issues, Collections and Topics in MDPI journals**

Guest Editor for Special Issues in: *Materials*: Food Packaging: Materials and Technologies; *Polymers*: Natural Additives for Special and High Performance Polymeric Materials; in *Polymers*: Advances in Natural Polymers: Extraction Methods and Applications; in *Polymers*: Advances in Natural Polymers and Active Compounds: Extraction Methods and Applications

**Referee for journals:** *J. Therm. Analysis*, *J. Polymer Degrad.Stability*, *J. Anal. Appl. Pyrolysis*. *Industrial Crops and Products*, *Biomacromolecules*, *J. Mater. Cycle and Management- Japan*, *Cell Chem Technol. J. Appl.Polym. Sci.*, *Polymers*, *Materials (MDPI)*, *Intern. J. Polym. Sci.*, *Sustainable Polymer & Energy*; etc. Journal reviewing (~ 10-15 per year)

1999 - member of the **International Lignin Institute (ILI)**.

2005 – **member in Management committees** of the **COST projects: E41, P12 and 868, E54, FP0901, FP 0602, FA0904, FP904.**

2016 – present *International Scientific Board* of the Experts in polymer and material sciences  
Member of the *Latvian State Institute of Wood Chemistry International Advisory Board*;

2016 –present *International Scientific Board of the Experts in polymer and material sciences of the United Arab Emirates University.*

### **Professional activities:**

As a head of Physical Chemistry of Polymers Department I coordinated long term research programs supported by the Romanian Academy and Ministry of Environment as: I. *“Physical-Chemistry of the Multicomponents Polymeric Systems”* II. *“Reciprocal Influence Polymers-Environment”*; III. *Inter- and Intramolecular Interactions in Multicomponent Polymeric Systems* IV. *Components of Vegetable Biomass.*

Educational activity with students of “Al.I. Cuza” University, Faculty of Chemistry and Faculty of Physics, Gh, Asachi” Technical University and Laval University Quebec started in 1971 supervising bachelor diplomas, courses for V years of special training in Physical Chemistry of Macromolecules and also PhD theses.

### **Interests - Main areas of research**

- Polymer Characterization;
- Thermal Methods of Investigation of polymers;
- Polymer Physical Chemistry;
- Physical Chemistry of the Polymer Surface
- Kinetics of Polymer Degradation/Decomposition
- Thermodynamics of Polymer Solutions
- Thermodynamics of Multicomponent Polymer Systems:
- Study of the Polymer Compatibility and Biocompatibility;
- Cultural Heritage
- Polymer degradation; (bio)degradability;
- Enzymatic Degradation;
- Polymer blends Composites and Nanocomposites;
- Smart /Responsive polymers;
- Multifunctional materials – Antimicrobial/Antifungal/Antioxidant materials
- Coatings and Nanocoatings,
- Radiation-assisted polymer modification,
- Natural/degradable polymers; Lignin
- Biomaterials, Bioactive Polymer Materials;
- Synthetic/Natural Polymer Blends, Composite and Bionanocomposites,
- Food packaging (active, bioactive, smart, (bio)degradable)
- Polymeric Nanomaterials in Medical Applications;
- Polymeric Nanomaterials
- Wound Dressing;
- Controlled and targeting delivery and release of bioactive compounds (including drugs);
- Polymer Waste Treatment: Recycling/Recovery of Polymer Wastes by Destructive (Thermal Procedures (Methods and Technologies) and non-Destructive Procedures;;
- Pyrolysis of the Polymers
- Environmental Pollution and Protection

I coordinated as director 29 research contracts. In laboratory research new methods have been elaborated for polymer and their blends characterization including: fractionation, turbidimetry, microscopy, evolved gas analysis, ebullioscopy and cryoscopy, corresponding devices have been used in various laboratories; technical assistance for two order notes have been elaborated for industrial

instalations for polymer waste and used tyres pyrolysis. Three own patents have been industrially tested with good results.

**List of publications:** Total 953 including: 467 published papers in ISI journals, 126 papers in BDI journals, 140 books and chapters in books, and 220 publications in extension in Proceedings of the international and national scientific meetings;

Invited lectures, Courses and workshops, Oral Communications and Posters at International and National Scientific Meetings: 869 For all 2025 mentioned lists are available

**Editor** of the 14 books, 6 in Romanian and 8 in English (Elsevier, Marcel Dekker Publ., RAPRA Technol. Press, Brill Academics, Research SignPost Intern, etc.), one translated in Chinese language. **Author** of 4 books: 2 in Romanian and 2 in English.

#### **Special Issues as Guest Editor and Collections in MDPI journals, also published as books**

a) Special Issue in *Materials: Food Packaging: Materials and Technologies*; A printed edition of this Special Issue is available eds. C. Vasile and Dr. Morten Sivertsvik (ISSN 1996-1944), 2019.

b) Special Issues in *Polymers: Natural Additives for Special and High Performance Polymeric Materials*. Eds. C. Vasile, E. Stoleru, B.S. Munteanu *Polymers* 2020-2022.

Special Issue in *Polymers: Advances in Natural Polymers: Extraction Methods and Applications*. Eds. C. Vasile, Gabriel Aguirre-Álvarez and Xiao-Feng Sun. *Polymers* **2024**, *16*(13), 1886; <https://doi.org/10.3390/polym16131886>; A printed edition of this Special Issue is available ISBN 978-3-7258-2. DOI.org/10.3390/books978-3-7288-1672-9

Special Issue in *Polymers: Advances in Natural Polymers and Active Compounds: Extraction Methods and Applications*. Eds. C. Vasile, Gabriel Aguirre-Álvarez and Xiao-Feng Sun – is developing

Collectively, these research papers and reviews are focused on green, eco-friendly, and easily scalable processes, with a view to facilitate a sustainable and circular economy.

**Patents:** 55 – 2025 available list have been elaborated new procedures for manufacture of the synthetic fibres polymer blends (7 Romanian patents and 1 in Germany); 15 patents related to recovery of the polymers waste and reduction of their toxicity on the environment, 7 patents on new methods and devices for polymer characterization.

**Technical Papers:** The research based contracts with various units started in 1969 and have been elaborated at least 159 related technical agreements with the industrial companies, for design, applications of results, etc.

**COORDINATOR/ program director of the PROJECTS/GRANTS:** 32 National and 21 Internationals. Among technological processes: 8 have been elaborated in collaboration with research groups of designers for order notes related to: 2 at industrial and semi-industrial scale; 4 at pilot scale, 9 at micropilot scale and 3 at laboratory scale. The research beneficiaries as Chemical Complex (C.P.) Teleajen-Prahova, C.P. Borzesti, Darmanesti Refinery. They confirmed good results and applicability. Have been industrially tested three applications for C-5 resins produced by C.P. Teleajen, namely as lubricant for PVC, hot-melting adhesive for furniture (tested succesfully at Iasi Unit for furniture) and secondary plasticizer for PVC (tested at Reseach Center for Plastics Processing). *The results of the continous flow non-poluted pyrolysis technologies for the polymer waste recovery have been discussed at industrial and minister level and the order notes have been elaborated for industrial units of 1000- 5000 t/year and approved.* Because of investitions politics, the other results unfortunately are not applied

2002/2010 – director of Marie Curie project and grant “*Pyrolysis of polymer waste and utilization of pyrolysis products in petrochemical processes*” in collaboration with Ege University Turkey – Chemistry Department, - Prof. Jale Yanik and Okayama University, Japan, prof. Azhar Uddin.

**Citations :** (approximatively) **14.345 Citations**

**8,758 Research Interest Score**

**62 h-index**

**56 D-index**

## Collaborations:

**In Romania:** with education/research groups from Polytechnic Universities of Iasi, "A.I. Cuza" University of Iasi, "Grigore Popa" Medicine and University, Iasi, Bucharest, Cluj Timisoara and Arad, ICECHIM and IITPIC - design groups and ICEM- Bucharest, industrial research groups for plastics processing from Iasi of Iasi and Bucharest, CFS Iasi and CFS- Savinesti-Piatra Neamt, Petrochemical Complexes of Borzesti, Teleajen, Brazi Prahova and Darmanesti Refinery.

**Abroad** "The Weizman Institute of Science, **Israel**; LAVAL University, Quebec, **Canada** ; Okayama University, Faculty of Engineering, **Japan** ; Universitatea Massachusetts – Lowell, **USA**; Natural and Synthetic Polymer Waste including Biomass Recycling and Recovery, Universidad Autonoma de Nuevo Leon, Monterrey, **Mexico**; Chinese Academy of Sciences, Changchun Institute of Applied Chemistry, China, State Key Laboratory of Polymer Physics and Chemistry; **France** Universite Le Mans "Elaboration de captateurs a ondes acoustiques PVDF",– Polytechnic University of Wroclaw, **Poland**, Program CEEPUS – Advanced polymer materials and recycling of polymer waste; Institute for Science and Technology of Plastic Materials, **Arco Felice, Italy**; Food Packaging **Patras University Greece** and University of **West Macedonia**– Development of polymer based materials for eco-sustainable packaging; Polymeric materials for medical and pharmaceutical purposes; Thermodynamics and rheology of polysaccharides-based blends with potential use in pharmacy, Universitatea din Mainz, Institut fur Physikalische Chemie, Mainz, Leuna Merseburg and Max-Plank Institute **Germany**; Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic **Czech Republik**; Institute of Biochemistry **Moscow, Russia**; Budapest University; **Hungary**; University of Chemical Technology and Metallurgy – **Bulgaria** Departement of Physico-Mathematical and Technical Sciences; Turkey – Ege University, Chemistry Department, Pyrolysis of polymer waste and utilization of pyrolysis products in petrochemical processes; – **Maribor University – Slovenia**; **NOFIMA SA**, Chemistry department, - Biopackaging. - Biopackaging **Norway**.

### Research programs: (selected)

**Total Research Projects 107 which are classified in the following categories:**

- A) Long and short terms projects financed by Romanian Institutions –Romanian Academy, Ministry of Chemical Industry, or/and Ministry of Environment – 5**
- B) Programs developed by collaboration with industrial units and some corresponding research groups as related to polymer waste recovery and environment protection. 52**
- C) Projects financed by European and other abroad Institutions 25**
- D) Projects related to New High Performance Materials and for Medical Use 25**

#### **A) National programs for long periods supported by Romanian Academy and Ministry of Research and Technology**

1. Physical Chemistry of the Multicomponent Polymeric Systems; Priority programme of the Romanian Academy still exists this is still developing
2. 1991-1993 Impact of the polymers on environment and energy conservation – Priority programme of the Romanian Academy, C. Vasile and S. Dragan coordinators, team members M.A. Brebu, B.S. Munteanu, Hristea Darie, Yusaku Sakata, Luminița Ghimici, Ion Dranca, Marcela Schwab.
3. Recovery of polymer waste by pyrolysis, 1975-1989 - supported by *Ministry of Research and Technology , Chemical Industry Ministry and Ministry of Environment by Central Institute of Chemistry* 1981-1985–708/27.12.1983.
4. New cellulose derivatives (Noi derivati de celuloza) –C. Vasile, O. Petreus, G. Cazacu director, D. Ciolacu, R. Vornicu
5. Modelling the Interfacial Properties of Polymeric Multicomponent Systems - Grant of the Romanian Academy supported by Ministry of Research and Technology by CEPROPLAST S.A.-collaboration up to 2013

6. Multint Polymeric Systems with Surface Controlled Properties - Romanian Academy Grant / 1998, C. Vasile, programme director.

**B) Programs developed by collaboration with industrial units and some corresponding research groups as related to polymer waste recovery and environment protection. 52**

Research projects developed in collaboration/agreements with industrial units started in 1969 financed by these industrial units (C.P. Borzesti and C.P. Teleajen and MIC, and Ministry of Education - C. Vasile program director, research team: C. Vasile, M. Sabliovschi, G. Moroi D. Hristea, C. Zaharia; ing A.Paun, ing.P. Albastroiu, sing. Mihaescu Ana, tech. pr. Mitran Iosif (ICEM Bucharest). ICITPR- Ploiesti: dr. Savu Constantin and IITPIC (Bucharest): ing. A. Florea, ing. L. Vinaru; Academia of Economic Sciences (ASE) - Bucharest and Institute of Standards and Markeing – report approved by ICECHIM Bucharest. Final stiintific approval ing. G.Musca MICH

**Summary**

Have been elaborated: 20 laboratory technologies, 9 micropilot; 4 pilot processes **approved by central commisions on polymers and synthetic resins or at a ministry level**; Patented researches have been industrially experimented with good results. 2 technical assistance notes has been provided for the oder of a semi- and an industrial experimental installation for polymer waste pyrolysis and 2 economical notes have been elaborated for **the semi industrial instalations with capacity of 1000-5000 t/year.**

1. **1970:** contract 1668/9.02.1970. Characterisation of the synthetic fibres of the polymer blends of the binary and ternry copolymer blends. Correlation between structure and physico-mechanical properties of the Melana fibres. C. Vasile and H.A. Schneider -- beneficiary – CFS Synthetic Fibre Complex Savinesti. Have been established optima mixing ratios of copolymers assuring good properties of the Melana fibres that are dependent thermal analysis results
2. **1971:** Thermal behaviour of Melana fibres – explanation of the fabric stains nr 409/1971; beneficiary - CFS Savinesti
3. **1972:** New methods for copolymers characterization; beneficiary - CFS Savinesti
4. **1973:** Relathionships structure-conformation -stability of the macromolecular compounds Chemical Industry Ministry (MIC) and Ministry of Education Nr.12416/1973
5. **1974:** Compatibility study in binary and ternary systems. MIC
6. **1974:** Thermal behaviour and in solutions of the copolymers and blends MIC
7. **1974, 1975:** Possibilities of polymar waste valorization. colaboration with Physical Chemistry Department of Polytechnic University of Iasi; Beneficiary ICPCMP-Bucharest and UPMP-Iasi

**VALORIZATION OF POLYMER WASTE BY CHEMICAL /THERMAL PROCEDURES and ENVIRONMENT PROTECTION AND WASTE RECOVERY – financed by MIC, Ministry of Edication and Ministru of Environment**

8. **1976:** Laboratory technology for thermal valorization of Polymer Waste with special reference to polyethylene waste or polystyrene waste. Collaboration with department of Physical Chemistry of UAIC Iasi– C.P.Borzesti beneficiary
9. **1977:** Micropilot technological process for Valorization of Polymer Waste (Polyethylene and Polystyrene waste) - C.P.Borzesti beneficiary advised 0160<sup>7</sup>/10.10.1979 and 0221/28.1.1977
10. **1978:** (polyethylene, polystyrene and PVC waste and their binary mxtures) by incineration or chiminal procedures, two micropilot technological processes have been elaborated for C.P.Borzesti beneficiary. These processes have been advized/approved by beneficiary with documents S/144; 0152/22.11.1978;
11. **1979:** Continuous flux procedure at micropilot stage for valorization of Plastics Waste by incineration or chiminal procedures advised/approved by C.P.Borzesti beneficiary at 20 december 1979 nr S/163

12. **1979:** PVC waste recovery laboratory study
13. **1980:** Testing of the catalytic procedures for recovery of PS and PE waste; C.P.Borzesti beneficiary
14. **Project 1F0008.** Recovery of the polymer waste PE, PS and ABS and their mixtures by pyrolysis – continuous catalytic flux, micropilot approved by C.P.Borzesti beneficiary at 15.12.1980; nr S/80
15. Technical assistance for elaboration of the documents concerning the equipments projection/designed for the installation in fluidized bed - collaboration with ICECHIM – Bucharest unit.
16. **1981 project 1F0008:-** Influence of the impurities on the pyrolysis of polymer waste and
17. Technical assistance (ATP)- for elaboration of the technical-economic order note for achievement of the experimental modulus for the pyrolysis of the polymer waste –collaboration with IITPIC Bucharest - res Florea A.
18. **1981** Evaluation of the quantities of the reusable plastic materials in Romania. Collaboration with Academia of Economic Sciences (ASE) - Bucharest and Institute of Standards and Marketing – report approved by ICECHIM Bucharest 26.11.1981– elaboration of the order notes for technical-economic fundamentation and for achievement of the experimental modulus nrs: S/139; S/42.1981;
19. **1982. 1F0008:** Technological pilot process for pyrolysis of the polymer waste (PE,PS, PE and PS mixtures) with solid heating carrier approved by C.P.Borzesti beneficiary and ICECHIM commission for Polymers and Synthetic Resins. 2.12.1982
20. **1983** Laboratory study for the pyrolysis of ternary mixtures of the polymer waste; approved by Technical-Economic Commission of the C.P. Teleajen 708P/27.2.983. A place for installation has been approved on 08.04.1983
21. Elaboration of the technical-economic order note for achievement of the experimental industrial modulus for the pyrolysis of the polymer waste of 1000 t/year located at **CP-Pitesti** approved by **Investition Commission of ICMPP** on 29.11.1982 *and MICH* on 2.02.1983
23. **1977, 1982 and 1987 1AA005:** C-5 Resins; ICITPR- Ploiesti beneficiary. The application of the C-5 resins for rubber powder use. S/55; and Elaboration of the formulation for PVC – based carpets containing C-5 resins by using the processing by the gelation and calender press at Insulation Materials Manufacture Unit-Bucharest
23. **Hot-Melt-** applied additives for furniture industry – industrial testing at Iasi industry ICITPR- Ploiesti beneficiary-approved nr.S/136
24. **1F0008** Recovery of the atactic polypropylene (APP) by pyrolysis–micropilot technological process; CP- Teleajen Ploiesti Beneficiary, approved 708P/27.12. 1983;
25. **ATP:** Technical assistance for elaboration of the technical-economic order note for achievement of the experimental modulus for catalytic pyrolysis recovery of APP. T2/63785 collaboration IITPIC- Bucharest
26. **ATP -:**A single installation for pyrolysis of 1000 - 5000 t/year, for the polymer waste and non- retreaded tires
27. **1F0008:** Catalytic cracking of PPA in the mixture with cracking oil and Diesel oil-micropilot technological process. CP Teleajen Ploiesti beneficiary
28. The APP application as lubricant for PVC with good results semi-industrial tested at IPMP – Iasi with good results
29. **1984 1F028.** Experimental pilot modulus of pyrolysis with solid heating carrier for non-reprocessing polymer waste (solar PE foils) - CP Teleajen Ploiesti and Darmanesti Refinery beneficiaries– nrs s/143, S/401/1984; 164p.
30. **1985 - 1F0008.** APP decomposition on ZSM-5 CP Teleajen Ploiesti beneficiary
33. **Technical assistance** for elaboration of the technical-economic order note for achievement of the industrial installation for tyres with metallic cord and impurified PE waste. PPIMC-Iasi, ICECHIM and IITPIC –Bucharest T1 034901 and 5018/1985.– Bucharest; - Darmanesti Refinery beneficiary

34. **1986 - 1F0028.** Pyrolysis experiments at the pilot scale for the tyres with metallic cord including the changes for pilot installation – research groups PPIMC, ICEM and IITPIC – Bucharest. Registered documents S156/1986 and S384/1987.
35. **1987 - 1F0028:** Study of the toxicity of the products resulted from incineration and pyrolysis of polymer waste and the methods for their *analysis and neutralization* of toxic gases. S/36 and S/384.
36. 1988- 1F0028. a) Micropilot pyrolysis–technological process for tyres with metallic cord and impurified PE waste 3953/1988 and S/438/1988; b) Technological process at pilot scale for the achievement of the pyrolysis installation for tyres with metallic cord and unreproducible PE waste – discussed and approved on July 15 1988 by ICEM- Bucharest, with representatives from: MIC, CNST, ASE, approved at C.P. Brazi, with documents 167/20.09.1988 and 3953/1988 and S/438/1988 and Technico-Economic efficiency of the pyrolysis – authors PPICM-IASI (C. Vasile, M.Sabliovschi, G. Moroi, H. Darie, C.Zaharia), ASE- Bucharest - S/56 and S860/1988 and also **ICEM - Institute of Metalurgical Research – Bucharest** (P. Albastroiu, A.Paun, A.Mihaiescu, I. Mitran) and **designer** L. Vinaru from **ICECHIM/IITPIC Bucharest** elaborated a continuous flux technology for **recovery of PE/PS/ABS polymer waste by pyrolysis**. New pilot equipment with solid heat carrier of the PE, PS and/or ABS, PE/PS blends for waste valorization approved 2816/1982 on 2.12/1982 and 10.11.1982 by Central Chemistry Institute, *Polimers and Synthetic Resins and Petrochemistry commissions* **554/8.01.1982** for the design of the installation from presented on 8..04.1983 at „Polymers and synthetic resins” forum of the „Teleajen” Petrochemical complex to establish details on a of about 1000 t/year; beneficiaries CT of the C.P. Borzesti and C.P.Pitesti registration with **2899/1982**.
37. **1988** – extra agreement with DGEIFCA, Baneasa Giurgiu beneficiary, Recovery by pyrolysis of the waste of irrigation ducts
38. **1989 and 1990**– 1BF168 Technology for fabrication of profiles based polymer blends with PVC or semi-IPN and crosslinked IPN -. OCPMP- Bucharest beneficiary
40. **1989 and 1993** Procedure for recovery of bituminous sand in metallurgy. ICEM Bucharest; micropilot process approved on 15.11. 1989 and re-experimented at FORTUS SA and Laminor – Roman in 1993 C. Vasile, H. Darie, C. Zaharia
41. **1988** supplementary contract. Determination of the intrinsic viscosity for aged cardboards – ICEMENERG – Bucharest beneficiary
42. **1991-1994;** L17/1992 -Reciprocal influence polymer- environment. Supported by Ministry of Education and Science; beneficiary - Research Institute for Environment Engineering

### **C) European/International Contracts:**

- CEEPUS Networks. (2005 – present) Network CEEPUS PL105:** New Materials and waste recycling, C. Vasile, R.N. Darie, coordinator M. Kozlowski, Wroclaw University -Poland.
- East European Center of Excellence for Material Recycling*, members : C. Vasile, R.N. Darie, coordinator M. Kozlowski, Wroclaw University-Poland.
- 2003-2005. EUROLIGNIN Program:** *Coordination network for lignin OE standardization, production and applications*, coordinator Agrotechnological Research Institute, ATO – Holland ,with 26 partners: ILI Switzerland, GRANIT – **Switzerland**; Department of Pulp and Paper Chemistry and Technology, Sweden; INRA-The Institute National Agronomique Paris-Grignon, France, USB University of Basilicata, Italy, IFTH –Institute Textile de France, SCRI -Scottish Crop Research Institute, ASUC –France; ADIGENE France; NOVOZEMES A/S Denmark; KCL- Finland; INETTI- the Ministry of Economy State Laboratory – Portugal; KIRAM- Sweden; TRANSFURANS - Belgium; VTT Finland; EPFL – Federal School of Technology-Switzerland; RAG Rhodia Acetow GmbH –Germany; FFUB – Departement of Physiology, Faculty of Pharmacy – Barcelona-Spain; RVAU – Denmark; BIOCON – Bioconsult Austria; LSIWC – State Institute for wood chemistry – Latvia; NTUA –National Technical University of Athens-Greece; BAG – Germany; LRV Szerment – France.

*Have been elaborated the methods for standard lignin characterization. Still member of the ILLI*

4. **2000-2002**, “Influence of the Degradation Products of the Polymers on the Physiological Vegetative Processes of the Plants”, contract CNCSIS, supported by Mondial Bank, collaboration with Botanical Garden, Iasi, **C. Vasile, programme director** – 22 000 Euros.

5. **2004-2007 COST E 41**: COST Action E41 Analytical tools with applications for wood and pulping chemistry – Finland; Have been obtained 1 STMS for Popescu Mihaela at Riga Institute and participation at 2 meetings C. Vasile si G. Cazacu, Barcelona april 23-25 2005 ~ 3000 Euro = 108 mil. lei; *C. Vasile, member in management committee.*

6. **2004-2007 COST P12**; Structuring of Polymers – *Italy*: C. Vasile, *member in management committee.*

7. **2006- 2008. COST 868**: Biotechnical Functionalization of Natural Polymeric Materials “Bio-PM” C. Vasile , member in management committee.

8. **2008-2011 COST E54**: Characterisation of the fine structure and properties of papermaking fibres using new technologies- C. Vasile , member in management committee.

9. **2006- 2008. Bilateral collaboration Romania - Italy** “Modelling of the polymer structure and properties and coupling/release of bioactive substances by magnetic field application”. Instituto de Ricerca e tecnologia delle Materie Plastiche, Pouzzoli, Italia - Romania – dr. Sossio Cimmino, Clara Silvestre.

10. **2006-2008 Bilateral collaboration Romania-France** –Program Brancusi 2007-2009: *Elaboration des capteurs a ondes acoustiques” (Plascapt)* (nr. Dosar: 14883ph) University Le Mans – Franta, director grant prof. Fabienne Poncin Epailard: C. Vasile collaboration with University of Medicine and Pharmacy “Gr.T. Popa” Iasi, prof.dr. M. Pascu

11. **EUREKA E!3523 – Rec-Plastic – Ro / (2006-2008) and C295E/2010**: *Valorificarea polietilentereftalului si a altor polimeri secundari in repere de tip compozit si nanocompozit cu viata medie si lunga. EU: Plastics recycling technology using the remelting and restabilization method*, partners from Grecia and Polonia, project director from ICMPP: C. Vasile, valoare etapa 2007: 20 000 RON

12. **NaPolyNet FP7 2008-2011**: Seventh Framework Programme: *Setting up research-intensive clusters across the EU on characterization of polymer nanostructures*, C. Vasile member in management committee.

13. **COST FP0901**: Analytical Techniques (Tools) for Biorefineries. C. Vasile member in management committee.

14. **COST FP0904**: Thermo-Hydro-Mechanical Wood Behaviour and Processing- C. Vasile member in management committee

15. **FP0602**: Biotechnology for Lignocellulose Biorefineries (BIOBIO) – C. Vasile, member in management committee

16. **COST FA0904**: “Eco-sustainable Food Packaging based on Polymer Nanomaterials” Healthy food /Environmental sustainability. C. Vasile member in management committee Organization of the meeting:, Conference and WGs Meeting, June 28-29, 2010, IASI, Romania, “Petru Poni” Institute of Macromolecular Chemistry– C. Vasile opening ceremony

17. **E!4952- BIOPACKAGING, 2010 – 2013** New Technologies for obtaining of bioactive packaging project coordinator University Maribor Slovenia, C. Vasile - Romanian coordinator

18. **FP7-PEOPLE-2009-IRSES** - Biofuels from Solid Wastes grant–Project collaboration with Ege University Turkey and Okayama University, Japan, C. Vasile - Romanian

19. **IAEA grant –Vienna, grant Nr: 17689 / 2013. 2015-2018**: Ionizing radiation and plasma discharge mediating covalent linking of stratified composites materials for food packaging *project coordinator dr. Cornelia Vasile*, E. Stoleru, A. Irimia, R. Dumitriu, G. Ioanid, T. Zaharescu, 5000E.

20. **ACTIBIOSAFE 1SEE/30.06.2014. /C. 98 612E 2014 – 2019** Proiect international Romania-Norvegia EEA -Grants -: Improving food safety through the development and implementation of the active and biodegradable food packaging systems.- *project coordinator dr. Cornelia Vasile*,

finances responsible dr.R. Darie, M. Brebu, E. Butnaru, B. Muntenau, L. Profire, E. Stoleru, A. Irimia, D. Pamfil, R. Dumitriu.

21. **Proiect Erasmus + TL-IRMP 2014-1-PL01-KA203-003611, Erasmus + TL-IRMP:** Joint innovative training and teaching/learning program in enhancing development and transfer knowledge of application of ionizing radiation in materials processing. *Proiect (ICMPP partener proiect)/ dr. Cornelia Vasile;* team D. Pamfil, E. Butnaru, (ICMPP partener proiect)/337440.00 (total proiect) 44416.00 (ICMPP) 8068.2 Euro. (ICMPP)

22. **2012- 2015. COST TD1004** Theragnostics Imaging and Therapy: An Action to Develop Novel Nanosized Systems for Imaging-Guided Drug *Romanian coordinator C. Vasile*

23. **2015 –2018. COST MP1404** Simulation and pharmaceutical technologies for advanced patient-tailored inhaled medicines (SimInhale). Romanian coordinator C. Vasile

24. **2015 –2018 COST Action FP1405,** Active and intelligent fibre-based packaging - innovation and market introduction (ActInPak); Romanian coordinator C. Vasile

25.**ERA MNT –project 2014-2017** Innovative and eco-sustainable processing and packaging for safe and high quality organic berry products with enhanced nutritional value - EcoBerries M. E. Popa, A. Mitelut, M. Draghici, V.I. Popa, E.E. Popa, M. Râpă, P.Popescu, E.Grosu, J. T. Rosnes, C. Vasile, Romanian coordinator C. Vasile

#### **E) NEW HIGH PERFORMANCE POLYMER MATERIALS AND FOR MEDICAL USE**

1. **1998-1999.** New procedures for surface treatments of polymers - *supported by* Ministry of Research and Technology

2.**2001. MATNANTECH.** Elastomeric binary and ternary composites with controlled structures and special properties destined to obtain medical devices. Parteners cu SC INCERPLAST SA Bucharest - C. Vasile, programme director (team: G.C. Chitanu, V. Harabagiu, D.M. Suflet, S. Ioan, A. Chiriac, G. Cazacu, M. Brebu, R. Darie)

3. **2000 –2002.** New high performance materials with complex and contrrollable morphologies and special properties. supported by Ministry of Research and Technology - C. Vasile, programme director

4. Compatibility Studies of Polyolefins/Polystyrene Blends and Polyvinyl Chloride/Natural Polymer Blends supported by Ministry of Research and Technology by INCERPLAST SA-collaboration - C. Vasile, programme director

5. **2003-2005:** Interpolymeric Complexes based on H-bonding used for formulations with controlled release and/or targeting of the drugs , Etapa 2004, Cod CNCSIS 403, G.G. Bumbu director, C. Vasile 60 000 lei

6. **Orizont 2000:** Improvement of the depollution technologies and control of the pollution generated by polymer waste by treatment and reduction of their quantity. C. Vasile, programme director, Cazacu Georgeta; M. Brebu, Cojocaru Irina Elena, Pascu Mihaela Cristina, Lungu Maria, *Subtema A-3:* Ing. Darie Hristea, Doctorand chim. Darie Raluca Nicoleta, Op.chim. Hadambu Ovidiu – 60 mil.

7. New smart polymeric systems with applications in controlled release of the drugs and as thickening agents, **Grant T,** Beneficiar **ANSTI,** G.G. Bumbu program director, C Vasile, G. Cazacu – 20 mil lei

8. **2004-2006, Cod CNCSIS 1225 –** Reciprocal Influence of biodegradable materials/environment. Study of the physiological processes of the plants, Director proiect Mihaela Pascu Universitatea de Medicina si Farmacie „Gr.T. Popa” Iasi, G. Cazacu, C. Vasile, M. Dascalu, A. Cojocariu, Cod CNCSIS 1225 Etapa 2004. Preparation and characterization of synthetic/natural polymers blends., 560 mil. Lei

9. **2005 – 2008: CEEEX – CALIST** Natural multifunctionalized biopolimeric matrices for biocompatibilization of the synthetic polymers destined to medical applications. Partners Biology Institute Bucharest, stage 2005, C. Vasile, programme director, 800 mil.

10. **2005 – 2008: CEEEX, RELANSIN 3778:** New types of the micro- and nano-structured materials for new productions useful in buildings, agroalimentary safety and bioengineering 2005 - 2008, Partners - AMCESIT Bucharest, stage 2005, C. Vasile, programme director, G.G. Bumbu, N.C. Duncianu and E.I. Raschip, Valoare, 600 mil.=1380 E
11. **2004-2006: RELANSIN 1993:** Reindustrialization: New types of the polymeric compounds of high performance and special applications, Coordinator ICECHIM Bucharest, Stage 2004: ICMPP: C. Vasile, programme director, A. Stoleriu, A. Taranu, D. Hristea, Valoare 200 mil. lei
12. **2004 – 2006: Relansin 2108:** New biodegradable films based renewable resources with applications in agriculture, packaging and other products with short life-time, C. Vasile director program, Total contract 1.7 miliarde ing. Eleonora Nemes, Ing. Zina VULUGA, chim. Michaela Iorga, ing. Dorel Florea, O. Padurar, G. Cazacu, A. Stoleriu, H. Darie.
13. **CERES 2004 – 2006:** O new category of materials based renewable resources, 2005-2003: Blends and biocomposites containing natural polymers, Cazacu Georgeta– director program, Vasile C., Pereus O., Totolin M., Ciolacu D., Constantinescu G., Op.chim. O. Popovici, Pascu M., Crivoi F., Cojocariu A. - 160 mil. lei.  
IDEI 17/2007
14. **2005 – 2008, CEEEX – VIASAN -** Innovative degradable, biocompatible and bioactive architectures based on natural and synthetic polymers CEEEX – VIASAN/2005, C. Vasile director program – 10 partners, Universitatea de Medicina si Farmacie „Gr’T’ Popa” „, Universitatea „Gh. Asachi”, Universitatea „Al.I.Cuza” - Iasi , INCERPLAST SA Bucuresti, Institutul de Biologie, Iasi, Institutul de Fizica Tehnica- Iasi, 15 miliarde
15. **2005 – 2008, COMBREG,** Researchers for the recovery of the raw materials and fuels from renewable resources.–C. Vasile, programme director; Cluj Universitatea, 4 miliarde „P. Poni”
16. New smart, multi-responsive materials with applications in medicine, pharmacy and industry
17. 2007 – 2010. New therapeutic systems nitrogen oxid donors with controlled release  
**NOSITEC 41-017/2007; 86339/2010 si IDEI17/2007.**– responsabil proiect, coordinator N.Profire programme director, Universitatea de Medicina si Farmacie – Iasi, C. Vasile, partner “P.Poni” director 6 miliarde.
18. **2008-2011-** Experimental studies concerning the local therapy of the inflammatory pains with analgesics released from various hydrogels matrices. cod ID\_2561/, UMF Iasi, dr. A. Neamtu programme director and ICMPP /Iasi, C. Vasile,. Beneficiar CNCSIS.
19. **2008- 2011 - ID 2541.** Studies related to developing of the piezoelectric biosensors using a polymeric substrate, M. Pascu – UMF Iasi, C. Vasile, programme director, ICMPP – Iasi.
20. **PN II- 164/2012 –BIONANOMED -** Antimicrobiene bionanocompozite for medical applications.
21. Innovative therapies in wounds and burns treatment – preclinical evaluation, Project of the „Gr. T. Popa” Medicine and Pharmacy University of Iași; members of the ICMPP team: C. Vasile, R.P. Dumitriu.

### **Books and Chapters in the published Books - selected:**

1. M. Râpă and C. Vasile (author), Processing and Properties of Chitosan and/or Chitin Biocomposites for Food Packaging. Chapter 11 p.291 in Food Packaging: Advanced Materials, Technologies, and Innovations. E-book  
Eds. S. M. Rangappa, J Parameswaranpillai, S. M. K. Thiagamani, S.Krishnasamy, S.Siengchin CRC Press 09/25/2023; ISBN-13:9780367556006
2. C. Vasile (Editor and Author): **Polymeric Nanomaterials for Nanotherapeutics.** Elsevier, Amsterdam, Netherland, **2019**; ISBN 978-0-12-813-932-5, <https://doi.org/10.1016/C2017-0-00607-9>; 527 pages. Cited by 260
3. D. Pamfil, C. Vasile (Author), **Nanogels of natural polymers**, Chapter 4: in "Polymer Gels: Perspectives and applications. Gels Horizons-From Science to Smart Materials”, editors: V. K. Thakur, M. K. Thakur, S. I. Voicu, SPRINGER-VERLAG, Singapore, ISBN: 978-981-

- 10-6080-9; 978-981-10-6079-3, ISSN: 2367-0061, DOI: 10.1007/978-981-10-6080-9\_4, **2018**, pp. 71 - 110, WOS: 000441503000005 Cited by 24
4. D. Pamfil, M. T. Nistor, C. Vasile, Chapter 13: **Collagen-based materials for pharmaceutical applications**, in "Handbook of Polymers for Pharmaceutical Technologies: Volume 3, Biodegradable Polymers", editors: Vijay Kumar Thakur, Manju Kumari Thakur, John Wiley & Sons, Inc., Scrivener Publishing LLC, Hoboken, NJ, USA, ISBN: 978-1-119-04142-9, DOI: 10.1002/9781119041450.ch13, **2015**, pp. 439 - 481, WOS: 000385867800014.
  5. C. Vasile (Editor and Author) - **Handbook of Polyolefins**. Second Ed (2000, CRC Press) 2nd Edition; First Published 2000; eBook Published, 21 June 2000; Boca Raton; DOI <https://doi.org/10.1201/9780203908716>; Pages 1032; eBook ISBN 9780429208287; Translated in Chinese language; Cited by 497; The first Edition has been edited by C. Vasile and R. B.Seymour, Marcel Dekker Inc. July, New York, 1993.
  6. C. Vasile(Editor and Author), M. Pascu **Practical Guide to Polyethylene**, Smithers Rapra Publishing, 2005 - ISBN-10. 1859574939 ISBN-13. 978-1859574935 • April 8, 2005 RAPRA Technol. Press;
  7. C.Vasile (Editor and Author), Gennadiĭ Efremovich Zaikov; **Environmentally degradable polymer materials based on multicomponent polymeric systems** - Brill Academics Publisher. Holland, ISBN: 978 90 04 16410 9 ISBN-10: 90 04 16410 3; January 2009;
  8. C.Vasile, (Editor and Author) M. C. Pascu, **Surface Properties of Polymers**, Publisher: Research SignPost Intern, India; ISBN: ISBN: 987-81-308-0142-1 (2007);
  9. R. Darie, C. Vasile, M. Kozłowski, Eds **Compatibilization of Complex Polymers Systems**. Reactive compatibilization-cum-impact modification applied to virgin polymers and waste, Lambert Academic Publishing, 2011, ISBN: 978-3-8443-1225-6, Saarbrücken, Germany, 283 pages.
  10. C. Vasile, (author) M.Brebu, **Recycling of waste of electric and electronic equipment (WEEE)**. Chapter 3 pp. 91-140. in Online book: Environment Research Updates Recycling: Processes, Costs and Benefits, Ed. Charlene J. Nielsen Pages: 426.pp ISBN: 978-1-61209-507-3, Nova Science (2011)
  11. C. Vasile (editor and author), E. Paslaru, M. Baican. **Applications of the polymers in biosensors fields**. ISBN: 978-606-544-075-3; 2011, Editura UMF Iasi, 346 pages,6 chapters
  12. C. Vasile, R.P. Dumitriu, (Editor and Author) **Smart Polymeric Materials**. PIM, IASI, 2008, ISBN 978-606-520-068-5, 319 pages
  13. C. Vasile (Editor and author) and G.E. Zaikov, Eds. **New Trends in Natural and Synthetic Polymers** Nova Science, New York, 2006 ISBN 9781594547720 <http://novapublisher.com>, 2006. H-bonding Interpolymer Complexes between Neutral Polysaccharides and Polycarboxylic Acids. X. Influence of the Chemical Structure of the Components. G.-G. Bumbu. C. Vasile, Chapter 2. P.33-55 and Thermal characterization of lignins. C. Vasile, M. C. Popescu, A. Stoleriu, R. Gosselink Chapter 7, p135-163.
  14. C. Vasile, A. Chiriac, L.E. Nita, Eds. **Polimeri degradabili si biocompatibili, 2006**, Technopress. Chapters 1-8, 312 pag.
  15. A.K. Kulshreshtha and C. Vasile (Editor and author), Eds. **Handbook of Polymer Blends and Composites**, RAPRA Technol. Press, 6 volumes; ISBN 978-1-85957-249-8; 256 citari Uploaded by station 43.cebu on September 11, 2024 <https://archive.org/details/handbookofpolyme0004unse/page/366/mode/2up> Publisher Shrewsbury : Rapra Technology.
  16. C. Vasile (editor and author), M.E. Calugaru, M. Sabliovschi, A. Stoleriu, E. Mihai, **Thermal Behaviour of Polymers, Romanian Academy Press**, (Editura Academiei RSR), 1980, 1.1. C. Vasile si E.M. Călugăru Chap. I.: Thermal Behaviour of Polymers, p. 15 – 51.
  17. Experimental Methods for Chemical Kinetics with computerized data interpretation. N. Hurduc, L. Odochian, C. Vasile, S. Ungureanu, D. Galea, 1979, 1983, IPI-Iasi, Rotaprint.

**Communications:** 869

**Invited Conferences and Courses - Selected:**

1. **Courses: ERASMUS Reims France September 2016.** The textbook **APPLICATIONS OF IONIZING RADIATION IN MATERIALS PROCESSING** of the courses has been elaborated and printed in Radiation chemistry of organic solids, **Applications of ionizing radiation in materials processing**, edited by Yongxia Sun and Andrzej G. Chmielewski, Institute of Nuclear Chemistry and Technology, Warsaw 2017; ISBN 978-83-933935-8-9, ISBN 978-83-933935-9-6 (Volume 1) ISBN 978-83-946412-0-7 (Volume 2) e- book: ([http://www.ichtj.waw.pl/ichtj/publ/monogr/m2017\\_1.htm](http://www.ichtj.waw.pl/ichtj/publ/monogr/m2017_1.htm)) 3 chapters have been published. *The following courses have been taught*
2. Irradiation assisted polymer surface functionalization – Bioactive Compounds Immobilization, C. Vasile
3. Irradiation assisted polymer surface functionalization – Bioactive Compounds Immobilization. C. Vasile
4. Relevant methodology for characterization of radiation exposed polymeric materials. C. Vasile
5. Influence of radiation on biological media. C. Vasile
6. Enhanced degradability of inert materials by using gamma or plasma exposure. C. Vasile
7. **COST action FA0904. September 24-25, 2013**, Poly (vinyl alcohol) composites and nanocomposites for food packaging. C. Vasile, E. Părpăriță, M. Baican
8. **7-th ISFR'2013. 23-26 October, 2013** C. Vasile member in Scientific Committee [www.isfr2013.org](http://www.isfr2013.org), , Sect.IV Plastics conversion, **invited talk (conference) and** Gas production by steam gasification of PP/biomass composites in a dual-bed reactor, Md. Azhar Uddin, T. Watanabe, Yoshiei Kato, Elena Parparita, C. Vasile, J. Yanik,
9. **NaPolynet meeting Athens, Greece, 13-15 mai 2009:: Demonstration (training) course: Characterization methodology and tools for new polymer nanostructured materials**, C. Vasile (course): Mechanical and thermal characterization of nanostructured polymeric materials.
10. **European Seminar FP7: The implementation of research potential of the Latvian State Institute of Wood Chemistry in the European Research Area (WOOD-NET) Grant Agreement No 203459, Riga, 27 octomber 2009** - C. Vasile Invited lecture, Green polyvinylalcohol / starch nanocomposites. and New Materials Containing Lignin Nanoparticles; G. Cazacu, D. Ciolacu, R. Darie, L. Nita, C. Vasile
11. **The 11<sup>th</sup> Symposium on Feedstock Recycling of Japan – FSRJ11, September 16 – 17, 2008**, Kumamoto, Japan: Status and perspectives in plastic production, consumption and plastic waste management in Romania; conference C. Vasile, M. Brebu, F. Zielinschi,
12. **E-MRS Fall Meeting 2008: Workshop:** 15-20 september, Warsaw *Current trends in nanostructured polymer and sol-gel films*, Architecture and composition influence on the properties of some smart polymeric materials designed as matrices in drug delivery systems *invited lecture*; C. Vasile, G-G. Bumbu, R. P. Dumitriu
13. **14th- Rolduc polymer meeting, Kerkrade, The Netherlands.** New smart polymeric materials, C. Vasile; invited lecture May 18-21 , 2008.
14. **ISFR'2007 Jeju, Korea September 16 – 20, 2007 Feedstock Recycling of Plastics –plenary talk** for the congress **opening Pyrolysis of the Printed Circuit Boards PCB**. C. Vasile, M.A. Brebu, H. Darie T. Karayidirim, and J. Yanik
17. **Monterrey, Mexico, UANL, 23 January, 2006** Some new aspects on Polymer Waste Recycling / Recovery, C. Vasile, invited lecture
18. **Monterrey, Mexico, UANL, 24 January, 2006.** Some new solutions for valorization of the biomass components as high-value materials and chemicals, C. Vasile, G. Cazacu, D. Ciolacu, M.C. Pascu, M.C. Popescu, invited lecture
19. **ARCUS programme "Physico-chimie de l'atmosphere: formation par la recherche", Organized by Univ. "Al.I. Cuza" Iasi, supported by Ministere des Affaires Etrangeres de la**

*France et la Region Nord Pas-de-Calais, 2-14 July 2006*, Polimeres degradables. Applications a la protection de l'environnement, C. Vasile, Ecole d'ete, Physico-chimie de l'atmosphere: des experiences de laboratoire aux campagnes de terrain, Iasi, Romania (lecture), L10, p.25, p.8, C. Vasile member in organizing committee, awarded by a diploma

21. *EUROGREEPOL The First European Summer School on Green Chemistry of Polymers, 21 – 27 August 2005*, Polymer Degradation and Waste Recycling/Recovery, C. Vasile, Iasi, Romania, Book of Lectures, p. 46 – 70

22. *The 3rd ISFR in Karlsruhe (Germany) 23-25 September, 2005*. Pyrolysis of the thermoplastic and thermosets fractions of used computers and liquid fraction upgrading, C. Vasile, M.A. Brebu, H. Darie T. Karayidirim, and J. Yanik,

24. *EGE University, Faculty of Science, Chemistry Department, Izmir – Turkey, 3 august 2004*. Natural Polymer/Synthetic Polymer blends and grafted copolymers. C. Vasile

### Conventions:

1. Two CAER meetings; 2. The **Weizman** Institute of Science, Israel, Ministerul Invatamantului din Israel. 1998- prof. E. Katzir and prof.A. Warzawsky – polymer compatibility; UV stabilization of polymers, polysulfones; 3. **LAVAL University, Quebec, Canada** - prof. Ch. Roy - pyrolysis of polymer wastes-2000l; 4. **Queens University Canada** - prof. A. Nathanson and prof W. Baker – Compatibility of polymer blends, 2000 ; grant offered by Research Conseil of Canada

5. **Okayama University, Faculty of Engineering, Japan** – prof. Y. Sakata – pyrolysis of polymer wastes, 2004;

6. **Universitatea Massachusetts – Lowell – USA**. prof. R. Deanin, Polymer Waste Valorization and Environment protection. Single use polymer wastes (medical syringes) 1994-1995; University of Southern Mississpi, prof. RB. Seymour, polyolefins; 7. **Universidad Autonoma de Nuevo Leon, Monterrey, Mexico**, Natural and Synthetic Polymer Waste including Biomass Recycling and Recovery, - Prof. Rosa Miranda 2006l 8. **China, Chinese Academy of Sciences, Changchun Institute of Applied Chemistry**, State Key Laboratory of Polymer Physics and Chemistry - **Nanocomposites**, prof. dr. Wei Jang ; 9. **Universite Le Mans, France** “Elaboration de captateurs a ondes acoustiques PVDF” Drs. Fabienne Poncin Epailard and D. Durand-Debardot. ; 10. **Polytechnic University of Wroclaw, Poland** –Program CEEPUS – Advanced polymer materials and recycling of polymer waste; 11. **Italy – Instituto de Ricerca e tecnologia delle Materie Plastiche, Pouzzoli, Italia** Development of polymer based materials for eco-sustainable packaging,– dr. Clara Silvestre; - Italy 2006- 2008. Bilateral collaboration Romanian Italy

“Modelling of the polymer structure and properties and coupling/release of bioactive substances by magnetic field application”. - dr. Sossio Cimmino, Clara Silvestre; 12. Greece – Polymeric materials for medical and pharmaceutical purposes, **Universitatea din Patras Grecia – prof. Staikos**, 2002; prof. Ioannis Zuburtikudis – University of West Macedonia, Food Packaging; 14. **Japan – Okayama University**, Prof. Y. Sakata – Pyrolysis of polymer waste; 17. **Budapest Univeesity** – dr. Bela Pukansky and Emilia Csziar– Compatibilizarea polimerilor and Biofunctionalization; 19. **Turkey – Ege University, Chemistry Department**, Pyrolysis of polymer waste and utilization of pyrolysis products in petrochemical processes. - Prof. Jale Yanik, 2002 – Marie Curie grant. 20. **Turkey – Ege University, Chemistry Department, Leather Department**, PhD Theses in co-tutelle. - Prof. Ozcan Sari; 21. **Slovenia – Maribor Univesity, Chemistry department**, - Biopackaging - ass. Prof. L. Fras

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### National collaborations. Academic institutions

1. – “Al. I. Cuza” University, Iasi, Romania - prof.Gh. Popa - treatment of polymer surface in plasma and electron beam; 2. Universitatea Tehnică “Gh. Asachi” Catedra de Tehnologie Chimica- Prof. P. Onu – Catalytic systems for polymer waste degradation; 3. “Gr. T. Popa”, Medicine and Pharmacy University – Pharmaceutical Chemistry, - Prof dr. L. Profire and M. Pascu. New drugs with controlled release and Surface Phenomena; 4. Compatibility studies for

Polyolefins/Polystyrene blends and Polyvinyle Chloride /Natural Polymer blends supported by Ministry of Research and Technology by INCERPLAST SA- C. Vasile, programme director 2001.

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