

**PERSONAL DETAILS**

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**EXECUTIVE SUMMARY**

- **Expertise in:** bioengineering, biophysics, microfluidics, micro & nanofabrication,
- **Current research directions:** Bioengineering, Nanomedicine, Point of Care Testing, Transdermal Drug Delivery, Organ on a chip, electronic Skin (eSkin)
- **Lead and work on different projects related to** Bioengineering, MEMS, BioMEMS,
- 107 journal articles (91 in peer review journal) 37 invited, keynote, plenary talks or seminars,
- Publication in relevant journals such as: Science Translational Medicine, Biomaterials, Chemistry of Materials, Trends in Analytical Chemistry, Lab on a chip, Sensors and Actuators B: Chemical, Electrochemical Acta, Analytical Chemistry.
- **Member of the Academy of Romanian Scientists** (from June 2013)
- **Member of the Romanian National Council for Attesting Titles, Diplomas and Certificates-** CNATDCU – Section: Chemical Engineering (2016-2018, 2020-...)
- Member of the “Editorial board”: *IEEE Transaction on NanoBioscience* (from 2020); *Micromachines* (from 2020), *Informacije MIDEM-Journal of Microelectronics, Electronic Components and Materials –Slovenia* (from 2012); Annals of the Academy of Romanian Scientists (2021), Series on Science and Technology of Information (from 2009); Journal of Experimental and Theoretical Analyses, Journal of Fluids /Hindawi (2013-2017); Transactions on Fluid Mechanics/WSEAS (2013-2015).
- **Setup the IBN BioMEMS cleanroom (2003-2004) and Cleanroom Manager (2003-2017)**
- **Setup the “Micro- and Nanofluidic Lab” in IMT Bucharest (2010-2014) and “Scientific Director” of the lab**
- **Guest Editor** of a Special Issue in “Micromachines”(2019)- “Nanoparticles on Microfluidic Platforms” (2020)- “Frontiers in Cellular and Infection Microbiology”: “Point-of-Care Testing for Infectious and Foodborne Pathogens” (2020)
- **Referee reviewer** for 69 scientific journals: ACS Advanced Materials & Interfaces, Advances in High Energy Physics, AIP Advances, Analytical Chemistry, Analytical and Bioanalytical Chemistry, Analytical Methods (RSC), Applied Sciences (MDPI), Bioengineering (MDPI), Biofabrication, Biomicrofluidics, Biomedical Physics and Engineering Express, Biotechnology, BioTechniques, Cancers (MDPI), Chemica Oggi-Chemistry Today, Coatings (MDPI), Colloids and Surfaces A: Physicochemical and Engineering Aspects, Current Analytical Chemistry, Current Applied Physics, Current Drug Delivery, ECS Journal of Solid State Science and Technology, Electrophoresis, European J. Physics-Applied Physics, Expert Opinion On Drug Safety, Frontiers in Nutrition, Frontiers in Bioengineering and Biotechnology, IEEE Sensors, IEEE Transactions on NanoBioscience, Informacije MIDEM, Int. J. of Environmental Analytical Chemistry, Int. J. of Physical Sciences, Int. J. of Molecular Science, J. of Bioengineering, J. of Biological Engineering, J. of Electrochem. Soc., J. Electrical Engineering and Electronic Technology (JEEET), J. Electrostatics, J. of Microelectromechanical Systems (JMEMS), J. of Fluids, J. Micromech. & Microeng., J. Nanoengineering & Nanosystems, J. Nanomaterials, J. Optoelectronics and Adv. Mat., J. Physics: Condensed Matter, J. Physics D: Applied Physics, J. Vacuum Science and Tech. A, J. Vacuum Science and Tech. B, J. od Visual Experiments (JOVE), Lab on a Chip, Microelectronic Engineering, Microsystem Technologies, Microfluidics & Nanofluidics, Micro & Nanosystems, Nature Communications, Polymers (MDPI), Proc. of the Institution of Mechanical Engineers-Journal of Nanoeng. & Nanosystems, RSC Advances, Scientific Reports (Nature), Sensors & Actuators A: Physical, Sensors & Actuators B: Chemical, Sensors Journal (MDPI), Sensors and Materials, Smart Materials Research, Thin Solid Films, Therapeutic Delivery, Thermal Science, Trends in Analytical Chemistry, Water Research.
- **External reviewer (grant applications):** The Innovation and Technology Commission, (Hong Kong), QNRF (Qatar National Research Fund), ASTAR (Singapore), National Science Center -OPUS founding scheme (Poland), UEFISCDI (Romania), Swiss Cancer League.
- **Awards:** „Stefan Odobleja” Award of Academy of Romanian Scientists in 2019 for the work Recent advances in microfluidics methods in cancer liquid biopsy”, *Biomicrofluidics*, vol. 13, issue 4, art. no. 041503, 2019; **3 Best Paper Awards** for papers presented at international conferences;
- **Member** of the “Scientific Committee” and “Session Chair” at different conferences
- **Figures of merit** @01/04/2021: (1) ISI Thomson: 2798 citations/134 documents, H-index: 33 (Researcher ID: [J-8986-2019](https://orcid.org/0000-0001-7042-5248)); (2) SCOPUS: 3178 citations/138 documents, H-index: 35 (Author ID: 8571916600) (3) Google Scholar: 4575citations/170 documents, H-index: 39; Orcid ID: 0000-0001-7042-5248

**PRESENT AND PREVIOUS APPOINTMENTS:**

- **01.04.2021- PhD supervisor- Faculty of Chemical Engineering and Biotechnologies, University “Politehnica” of Bucharest.**

- **18.06.2019-present- National Research and Development Institute for Microtechnology**

Position: *Senior Research Scientist*

Project related to: IoT PCR, self-assembled nanoparticles, Organ on chip, electronic Skin

Grants:

- Advanced techniques and increasing performance in the early detection of SARS-CoV-2 virus (2020-2021)- (only one grant accepted from 18 applications) (2020-2021)- “Solutii 1”
- Paper-based microfluidic platform for the concentration and amplification of nucleic acids (HEAD-NA) –(2021-2023) - PCE 2020

- **17 April 2017- 17.04.2019 BIGHEART, National University of Singapore**

Position: *Senior Research Scientist (working directly under the director of the institute -prof Luke P. Lee)*

Projects related to Photonic PCR, Perfusion cell culture microfluidic chips, Nuclei Acids Amplification and Testing using paper-based microfluidics.

Other activities: setup Medical IC lab facilities

- **1.03.2017-31.03.2017- National Research and Development Institute for Microtechnology**

Position: visiting scientist

Project: Self-assembling of fluorescent nanoparticles using hydrodynamic focusing

- **26.05. 2003- 31.01.2017: Institute of Bioengineering and Nanotechnology, Singapore**

Positions: *Senior Research Scientist (2006-2017) working under different groups such as Synthetic Biosystems, Cell and Tissue Engineering, Biomedical Devices; Research Scientist (2003-2006)- Biomedical Devices*

Projects /grants:

Successfully led and/or contributed to:

- Microneedle Array for Transdermal drug delivery
- Dielectrophoresis Cell-Bead Binding for Gene Extraction
- Engineering Complex Tissues with Spatial and Temporal Control of Micro-Environmental Cues
- Circulating Tumor Cells Isolation for Non-Invasive Cancer Diagnosis and Monitoring

External grants:

- JCO grant (with IMCB, Singapore) “Development of a Human Liver-Vascular Cell-Based Microfluidic Platform to Evaluate Anti-Antherogenic Effects of Nutraceutical”; (2014-2016)

Engage in the BMRC-SERC Joint Diagnostics Grant 2014-2016 related CTC’s isolation

- Bilateral Singapore-France research grant: “Microfluidic Directed Self-Assembly of Viromimetic Nanomachines” under Merlion Program with CNRS-Paris 2010-2011,

- French grant: (PICS2014): Kinetically-controlled assembly of DNA-based nanoparticles by microfluidic device for gene delivery applications (2014-2017)

- Industrial collaborative project: Deeply engage in an industrial collaboration with “Delta Electronics Inc” related food safety Delta-IBN Life Science and Diagnostics Lab

- Industrial collaborative project with Johnson and Johnson

Managerial activity: Setup and manage the IBN- BioMEMS lab, (2003-2017)

Training/courses: CITI Program University of Miami: Responsible Conduct Research, & Human Subject Research.

- **20.07.2010- 20.01.2014: National Research and Development Institute for Microtechnology**

Position: *Visiting PI & Scientific Director of L10 (Micro & Nanofluidic Lab)*

Grant: PI for an EU funded project: “Microfluidic Factory for Assisted Self-Assembly of Nanosystems”

Managerial activities:

- Setup & Lead the “Microfluidic & Nanofluidic Lab” (investments of €600K in IMT cleanroom facilities)
- Lead the above-mentioned project
- Organized a seminar on “Plasma processing and Wafer Bonding” (15 June 2011)

Industrial related activity: Design and XeF<sub>2</sub> dry etching system

- **21.05.2001 – 23.05.2003 Nanyang Technological University (Singapore)**

Position: *Post-Doctoral Fellow, School of Mechanical and Production Engineering*

Projects /grants:

- Involved in 3 *internal projects* (wafer level packaging, microphone, and accelerometer).
- Industrial collaborative project: “RF microrelay” with MAXIM (USA) - S\$1mil.

Other activities:

- Setup standard fabrication process for wet etching glass, PECVD -amorphous silicon, silicon and glass wafer thinning (wet process), eutectic Au-Si wafer-to-wafer bonding, and anodic bonding.

- **1.03.1990- 20.05.2001: I.C’s Division, Baneasa SA (Bucharest, Romania)**

Positions: *R & D Engineer, Process Engineer in different departments (Packaging, Wafer fab)*

Main achievement: optimization and automatization of the IC packaging, setup fabrication of pressure sensors:

Research grants: Successfully led and worked on 3 projects founded by Romanian Agency of Science

- **1.01.2000- 30.04.2001- MicroSi SRL**

Position: *CEO & owner* “MicroSi” was a spin-off with my work from Ph.D. on pressure sensors.

- **1.10.1989- 15.03.1990: SARO S.A. (Targoviste, Romania), Tool Engineering Dept.**

Position: *Design Engineer*

Achievement: Improving mechanical design skills

## EDUCATION

**2021 Habilitation** - University “Politehnica” of Bucharest- Faculty of Applied Chemistry and Material Science  
Thesis: Micro- and Nanotechnologies for Chemical Engineering”

**1999 Ph.D.** - “Suma cum laude” from University “Politehnica” of Bucharest – Faculty of Mechanical Technology  
Thesis: “Contribution on design and technology of silicon pressure sensors”

**1989 B.Sc./M.Sc.** - University “Politehnica” of Bucharest – Faculty of Mechanical Technology- Graduation score: 93%  
Final Year Project: “Application of holographic interferometry in mechanics”.

## TEACHING, SUPERVISING & MENTORING

### Lectures:

- Visiting Professor- Summer School at Northwestern Polytechnic University, Xi’an, P.R. China - “Introduction to Microfabrication” – 8 lectures of 2 hours with final assessments 27 July-9 August 2019.
- Industrial lecturer: “Mechatronics design” – National University of Singapore - MCH5004 (August 2004, August 2005 and August 2006).
- Industrial lecturer: “Microsensors and microactuators”- National University of Singapore – ME4284 (2005-2015)- 2 lectures every year one related to” Microfabrication” the other one related to my current research
- Lecturer - "Safety Training Course" (NTU 2001-2003)
- Lecturer - "Introduction in MEMS" (Course dedicated for training persons from industry and Polytechnics) (2001-2002).

### Graduate students:

- Co-supervision of Ph.D. students:
  - Liming Yu - National University of Singapore - (graduated in 2007)
  - Deepak Choudhury – National University of Singapore (graduated in 2012)
  - Wen Hao Tong - National University of Singapore (2015)
  - Fang Yu - National University of Singapore (2016)
- Co-supervisor for two “Master of Science” students: Jia-Shen Wei (NUS graduated in 2005), and Yang Jian Jun (NTU, graduated in 2003)
- Supervisor of one attachment student (Ph.D.) during GBP program: Felicia Celeste Loe (6 months)
- Supervisor of one attachment student (Master): Elena Barbarini (Italy)-6 months- “Polytechnico di Turin”
- External evaluator for PhD thesis:
  1. Ville Saarela -Aalto University, Department of Materials Science and Engineering-2011,
  2. Ling Siang Hooi -Nanyang Technological University, School of MAE, Singapore-2012,
  3. Jaspreet Singh Kochhar -National University of Singapore-2013.
  4. Ruchi Tiwari- Indian Institute of Technology, School of EEE, Delhi, India- 2014.
  5. Lim Chun Ping – Nanyang Technological University, School of MAE-2015.
  6. Li Hairui- National University of Singapore – Department of Pharmacy – 2016
  7. Rebecca Soffe –School of Engineering, Royal Melbourne Institute of Technology(RMIT), Australia-2017
  8. Peter Thrugood –School of Engineering, Royal Melbourne Institute of Technology(RMIT), Australia-2018
  9. Lim Seng Han- National University of Singapore – Department of Pharmacy (2018)
- External evaluator QE –Ph.D.:
  1. Jaspreet Singh Kochhar – National University of Singapore – Department of Pharmacy (2010),
  2. Li Hairui- National University of Singapore – Department of Pharmacy (2013, 2016),
  3. Himanshu Kathuria- National University of Singapore – Department of Pharmacy (2015, 2017).
  4. Lim Seng Han- National University of Singapore – Department of Pharmacy (2016)
- External evaluator Master thesis:
  - Michael Kurdzinski–School of Engineering, Royal Melbourne Institute of Technology (RMIT), Australia (2017)

### Undergraduate students:

- FYP co-supervisor: 2006 (together with A/P Francis Tay - NUS): Ong Poh Lam, Ong Yan Ying, Chan Shen Jau; 2007(together with A/P Francis Tay – NUS): Maria Ong and Pan Yang; 2007 (together with A/P Daniel Poenar – NTU): Eun Tan Yu; 2008 (together with A/P Francis Tay – NUS): Hoirul Ismail B Ya’Akop
- IBN industrial attachment students (6 month): Jenny Puttri Halliman (NTU)- 2012, Anik Islam Badhan (NUS)-2015
- JC student: Zhao Feiyu (Nanyang Girls’ High School), project “Nanoparticles synthesis using microfluidics”- Finalist in 2017 @ Singapore Science and Engineering Fair.

## PUBLICATION LIST

## JOURNAL PAPERS

Peer-reviewed publications under ISI-web of Science (*Legend: \* = corresponding author*)

1. G.G. Pircalabioru, F.S. Iliescu, G. Mihaescu, A.I. Cucu, O.N. Ionescu, M. Popescu, M. Simion, L. Burlibasa, M. Tica, M.C. Chifiriuc, C. Iliescu\* "Advances in the rapid diagnostic of viral respiratory tract infections," *Frontiers in Cellular and Infections Microbiology*, 2022 vol. 12:, art. No: 807253.
2. G. Mihaescu, M.C. Chifiriuc, C.O. Vrancianu, M. Constantin, R. Filip, M.R. Popescu, L. Burlibasa, A.C. Nicoara, A. Bolocan, C. Iliescu, G.G. Pircalabioru, "Antiviral immunity in SARS-CoV-2 infection: from protective to deleterious responses", *Microorganisms* 9, 2021
3. F.S. Iliescu, A.M. Ionescu, L. Gogianu, M. Simion, V. Dediu, M.C. Chifiriuc, G.G. Pircalabioru, C. Iliescu\* "Point-of-Care testing-the key in the battle against SARS-CoV-2 pandemic", *Micromachines*. 2021; 12, issue 12, art. no:146
4. A-C. Bunea, V. Dediu, E.A. Laszlo, F. Pistrițu, M. Carp M, F.S. Iliescu, O.N. Ionescu, C. Iliescu\* "E-Skin: The Dawn of a New Era of On-Body Monitoring Systems" *Micromachines*. vol. 12, issue 9, 2021, art. no:1091.
5. G. Mihaescu, M.C. Chifiriuc, C. Iliescu, C.O. Vrancianu, L.-M. Ditu, L.G. Marutescu, R. Grigore, Ș. Berteșteanu, M. Constantin, G. Gradisteanu Pircalabioru, SARS-CoV-2: From Structure to Pathology, Host Immune Response and Therapeutic Management. *Microorganisms* 8, 2020, art. no: 1468.
6. M. Ni, G. Tresset, C. Iliescu\* C. Hauser, Ultrashort peptide theranostic nanoparticles by microfluidic-assisted rapid solvent exchange, *IEEE Transactions on NanoBioscience*, vol 19 (4), 2020, pp. 627-632,
7. F. Yu, Y.T. Goh, H. Li, N.B. Chakrapani, M. Ni, G.L. Xu, T-M. Hsieh, Y-C. Toh, C. Cheung, C. Iliescu\* H. Yu "A vascular-liver chip for sensitive detection of nutraceutical metabolites from human pluripotent stem cell derivatives" *Biomicrofluidics*, vol. 14, issue 3, 2020, 034108,
8. H. Zhu, P. Podesva, X. Liu, H. Zhang, T. Teply, Y. Xu, H. Chang, A. Qian, Y. Lei, Y. Li, A. Niculescu, C. Iliescu\* P. Neuzil, "IoT PCR for Pandemic Disease Detection and Its Spread Monitoring" *Sensors and Actuators B: Chemical*, vol. 303, 2020, 127098.
9. M. Ni S. Zhuo, C. Iliescu, P.T. So, J.S. Mehta, H. Yu, C. Hauser, "Self-assembling amyloid-like peptides as exogenous second harmonic probes for bioimaging applications," *Journal of Biophotonics*, 2019.
10. F.S. Iliescu, D.P. Poenar, F. Yu, M. Ni, K.H. Chan, I. Cima, H. Taylor, I. Cima, C. Iliescu\* "Recent advances in microfluidics methods in cancer liquid biopsy", *Biomicrofluidics*, vol. 13, issue 4, art. no. 041503, 2019 (**Huge mediatic impact- 10 news stories from 10 outlets, in the top 5% of all research outputs scored by Altmetric-score 73**)
11. F.S. Iliescu, D. Vrtačnik, P. Neuzil, C. Iliescu\* "Microfluidic technology for clinical applications of exosomes" *Micromachines*, vol. 10, issue 6, 2019, art. no. 392,
12. F.S. Iliescu, W.J. Sim, H. Heidari, D.P. Poenar, J. Miao, H.K. Taylor, C. Iliescu\* "Highlighting the uniqueness in dielectrophoretic enrichment of circulating tumor cells," *Electrophoresis*, 2019, vol.40, issue 10, 2019, pp. 1457-1477.
13. H. Zhang, Y. Xu, Z. Fohlerova, H-L. Chang, C. Iliescu\* and P. Neuzil, "LAMP-on-a-chip: revising microfluidic platforms for loop-mediated DNA amplification," *Trends in Analytical Chemistry*, vol. 113, 2019, pp. 44-53.
14. F.S. Iliescu, J.C.M. Teo, D. Vrtačnik, H. Taylor, C. Iliescu\* "Cell therapy using an array of ultrathin hollow microneedles," *Microsystem Technologies*, vol. 24, issue 7, 2018, pp. 2905-2912.
15. D. Resnik, M. Možek, B. Pečar, A. Janež, V. Urbančič, C. Iliescu, D. Vrtačnik "In vivo experimental study of noninvasive insulin microinjection through hollow Si microneedle array," *Micromachines*, vol. 9, no. 1, 2018, art. no: 40.
16. F. Yu, R. Deng, W.H. Tong, L. Huan, N. C. Way, A.I. Badhan, C. Iliescu\* H. Yu, "A perfusion incubator liver chip for 3D cell culture with application on chronic hepatotoxicity testing," *Scientific Reports*, vol. 7, 2017, art. no: 14528.
17. M. Ni, G. Tresset, C. Iliescu\* Self-assembled polysulfone nanoparticles using microfluidic chip" *Sensors and Actuators B: Chemical*, vol. 252, issue 2, 2017, pp. 458-462.
18. F. Yu, S. Zhou, Y. Qu, D. Choudhury, Z. Wang, C. Iliescu\* H. Yu, "On chip two-photon metabolic imaging for drug toxicity testing," *Biomicrofluidics*, vol. 11, issue 3, 2017, art. no. 034108.
19. F. Yu, F.S. Iliescu, C. Iliescu\* "A comprehensive review on perfusion cell culture systems" *Inf. Midem - J. Microelectron. Electron. Compon. Mater.*, vol. 46, no. 4, 2016, pp. 163-175.
20. G. Tresset, C. Iliescu\* "Microfluidics-Directed Self-Assembly of DNA-Based Nanoparticles," *Inf. Midem - J. Microelectron. Electron. Compon. Mater.*, vol. 46, no. 4, 2016, pp. 183-189.
21. I. Cima, S.L. Kong, I.B. Tan, W.M. Phyo, D. Lee, M. Hu, D. Sengupta, C. Iliescu, et al "Tumor-derived circulating endothelial cell clusters diagnostic for early colorectal cancer", *Science Translational Medicine*, vol. 8, issue 345, 2016, 345ra89. (**Huge mediatic impact: 15 news stories from 15 outlets, in the top 5% of all research outputs scored by Altmetric-score 175**)- Science Journal

22. L. Alhasan, A. Qi, A. Al-Abboodi, A.R. Rezk, P.P.Y. Chan, C. Iliescu, L.Y. Yeo “Rapid enhancement of cellular spheroid assembly by acoustically-driven microcentrifugation,” *ACS Biomaterials Science & Engineering*, vol. 2/6, 2016, pp. 1013–1022.
23. W.H. Tong, F. Yu, J. Yan, X. Hong, N.H. Singh, S.R. Wang, B. Nugraha, L. Xia, E.L.S. Fong, C. Iliescu,\* and H. Yu, “Constrained spheroids for prolonged hepatocyte cell culture,” *Biomaterials*, vol. 80, 2016, pp. 106-120.
24. C. Iliescu,\* G. Tresset “Microfluidics-driven strategy for size-controlled DNA compaction by slow diffusion through water stream,” *Chemistry of Materials*, vol. 27, issue 24, 2015, pp. 8193-8197.
25. H. Kathuria, J.S. Kochhar, M.H.M. Fong, M. Hashimoto, C. Iliescu, H. Yu, L. Kang, “Polymeric microneedle array fabrication by photolithography,” *Journal of Visualized Experiments (JoVE)*, issue 105, 2015.
26. C. Iliescu,\* G. Xu, W.H. Tong, F. Yu, C.M. Bălan, G. Tresset and H. Yu “Cell patterning using a dielectrophoretic-hydrodynamic trap,” *Microfluidics and Nanofluidics*, vol. 19, issue 2, 2015, pp. 363-373.
27. C. Iliescu,\* C. Mărculescu, S. Venkataraman, B. Languille, H. Yu and G. Tresset “On-chip controlled surfactant–DNA coil–globule transition by rapid solvent exchange using hydrodynamic flow focusing,” *Langmuir*, vol. 30, / 44, 2014, pp. 13125-13136.
28. J.S. Kochhar, P. Anbalagan, S. B. Shelar, J.K. Neo, C. Iliescu, L. Kang “Direct microneedle array fabrication of a photomask to deliver collagen through skin,” *Pharmaceutical Research*, vol. 31, no. 7, 2014, pp. 1724-1734.
29. D. P. Poenar, C. Iliescu,\* J. Boulaire, H. Yu, “Label-free virus identification and characterization using electrochemical impedance spectroscopy,” *Electrophoresis*, vol. 35, issue 2-3, February 2014, pp. 433-440.
30. G. Tresset, C. Marculescu, A. Salonen, M. Ni, C. Iliescu,\* “Fine control over the size of surfactant- polyelectrolyte nanoparticles by hydrodynamic flow focusing,” *Analytical Chemistry*, vol. 85, issue 12, 2013, pp. 5850-5856.
31. I. Cima, C.W. Yee, F.S. Iliescu, W.M. Phyo, T. Lim, C. Iliescu,\* M.H. Tan “Label-free isolation of circulating tumor cells in microfluidic devices: current research and perspectives,” *Biomicrofluidics*, vol. 7, issue 1, 2013, art. no. 011810. **(in” top 20” most cited paper published in 2012-2013, top 5 most accessed articles in 2013 and 2014)**
32. D. Choudhury, D. van Noort, C. Iliescu, B.X. Zheng, K.-L. Poon, S. Korzh, V. Korzh, H. Yu “Fish and Chips: A microfluidic perfusion platform for monitoring the development of early stage zebrafish embryos,” *Lab on a Chip* vol. 12, issue 5, 2012, pp. 892-900.
33. C. Iliescu,\* H. Taylor, M. Avram, J. Miao, S. Franssila, “A practical guide for the fabrication of microfluidic devices using glass and silicon,” *Biomicrofluidics*, vol. 6, issue 1, 2012, art. no. 016505 **(In “Top 5” most read papers in Biomicrofluidics in 2012, in” top 10” most cited paper published in 2012-2013, in top 5 most accessed articles in 2012)**
34. H. Taylor, D. Boning, C. Iliescu “A razor-blade test of the demolding energy in a thermoplastic embossing process,” *Journal of Micromechanics and Microengineering*, vol. 21, no. 6. 2011, art. no. 067002.
35. D. Choudhury, X. Mo, C. Iliescu, L.L. Tan, W.H. Tong, H. Yu, Exploitation of chemical and physical constraints for 3D microtissue construction in microfluidics,” *Biomicrofluidics*, vol. 5, issue 2, 2011, art. no. 022203.
36. C. Iliescu, M. Avram, B. Chen, A. Popescu, V. Dumitrescu, D. P. Poenar, A. Sterian, D. Vrtacnik, S. Amon, P. Sterian, “Residual stress in thin films PECVD depositions: a review,” *Journal of Optoelectronics and Advanced Materials*, vol. 10/4, 2011, pp. 387-394.
37. S. Zhang, W.H. Tong, B. Zheng, T.A.K. Susanto, L. Xia, C. Zhang, A. Ananthanarayanan, X. Tuo, S.R. Binte, R.R. Jia, C. Iliescu, et al, “A robust high-throughput sandwich cell-based drug screening platform,” *Biomaterials*, vol. 32, issue 4, 2011, pp. 1229-1241.
38. G.L. Xu, F.E.H. Tay, G. Tresset, F.S. Iliescu, A. Avram, C. Iliescu,\* “Recent trends in dielectrophoresis“, *Inf. Midem - J. Microelectron. Electron. Compon. Mater.*, vol. 40, no. 4, 2010, pp. 253-262.
39. C. Iliescu,\* G. Tresset, L. Yu, G. Xu, “3D dielectrophoretic chips: trapping and separation of cell populations,” *Romanian Journal of Information Science and Technology (ROMJIST)*, vol. 13, no. 1, 2010, pp. 49-64.
40. C. Iliescu,\* G. Tresset, F.S. Iliescu, P.E. Sterian, “Live/dead cell assay based on dielectrophoresis on a chip,” *UPB Scientific Bulletin-Series A-Applied Mathematics and Physics*, vol. 72, issue 1, 2010, pp. 33-42.
41. B. Chen, J. Wei, C. Iliescu,\* “Sonophoretic enhanced microneedles array (SEMA) - improving the efficiency of transdermal drug delivery,” *Sensors and Actuators B: Chemical*, vol. 145, issue 1, 2010, pp. 54-60.
42. C. Iliescu,\* D.P. Poenar, S. T. Selvan, “Frequency dependence on the accuracy of electrical impedance spectroscopy measurements in microfluidic devices,” *Journal of Micromechanics and Microengineering*, vol. 20, no. 2, 2010, art. no. 022001.
43. C. Iliescu,\* G. Tresset, G.L. Xu, “Dielectrophoretic field-flow method for separating particle populations in a chip with asymmetric electrodes,” *Biomicrofluidics*, vol. 3 issue 4, 2009, 044104.
44. M. Ni, W. H. Tong, D. Choudhury, N. A. A. Rahim, C. Iliescu\* and H. Yu, “Cell culture on MEMS platforms: a review,” *International Journal of Molecular Sciences*, vol. 10, issue 12, December 2009, pp. 5411-5441.
45. F.E.H. Tay, L. Yu, C. Iliescu, “Particle manipulation by miniaturized dielectrophoretic devices,” *Defense Science Journal*, vol. 59, no. 6, 2009, pp. 595-604.

46. F.S. Iliescu, A.R. Sterian, E. Barbarini, M. Avram, C. Iliescu\* “Continuous separation of white blood cells from blood in a microfluidic device,” *UPB Scientific Bulletin-Series A-Applied Mathematics and Physics*, vol. 71, issue 4, 2009, pp. 21-30.
47. C. Iliescu, \* G.L. Xu, E. Barbarini, M. Avram, A. Avram, “Microfluidic device for continuous magnetophoretic separation of white blood cells,” *Microsystem Technologies*, vol. 15, no 8, 2009, pp. 1157-1162.
48. C. Iliescu, \* J. Wei, B. Chen and P.L. Ong, “Silicon nitride membranes for cell culturing,” *Romanian Journal of Information Science and Technology (ROMJIST)*, vol. 11, no. 2, 2008, pp. 167-176.
49. M. Avram, A.M. Avram, A. Bragaru, A. Ghiu, C. Iliescu, “Plasma surface modification for selective hydrophobic control,” *Romanian Journal of Information Science and Technology (ROMJIST)*, vol. 11, no. 4, 2008, pp. 409-422.
50. B.T. Chen, J. Wei, F.E.H. Tay, Y.T. Wong, C. Iliescu, “Silicon microneedles array with biodegradable tips for transdermal drug delivery,” *Microsystem Technologies*, vol.14, no. 7, 2008, pp. 1015-1019.
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52. J. Wei, P.L. Ong, F.E.H. Tay and C. Iliescu, “A new fabrication method of low stress PECVD SiN<sub>x</sub> layers for biomedical application,” *Thin Solid Films*, vol. 516, issue 16, 2008, pp. 5181-5188.
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*Other publications:*

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104. C. Iliescu, T.T. Sun, J.M. Miao, and F.E.H. Tay, "Fabrication process of a capacitive microphone with p++ diaphragm and silicon bonded top-plate," *Int. J. of Comp. Eng. Sci. (IJCES)*, vol. 4, no. 2, June 2003, pp. 687-690.
105. C. Iliescu, J. Miao and M. Avram, "Fabrication of chip scale piezoresistive pressure sensors using screen-printed glass frit packaging," *Int. J. of Comp. Eng. Sci. (IJCES)*, vol. 4, no. 2, June 2003, pp. 343-346.
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#### Book chapters:

1. F. Lee, C. Iliescu, F. Yu, H. Yu, Chapter 3: "Constrained spheroids/organoids in perfusion culture" in "Methods in Cell Biology", Academic Press, vol. 146, pp. 43-65, (ISSN 0091-679X, ISBN 9780128142806) 2018. (IF=1.698)
2. F.S. Iliescu, I. Cima, D. Ionescu, C. Iliescu, \* Chapter 5: "Marker-free isolation of CTCs using microfabricated platforms," in "Circulating Tumor Cells (CTC's): Detection methods, Health Impact and Emerging Clinical Challenges," (Ed. P.C. Ray) Nova Sci. Pub. Inc, 89-118 2016
3. C. Iliescu,\* D.P. Poenar, Chapter 5: "PECVD amorphous silicon carbide ( $\alpha$ -SiC) layers for MEMS applications" in "Physics and Technology of Silicon Carbide Devices" Intech (Edited by Yasuto Hijikata), pp. 131-148 (ISBN 978-953-51-0917-4), 2013.
4. C. Iliescu,\* A. Avram, Chapter 13: "Metallization over no planar surfaces" in "Chemical Mineralogy, Smelting and Metallization" (Editors: E.D. McLaughlin and L.A. Breaux), Nova Science Publishers Inc, (ISBN: 978-1-60692-853-0), pp. 289-314, 2009.
5. A. Avram, M. Avram, M. Volmer, D.P. Poenar, C. Iliescu, "Magnetic-based microfluidic platform for biomolecular separation" pp. 9-25, in "New applications of Micro and Nanotechnologies (Editors: M. Zaharescu, L. Giurgiu, D. Dascalu), Romanian Academy Ed., 2009.
6. C. Iliescu, \* J. Miao, Chapter 5: A review on wet etching of glass, pp. 155-185 in "Glass Materials Research Progress." (Editors: J.C. Wolf and L. Lange), Nova Science Publishers Inc, (ISBN 978-1-60456-578-2), 2008.

#### Invited talks at international conferences:

1. C. Iliescu, "Constrained Spheroids for Drug Screening Applications" – 2<sup>nd</sup> Bucharest Polymer Conference 6-8 June 2021, Bucharest, Romania (*plenary speaker*)
2. C. Iliescu, "Microfluidics strategies for self-assembled nanoparticles", 5th International conference on Emerging Electronics, (IEEE-ICEE 2020), Delhi, India, 26-28th Nov. 2020
3. C. Iliescu, G. Tresset, M. Ni, C. Marculescu, "DNA compaction using microfluidics for gene therapy" 1<sup>st</sup> Bucharest Polymer Conference, 6-8 June 2018, Bucharest, Romania, (*plenary speaker*)
4. C. Iliescu, G. Tresset, M. Ni, C. Marculescu, "Strategies in microfluidic self-assembly of nanoparticles" 8<sup>th</sup> IEEE International Nanoelectronics Conference (INEC), 3-5 January 2018, Kuala Lumpur, Malaysia (*invited speaker*).
5. C. Iliescu, "Fine control of DNA compaction using microfluidics", Lab-on-a-Chip Asia, Microfluidics, POCD & Organ-on-a-Chip, 5-6 December 2016, Singapore (*invited speaker*).
6. C. Iliescu, F. Yu, H. Yu, "On-Chip Incubator for 3D Hepatocyte Cell Culture" – "Microfluidics and Biosensors Workshop" Int. Conf. on Microelectronics, Devices and Materials (MIDEM'16), Ankarana, Slovenia, 28-30 September 2016, (*invited speaker-workshop*)
7. C. Iliescu, F. Yu, H. Yu, "Microfluidic-assisted constrained spheroids for long term cell culture," presented at 7<sup>th</sup> Australia-New Zealand Nano-Microfluidics Symposium, 21-23 March 2016, Brisbane, Australia (*invited speaker*).
8. C. Iliescu, F. Yu, H. Yu, "Microfluidic platforms for drug screening," presented at 38<sup>th</sup> Int. Semiconductor Conf., Sinaia, Romania, 12-14 October 2015, (*invited speaker*).

9. C. Iliescu, C. Marculescu, A. Salonen, M. Ni, G. Tresset, "Nanoparticles synthesis by electrostatic interaction in microfluidic devices," presented at 36<sup>th</sup> Int. Semiconductor Conf., Sinaia, Romania, 14-16 October 2013, (*invited speaker*).
10. D. Van Norrt, D. Choudhury, C. Iliescu, H. Yu "In Vivo drug testing in microfluidics on Zebrafish embryo," International Conference on Materials for Advanced Technology (ICMAT 2011), Symposium G: NEMS/MEMS and microTAS, Singapore, 26 June-1 July 2011 (*invited speaker*).
11. C. Iliescu, "Transdermal drug delivery as a microfabrication process," Singapore Symposium on Drug Delivery System, 13-15 May 2011 (*keynote speaker*)
12. C. Iliescu, M. Avram, B. Chen, A. Avram, A. Popescu, V. Dumitrescu, D.P. Poenar, A. Sterian, P. Sterian "Considerations regarding residual stress in thin films PECVD depositions," The 2<sup>nd</sup> International Colloquium "Physics of Materials" 7-9 October 2010, Bucharest, Romania (*invited speaker*)
13. C. Iliescu, "Recent trends in dielectrophoresis," presented at Int. Conf. on Microelectronics, Devices and Materials (MIDEM'10), Slovenia, 29-30 September 2010, (*invited speaker*)
14. C. Iliescu, "Transdermal drug delivery: a microfabrication approach," Dynamic nanosystems: from concept to applications (workshop) –Bucharest Romania, 21-24 September 2010 (*invited speaker*).
15. C. Iliescu, B. Chen, J. Wei, Z. Yue "Transdermal drug delivery: microfabrication insights, " presented at 32<sup>nd</sup> Int. Semiconductor Conf., Sinaia, Romania, 12-14 October 2009, (*invited speaker*).
16. C. Iliescu, B. Chen, J. Wei and F.E.H. Tay "Microneedles array with biodegradable tips for transdermal drug delivery," Smart Materials, Nano-, and Micro-Smart Systems 2008, Melbourne, Australia, 9-12 December 2008 (*invited speaker*).
17. H. Taylor, C. Iliescu, M. Ni, Y. C. Lam and C. Xing, D. Boning, "Modeling pattern dependencies in the micro-scale embossing of polymeric layers," Smart Materials, Nano-, and Micro-Smart Systems 2008, Melbourne, Australia, 9-12 December 2008 (*invited speaker*).
18. B. Chen, F.E.H. Tay and C. Iliescu "Development of thick film PECVD Amorphous silicon with low stress for MEMS applications," Smart Materials, Nano-, and Micro-Smart Systems 2008, Melbourne, Australia, 9-12 December 2008 (*invited speaker*).
19. C. Iliescu, "Dielectrophoresis from 2D to 3D, from micro to nano," presented at "Nanoscience and Nanotechnology Workshop"- Bucharest, Romania, 17-19 September 2008 (organized by IMT Bucharest and Romanian Academy) (*invited speaker-workshop*).
20. C. Iliescu, G.L. Xu, P.L. Ong, L. Yu, F.E.H. Tay, F.S. Iliescu, G. Tresset, "Manipulation of biological samples using electric field", at 30<sup>th</sup> Int. Semiconductor Conf., Sinaia, Romania, 15-17 October 2007, (*invited speaker*).
21. C. Iliescu, G.L. Xu, P.L. Ong, G. Tresset, L. Yu, F.E.H. Tay, F. Loe, "Dielectrophoresis from 2D to 3D" presented at International Conference on Materials for Advanced Technology ICMAT 2007- Symposium H, Singapore, 1-6 July 2007 pp. 8-11 (*keynote speaker*).
22. C. Iliescu, J. Wei, B. Chen, P.L. Ong and F.E.H. Tay "Low stress silicon nitride layers for MEMS applications," presented at Smart Materials, Nano-, and Micro-Smart Systems 2006, Adelaide, Australia, 10-13 December 2006. (*keynote speaker*).
23. C. Iliescu, "Microfluidics in glass: technologies and applications," presented at Int. Conf. on Microelectronics, Devices and Materials (MIDEM'06), Slovenia, 13-15 September 2006 (*invited talk - workshop*).
24. F.E.H. Tay, C. Iliescu and L. Yu, "Cell manipulation in dielectrophoretic (DEP) chip with 3D electrode," presented at International Society of Electrochemistry, ISE Spring Meeting 2006, Singapore, 17–20 April 2006 (*invited speaker*).
25. C. Iliescu, F.E.H. Tay, G.L. Xu and L.M. Yu, "Cell separation technique in dielectrophoretic chip with bulk electrode," presented at Microelectronics, MEMS, and Nanotechnology 2005, Brisbane, Australia, 11-14 December 2005 (*keynote speaker*) -
26. C. Iliescu, B.T. Chen, F.E.H. Tay, G.L. Xu and J. Miao, "Characterization of deep wet etching of glass," presented at Microelectronics, MEMS, and Nanotechnology, Brisbane, Australia, 11-14 December 2005. (*invited speaker*).
27. C. Iliescu and F.E.H. Tay, "Wet etching of glass," presented at Int. Semiconductor Conf. – CAS 2005 28<sup>th</sup> Edition, and Sinaia, Romania, 2-4 October 2005 (*plenary speaker*)

*Invited Seminars:*

28. C. Iliescu, "Microfluidic-assisted constrained spheroids cell culture" Laboratoire de Physique des Solides, Université Paris-Saclay, CNRS, 19 July 2019, France
29. C. Iliescu, "Microfluidics in cell culture and gene therapy"- Northwestern Polytechnic University, 2 Nov. 2018, Xi'an, P.R. China.
30. C. Iliescu, "DNA compaction using hydrodynamic flow focusing" – Yale-NUS College, 18 August 2017, Singapore.
31. C. Iliescu, "Self-assembled nanoparticle using microfluidics"- Babes- Bolyai University, 28 March 2017. Cluj-Napoca, Romania.
32. C. Iliescu, "Microfluidics in Silicon and Glass: Technologies and Applications," SIMTech Microfluidics Seminar, 6 March 2013, Singapore
33. C. Iliescu, "Microfluidics in drug discovery," University of Ljubljana, 19 Oct. 2012, Slovenia

34. C. Iliescu, “Dielectrophoresis in microfluidic devices,” Laboratoire de Physique des Solides, Université Paris-Sud, CNRS, 20 April 2011, France
35. C. Iliescu, “BioMEMS research in IBN,” National Institute of Research and Development in Microtechnology (IMT), 27 Sept. 2010, Romania.
36. C. Iliescu, “Transdermal drug delivery: microfabrication insights,” invited talk, “Materials week”- Republic Polytechnic, 12 May 2009,
37. C. Iliescu, “BioMEMS research in IBN,” Polytechnic University of Bucharest, Department of Physics 2, 16 Sept. 2008, Bucharest, Romania.

## CO-EDITOR:

F.E.H. Tay, J. Miao, *J. Bergstrom* and C. Iliescu, “International MEMS Conference 2006”, Journal of Physics: Conferences Series, vol. 34.

## CONFERENCES:

1. C. Iliescu, G. Tresset and M. Ni, “Fabrication of Theranostic Nanoparticles - a Microfluidic Approach”, Autumn Meeting of the Academy of Romanian Scientists, 18<sup>th</sup> November 2021, Bucharest, Romania.
2. C. Iliescu, G. Tresset and M. Ni “Microfluidics-assisted theranostic nanoparticles” 56<sup>th</sup> International Conference On Microelectronics, Devices And Materials, 22<sup>nd</sup>-24<sup>th</sup>, September 2021, Ljubljana, Slovenia
3. M. Carp, V. Dediu, F. Pistritiu, E.A. Lazlo, C. Iliescu, “Effective control of TEOS-PECVD thin film depositions” Proc. of the 43<sup>rd</sup> Int. Semiconductor Conf., Sinaia, Romania, 7-9 Oct. 2020, pp. 195-198 (*in IEEE-library*).
4. C. Iliescu, C. Marculescu, G. Tresset, “Romanian-France collaboration on DNA compaction using microfluidics” Autumn Meeting of the Academy of Romanian Scientists, 20-21 March 2019, Brasov.
5. R. B. Abdul Razar, S. S. M. Wong, S. Gunaseelan, C. Iliescu, J. J.E. Chua, “Microfluidics to study the role of intracellular transport in neuromuscular junction formation” 3<sup>rd</sup> Health technology Symposium, 1-2 July 2019, Singapore
6. C. Iliescu, F. Yu, H. Yu, “On-chip incubator for constrained liver spheroids” 5<sup>th</sup> International Conference “Implementation of Microreactor Technology in Biotechnology” - IMTB 2019, 19-22 May 2019, Cavtat, Croatia.
7. C. Iliescu, F.S. Iliescu, F. Yu, “Liver-on-a-chip”, Spring Meeting of the Academy of Romanian Scientists, 23-24 March 2017, Bucharest.
8. G. Tresset, C. Iliescu, C. Mărculescu, S. Venkataraman, B. Languille, and M. Ni, “Microfluidics-direct assembly of DNA-based nanoparticles,” The 4<sup>th</sup> International Soft Matter Conference (ISMC2016), 12-16 September 2016, Grenoble, France.
9. C. Iliescu, C. Mărculescu, M. Ni, B. Languille, S. Venkataraman, and G. Tresset, “A microfluidic method for fine control of surfactant-DNA nanoparticles” 6<sup>TH</sup> ANZNMF Symposium, 31 March– 2 April 2015, Melbourne, Victoria, Australia.
10. Y. Fang, Y. Qu, S.M. Zhuo, D. Choudhury, Z.P. Wang, C. Iliescu and H. Yu. “On Chip Two-photon Metabolic Imaging for Drug Toxicity Testing,” Lab-on-a Chip, Microfluidics & Microarray World Congress, September 18-19, 2014, San Diego, California, USA
11. C. Iliescu, C. Maraculescu, D. Resnik, and D. Vrtacnik, “Characterization of TEOS thin film deposition in PECVD reactors,” Proc. of 50<sup>th</sup> Int. Conf. on Microelectronics, Devices and Materials (MIDEM’14), Slovenia, 8-10 Oct. 2014, Ljubljana, Slovenia, pp. 199-202.
12. C. Iliescu, G. Tresset, C. Marculescu, A. Salonen and M. Ni, “Libraries of surfactant-polyelectrolyte nanoparticles by hydrodynamic flow focusing,” 3<sup>rd</sup> NanoToday Conference 8-11 Dec. 2013, Singapore.
13. C. Iliescu, G. Tresset, C. Marculescu, M. Ni, A. Salonen, “Surfactant-Polyelectrolyte nanoparticles fabricated using microfluidic devices,” 1<sup>st</sup> IBN Int. Symposium, 11-13 Jan. 2013, Singapore.
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