



UNICAMP INNOVATION AGENCY

2021

Annual Report
OF INOVA UNICAMP
INNOVATION
AGENCY

● STATE UNIVERSITY OF CAMPINAS

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● ACTIVITY REPORT OF INOVA UNICAMP INNOVATION AGENCY

Achievement

Inova UnicampInnovation Agency

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MTB 05046-DRT/PR

Released on 03/22/2022: Version 1

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This report addresses
results in innovation and
entrepreneurship promoted
by the Inova Unicamp
Innovation Agency.

WORDS OF

THE EXECUTIVE BOARD

- We start 2022 with good news in the innovation and entrepreneurship ecosystem of the Campinas Region. In 2021, after Unicamp was highlighted in first place in the Ranking of Entrepreneurial Universities of the National Confederation of Junior Companies, Campinas was also one of the three finalists in the National Innovation Award, promoted by the National Confederation of Industry and Sebrae. The research, that Unicamp does in partnership with the business sector, was one of the items highlighted on both occasions.

The third good news is that the analysis we made of the results in the year 2021 brings evidence of a stronger recovery in investment for research in partnership. In 2021, Unicamp firmed 86 research covenants with the business sector, totaling R\$72,535,497.56. Inova has been following this indicator since 2016 and, in 2021, we reached the largest number of contracts established throughout the historical series. After a fall in 2020, the total value of the contracts concluded showed a clear recovery. We have not returned to the levels of 2018 and 2019, when the University signed more than R\$ 130 million in research with the business sector per year, but the more than R\$ 72 million signed in 2021, represented an increase of 65% compared to what was firmed in 2020.

It should be noted that most of the resources directed to research in partnership come from tax incentives and mandatory investments in research in the Brazilian Electricity and Oil and Gas sectors. More details on the research areas and sources of funding can be found in the chapter [Business sector research](#) of this report, where we also discuss the ROTA 2030 Program and new forms of partnerships, such as the one with Griaule, a Unicamp's alumni company in the biometrics sector.

Our indicators for technology transfer are also a source of pride, demonstrating our commitment to bring the results of Unicamp's research to the benefit of society. We have reached 197 active technology licensing agreements. 30 of them were signed in 2021, especially in the areas of Health, Agriculture and Livestock, due to the large

number of licenses signed in these sectors. In the chapter [Licensing 2021](#), it is possible to see each of these licenses divided by macro-areas.

We have also achieved the largest number of patents granted in the entire Unicamp historical series. There were 129 concessions in 2021. We can attribute this result to an important composition: a more agile process, from the perspective of the National Institute of Industrial Property (INPI), but also to our diligence in the analysis of the Invention Notices, valuing not the quantity of patent applications, but the quality, with an eye increasingly dedicated to the possibility of serving society from the technologies developed at Unicamp.

However, it should be noted that we are beginning to feel the result of the closure of the University's laboratories during the pandemic. Despite strong prospecting work in 2021, we received 89 Invention Disclosures. Although the number of Disclosures are similar to previous years, we observed a retraction that, coupled with a stronger policy of evaluation of the content of Disclosures, led us to 47 patents filed with the INPI in 2021. With the resumption of the research, we aim to maintain the balance in the number of filings and a responsible management of Unicamp's patent portfolio, which reached a peak of 1276 active patents in 2021. Our intention is to stimulate more and more co-owned patents, especially with companies, aiming at the generation of new business and the transfer of these technologies.

In this report we also report our results in the Unicamp's Science and Technology Park, highlighting the representativeness of the Park in fostering research and generating highly qualified jobs within the Unicamp campus. Additional data on the Park can be accessed at exclusive [Annual Report](#), which we released weeks before this report, with a more complete analysis of this vibrant ecosystem.

With over 3600 participants in 2021, we remained strong in our events and programs to simulate the culture of innovation and entrepreneurship, which continued online with national coverage. We launched a new cooperation with the Institute of Arts (IA) at Unicamp, aimed at spreading the culture of innovation and entrepreneurship among the entire IA community. This partnership is one of the initiatives aimed at expanding Inova's presence in the non-essentially technological sectors of the University.

We also made five events in partnership with the Unicamp Ventures, the group formed by alumni entrepreneurs, and five podcasts in partnership with Unicamp Radio and TV, telling the experience of our alumni companies. We reached more than a thousand active alumni companies registered in 2021. In this report we highlight the [Unicamp Entrepreneur Awards](#), given for the first time to a woman entrepreneur, who also won the Socio-environmental Impact category. Similarly, data from alumni companies was the subject of the [Alumni companies report 2021](#), launched in October.

In 2021, we approved, along with the University Council of Unicamp, an important change in the Innovation Policy of Unicamp: the possibility of the University to establish a partnership with Unicamp Development Foundation (Funcamp) for the administrative management of Inova. This approval not only opens the way for the improvement of innovation management at the University, making it more agile and flexible in hiring specialized human resources, aligned with the C,T&I Legal Framework, but also ensures that this activity can be expanded, increasing the capacity of Inova to stimulate and support entrepreneurship and innovation at Unicamp and in the environment of the University's Science and Technology Park. In 2022, we are focused on promoting this change.

● Our first year in the management of Inova Unicamp Innovation Agency was challenging, with our integration with the team still in telecommuting. However, we thank the previous management for the transition and also the current dean for their interest and commitment to innovation management at the University. In 2022, we hope to meet you all in person and safely in our joint actions for innovation and entrepreneurship.



*Prof. Ana Maria Frattini Fileti and Prof. Renato Lopes
Executive Board of Inova Unicamp*



INOVA

IN FIGURES

INTELLECTUAL PROPERTY					
	2017	2018	2019	2020	2021
Invention Disclosures	128	113	119	110	89
Patents filed in Brazil	81	72	67	64	47
Patents filed abroad	1	10	5	2	11
Co-owned patents (with other Science and Technology Institutions or companies)	28	35	31	15	35
Patents granted in Brazil	62	71	63	101	129
Patents granted abroad	1	2	1	5	7
Patents in co-ownership granted	6	14	13	29	64
Patent Portfolio (1)	1021	1177	1206	1212	1276
Computer Program Registration	12	1	46	29	14
PCT (<i>Patent Cooperation Treaty</i>) applications	27	10	11	14	12
TECHNOLOGY TRANSFER					
Patents licensed in the year (national)	13	10	15	7	15
Patents licensed in the year (international)	0	3	1	1	10
Intellectual Property Licensing Agreements signed in the year	22	22	23	48	30
Intellectual Property Licensing Agreements in force	100	115	131	170	197
Economic gains (including <i>royalties</i>) (2)	R\$ 1.349.038,00	R\$ 1.763.560,08	R\$ 1.607.772,02	R\$ 1.915.429,00	R\$ 1.948.133,97
INDUSTRY SPONSORED RESEARCH					
Number of research contracts signed with industry in the year	49	75	53	50	86
Total value of research contracts signed with industry in the year	R\$ 64.101.444,52	R\$ 134.162.848,15	R\$ 133.496.706,19	R\$ 43.878.900,51	R\$ 72.535.497,56
INCAMP - INCUBATOR OF TECHNOLOGY-BASED COMPANIES AT UNICAMP					
Pre-incubated projects	4	6	2	1	5
Companies incubated in the year	18	15	15	13	16
Companies graduated in the year	4	3	5	2	1
Accumulated Graduated companies (3)	44	47	52	54	55
UNICAMP'S SCIENCE AND TECHNOLOGY PARK					
Installed companies	29	30	32	35	41
Jobs	337	336	440	532	729
Jobs in R&D (Research and Development)	240	270	293	432	539
R&D covenants signed with Unicamp (in the year) (4)	NC	NC	15	5	11
R&D covenants in force with Unicamp (4)	19	12	25	13	18
ALUMNI COMPANIES (5)					
Registered	584	701	815	1038	1131
Active	485	604	717	929	1019
Jobs	28889	30931	31343	33315	38963
Revenue of Alumni Companies (year)	R\$ 3 billion	R\$ 4.8 billion	R\$ 7.9 billion	R\$ 8 billion	R\$ 16 billion
Cumulative number of spin-offs	32	35	44	55	65
Number of spin-offs newly created	5	3	5	0	7

(1) Patents (granted or not) filed in Brazil and abroad (PI, MU, CA - Certificate of Addition, FN - National Phases)

(2) Gains obtained by Unicamp, referring to technology transfer and licensing agreements (including royalties, technology-access fees and others)

(3) The indicator "cumulative graduated companies" has been revised in 2020

(4) Refer exclusively to contracts signed by companies located at Unicamp's Science and Technology Park | **NC** Unaccounted

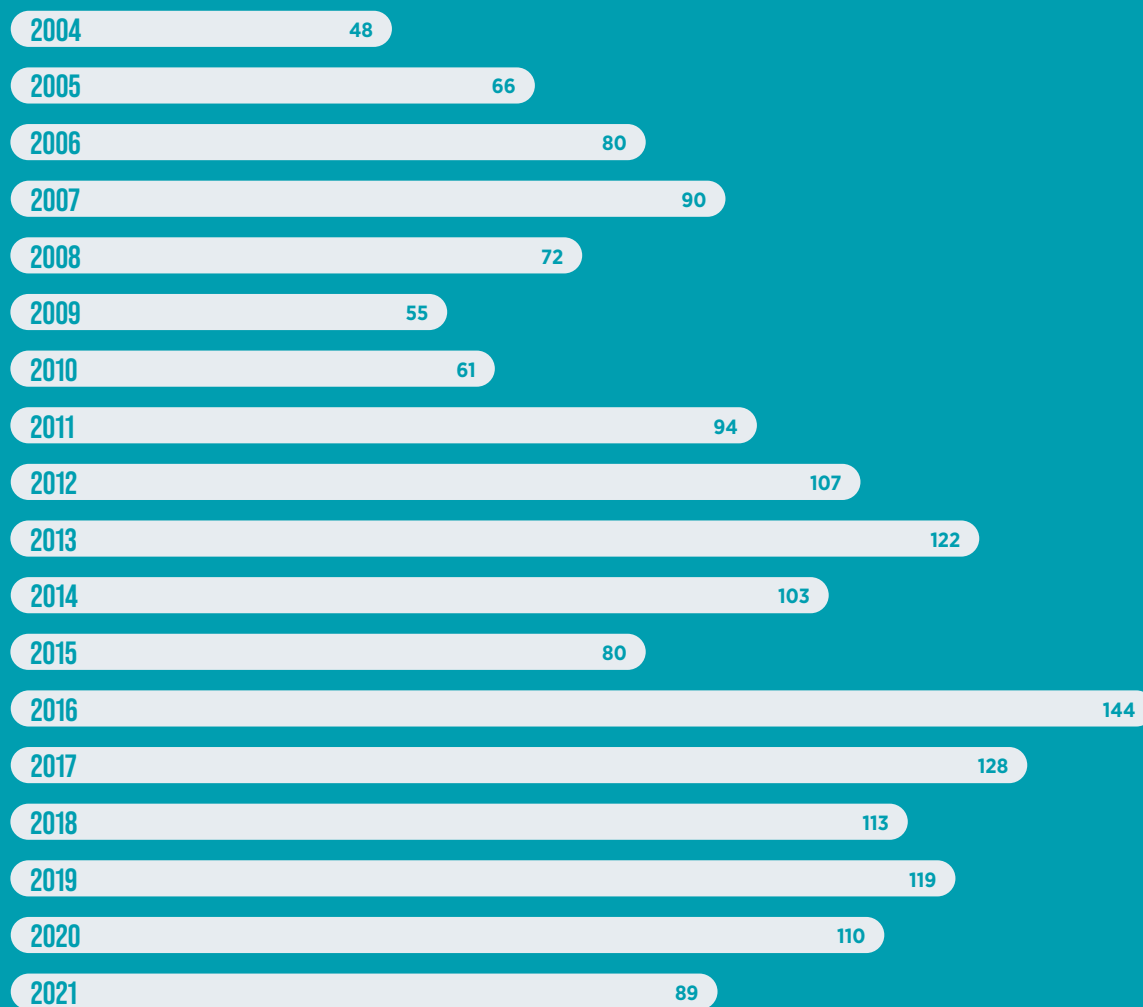
(5) Indicators started to be collected systematically in 2013, with expansion of the scope in 2016

(6) Indicator created in 2016

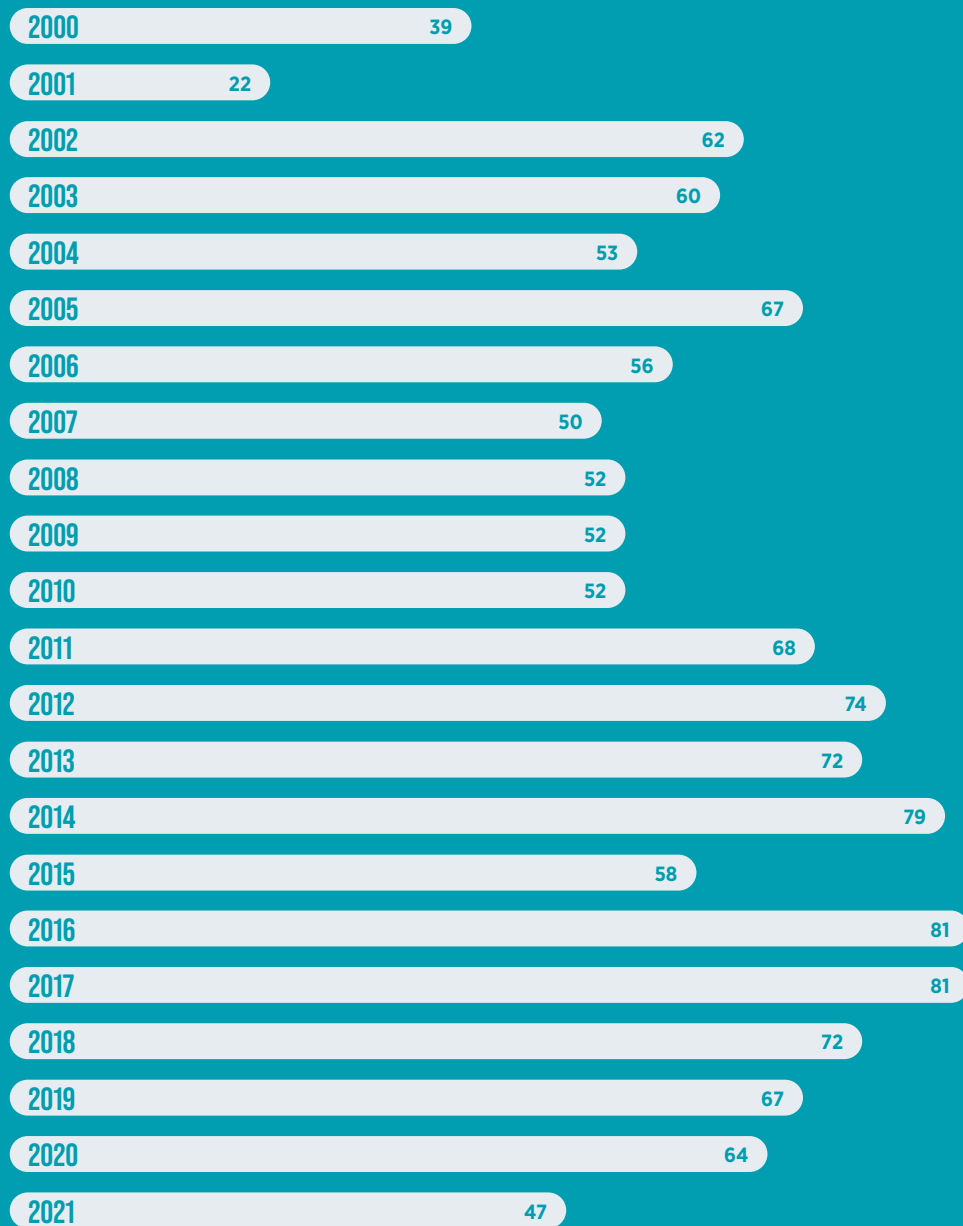
PERFORMANCE INDICATORS

INTELLECTUAL PROPERTY

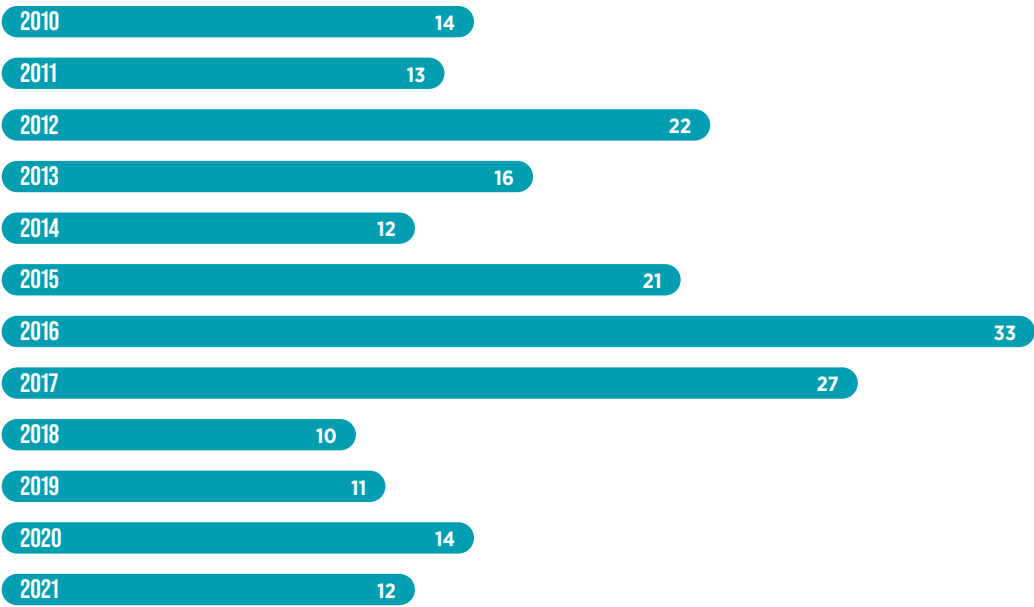
● INVENTION DISCLOSURES



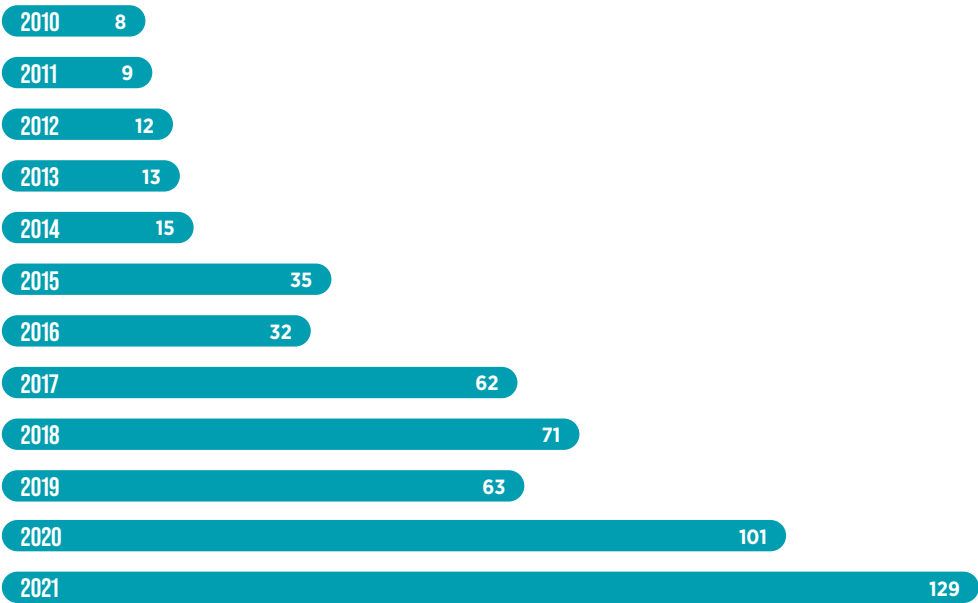
PATENT APPLICATIONS FILED AT THE INPI



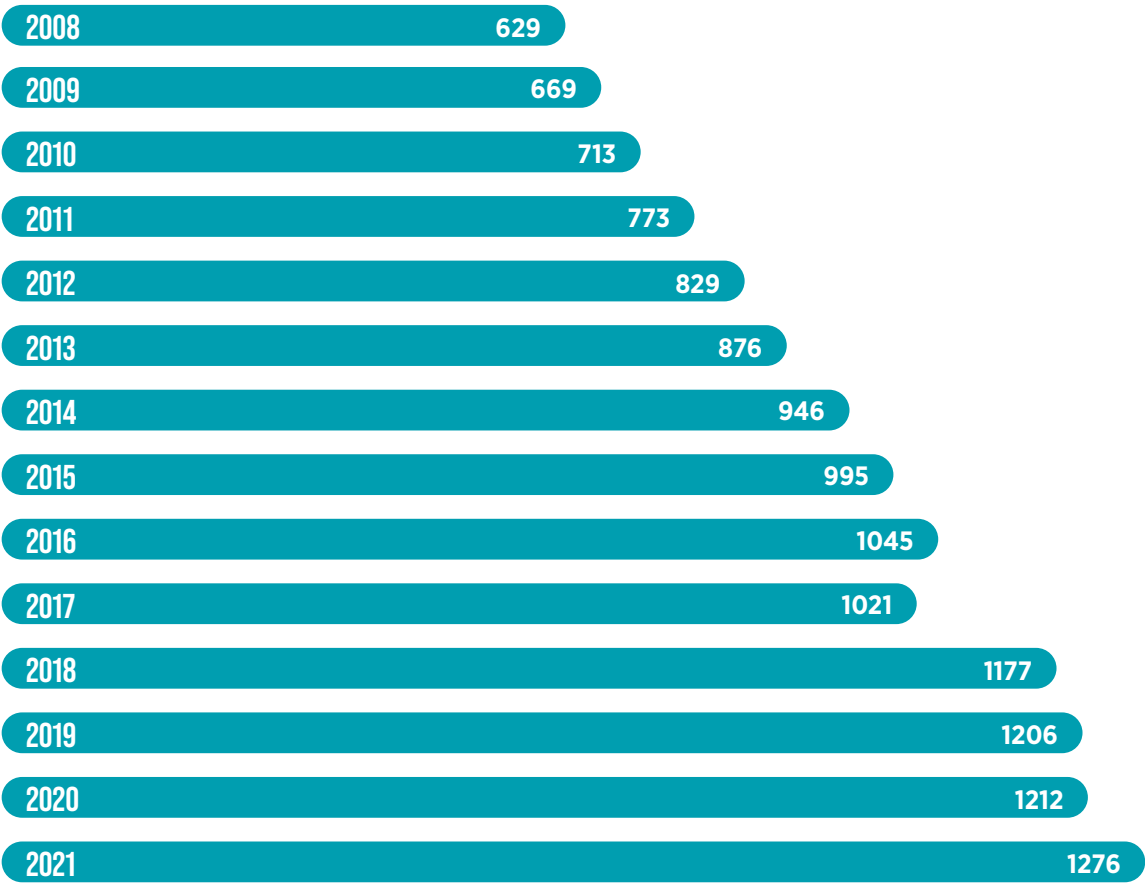
PCT APPLICATIONS
[PATENT COOPERATION TREATY]



PATENTS GRANTED

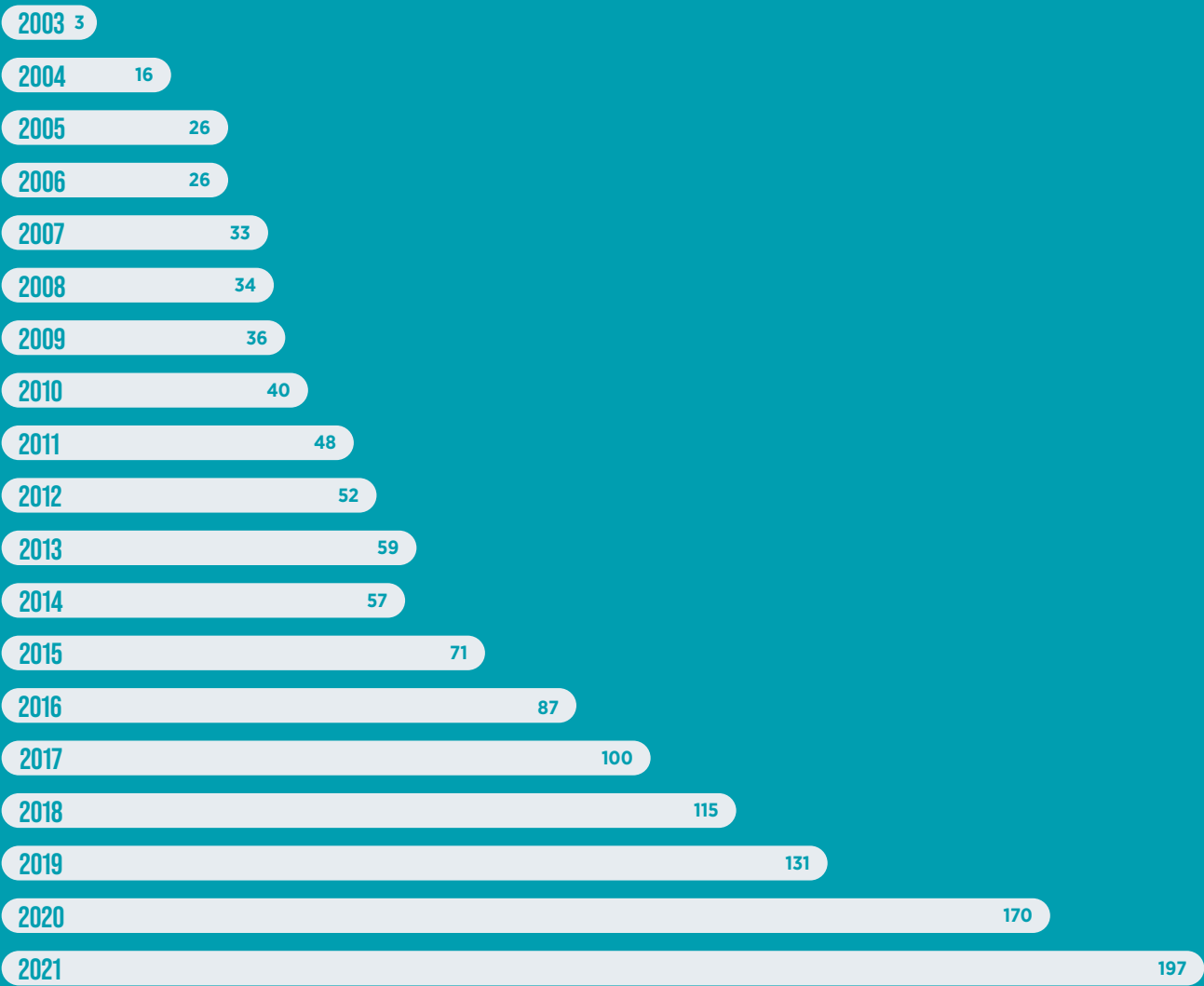


PATENT PORTFOLIO

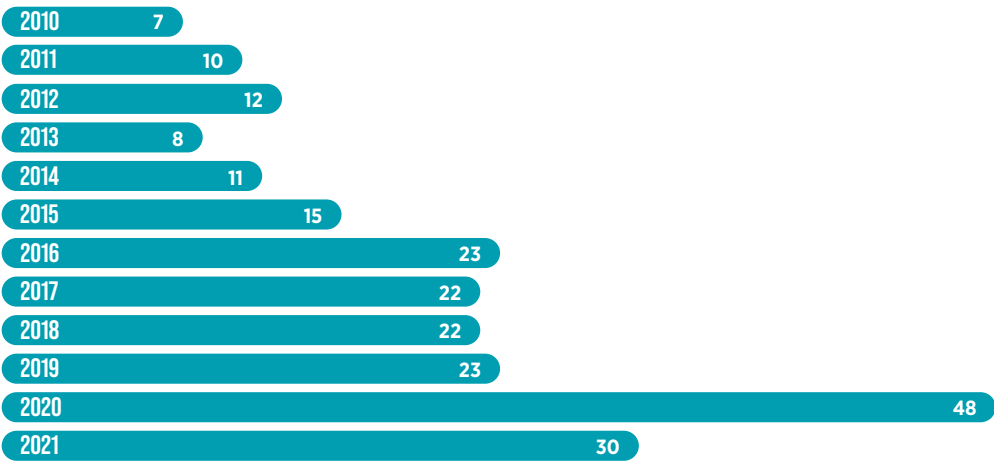


INTELLECTUAL PROPERTY LICENSING

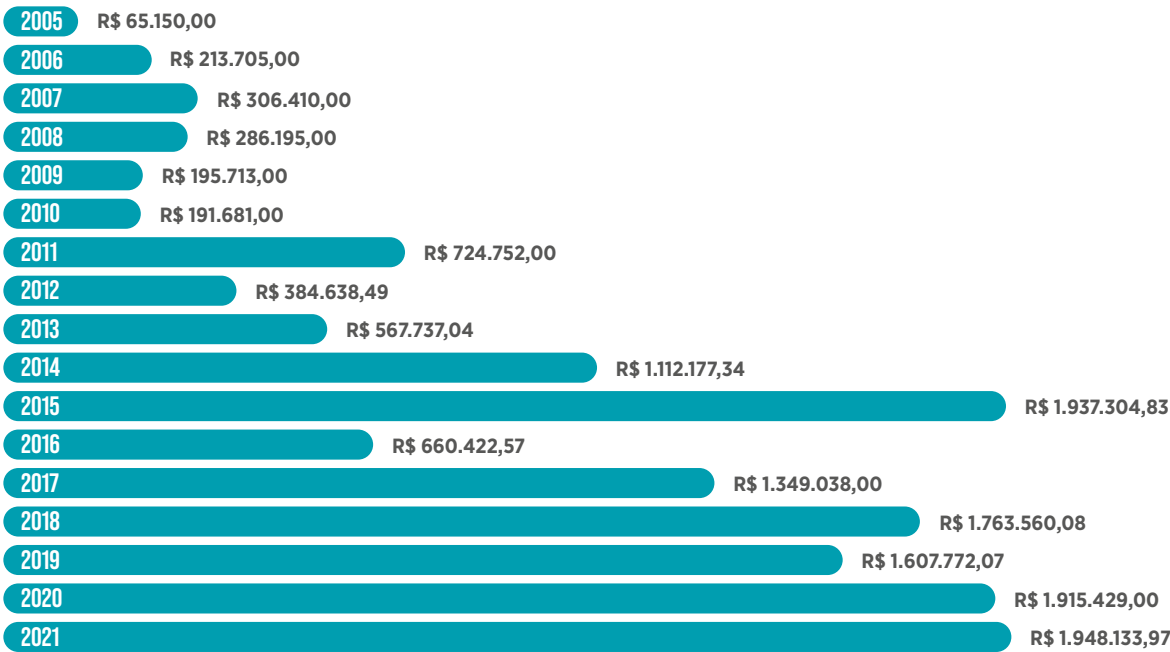
LICENSING OF INTELLECTUAL PROPERTY IN FORCE




LICENSING AGREEMENT
OF INTELLECTUAL PROPERTY [SIGNED IN THE YEAR]



ECONOMIC GAINS [(INCLUDING ROYALTIES)]





In 2021, Inova received a record number of project notices: a total of 346 – 144 of them were carried out by companies and 202 by teachers.

RESEARCH WITH THE BUSINESS SECTOR

UNICAMP SIGNS THE LARGEST NUMBER OF RESEARCH CONTRACTS WITH THE BUSINESS SECTOR IN 5 YEARS YEARS

- In 2021, Inova received a record number of project notices: a total of 346 - 144 of them were carried out by companies and 202 by academics.

The increasing demand for university-company projects has also resulted in the largest number of Research and Development (R&D) contracts signed in the last five years. 86 contracts were signed, for a total amount of R\$ 72,535,497.56, which represents an increase of 67% compared to 2020.

Although the amount is not yet equal to 2018 and 2019 - when Unicamp signed more than R\$ 100 million in research contracts with the business sector - the figures show a clear recovery of resources dedicated to university-companies partnerships.

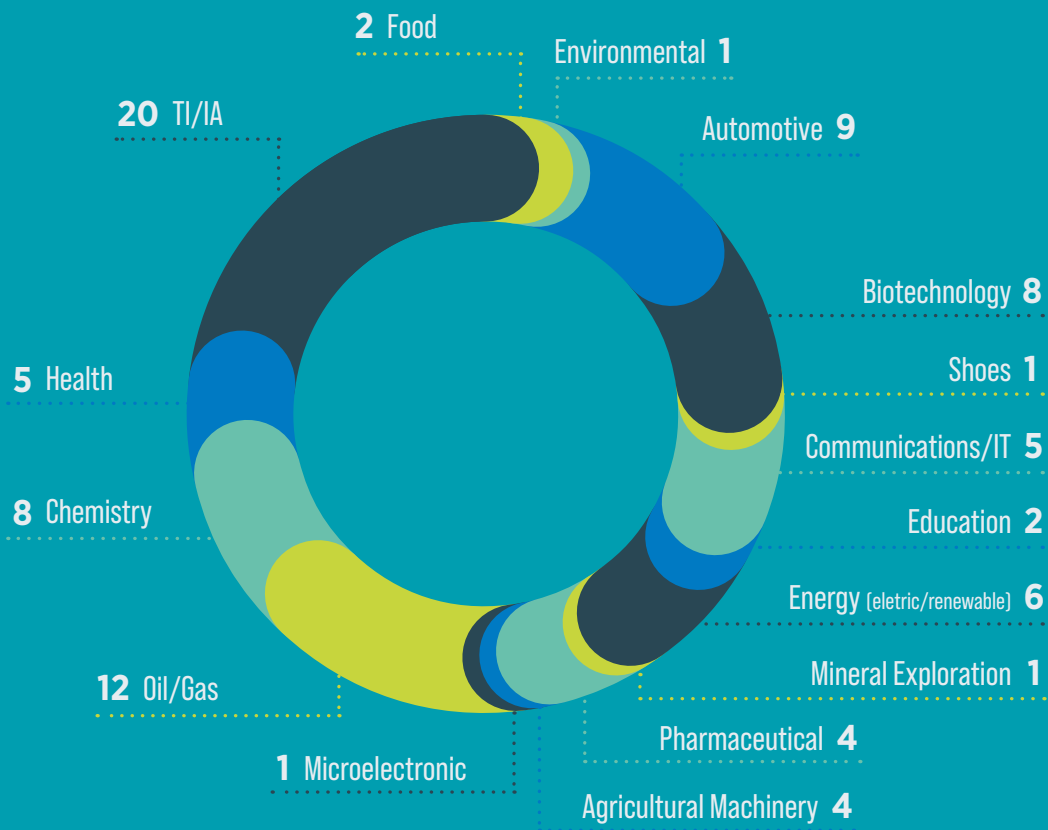
Funds from tax incentives and benefits, in addition to mandatory clauses, predominate and are responsible for about 75% of the total fund invested in university-company partnership research at Unicamp. Thematic projects, such as those fostered by the Federal Government's Rota 2030 Program, corroborate to increase the number of R&Ds, as well as the facilities brought by Unicamp's Science and Technology Park, with spaces dedicated to collaborative research and access to highly qualified talent and state-of-the-art laboratories of the University.

86 covenants signed

● RESEARCH IN PARTNERSHIP WITH THE BUSINESS
SECTOR: ORIGIN OF FUNDS

ORIGIN	2021
Private	R\$ 8.253.836,03
Federal Public / Tax Incentive / Federal Public	R\$ 8.863.710,55
Informatics Law / Mandatory Clause / ANP	R\$ 21.160.559,57
Federal Public / Tax Benefit / FINEP 2030	R\$ 13.188.521,75
Federal Public / Mandatory Clause / ANEEL	R\$ 10.795.991,26
Federal Public / Tax Benefit / FINEP Tec. Assisted	R\$ 531.350,40
Federal Public / PADIS / Others	R\$ 3.022.000,00
Others	R\$ 6.767.537,00
TOTAL WITH FINANCIAL RESOURCES	R\$ 72.583.506,56

PROJECTS BY ECONOMIC ACTIVITY



PARTNER COMPANY

GRIAULE: IMPACT ON BIOMETRIC SYSTEMS AROUND THE WORLD

Griaule is a Brazilian software company leader in the big data biometrics market with a long partnership with Unicamp. It was one of the pioneers to graduate from the incubation program of the Unicamp Technology-Based Company Incubator (Incamp) from 2002 to 2005.

Griaule built credibility in traditional markets, outperforming major international players. In 2003, it was already listed with one of the eight most accurate algorithms in the world by NIST (National Institute of Standards and Technology), a reference body in the biometric industry.

Currently, it provides solutions from the fight against terrorism, to the US Department of Defense, to the identification of bank users and newborns. In Brazil, it helped consolidate the country's largest biometric base, along with the Superior Electoral Court (TSE), increasing security against fraud in elections.

The company is keen to maintain its Brazilian headquarters in one of the main avenues that provide access to Unicamp, in the district of Barão Geraldo, in Campinas, even after the expansion to the US, Europe and Mexico. The proximity to the University's ecosystem is strategic: it has helped build a solid foundation for the company, in the process of internationalization and maintains the technology in the state of the art of biometric identification.

20 years
relationship with Unicamp

4,000 costumers
in more than 70 countries

100% natural
Technology

Annually-adjusted
Bolsas Integrais

● “Unicamp is the main innovation and technology ecosystem in Latin America, besides being one of the leading universities in the field of computer science. This proximity to an institution of excellence allows us to hire very high-level workforce and collaboration in technological projects”, says João Weber, CEO of Griaule.

BESPOKE PARTNERSHIP

- Griaule maintains its facial recognition technology, digital, palm and iris printing updated through technical and scientific cooperation projects with Unicamp.

In 2021, it signed another Research and Development (R&D) contract with the Institute of Computing (IC) in a new modality, by granting undergraduate (scientific initiation), master's and doctoral scholarships and Innovation Stimulation Research to Unicamp researchers, linked to the area of Information Technology.

The project aims to study and develop techniques of acquisition, processing, and image analysis for the recognition of people through machine learning and pattern recognition in different biometric modalities, following nine thematic lines.

One of them aims to advance the development of fingerprint fragments identification technology, the other, the acquisition of biometric signals through contactful and contactless devices.

The scholarships will be fully funded by the company. In this new type of contract, the number of students may vary throughout the duration of the projects, being defined depending on the demand and together, between the company and the University. The coordination is under the responsibility of the researcher Alexandre Xavier Falcão and the contract lasts for five years.



João Weber, CEO of Griaule:
“The proximity to Unicamp
is of paramount importance
to us”.

UNICAMP IN ROTA 2030: AUTOMOTIVE CHAIN DEVELOPMENT PROGRAM

- The Rota 2030 Program was created by the Federal Government to support the technological development of the Brazilian automotive sector and expand its participation in the global market. The program reduces the import aliquot of imported auto parts. On the other hand, companies deposit 2% of the imported value in priority programs that select Research and Development (R&D) projects of new technologies to be executed by Scientific, Technological and Innovation Institutions (ICTs), such as Unicamp.

Unicamp works in the execution of R&D projects in the Rota 2030 Program in the three thematic axes coordinated by the Foundation for Development of Research of Minas Gerais (FUNDEP), of which it is part of the technical coordination and in the program of the 2030 Finep Studies and Projects Financier.

The approved projects are executed directly with the participation of the industrial sector and comprise research in the bioenergy lines, alternative propulsion to combustion, improved efficiency and safety of vehicles for the electric and hybrid segment, with applications in the city and in the agricultural sector.

Ten Science and Technology Institutes are involved in the project, as well as 13 companies. The projects sum more than R\$ 16 million in investments at Unicamp. The values are reversed for maintenance and improvements in the infrastructure of laboratories, purchase of inputs for research and the payment of scholarships and stimulus to innovation.

11 contracts
signed with Unicamp

**10 Science and
Technology Institutes**
involved

+R\$ 16 million
in investment at Unicamp

+R\$ 44 million
in total investment



Dr. Marcelo de Paula (FEM Unicamp), Angêlo Lunardi (UFABC), Prof. Tércio Barros (FEM Unicamp), Prof. Angel Pontin Garcia (FEAGRI Unicamp), Rafael Figueiredo (UFABC), Prof. Daniel Albiero (FEAGRI Unicamp), Dr. Cezário Benedito Galvão (FEAGRI Unicamp).
(left to right, top to bottom).

INVOLVED UNITS:

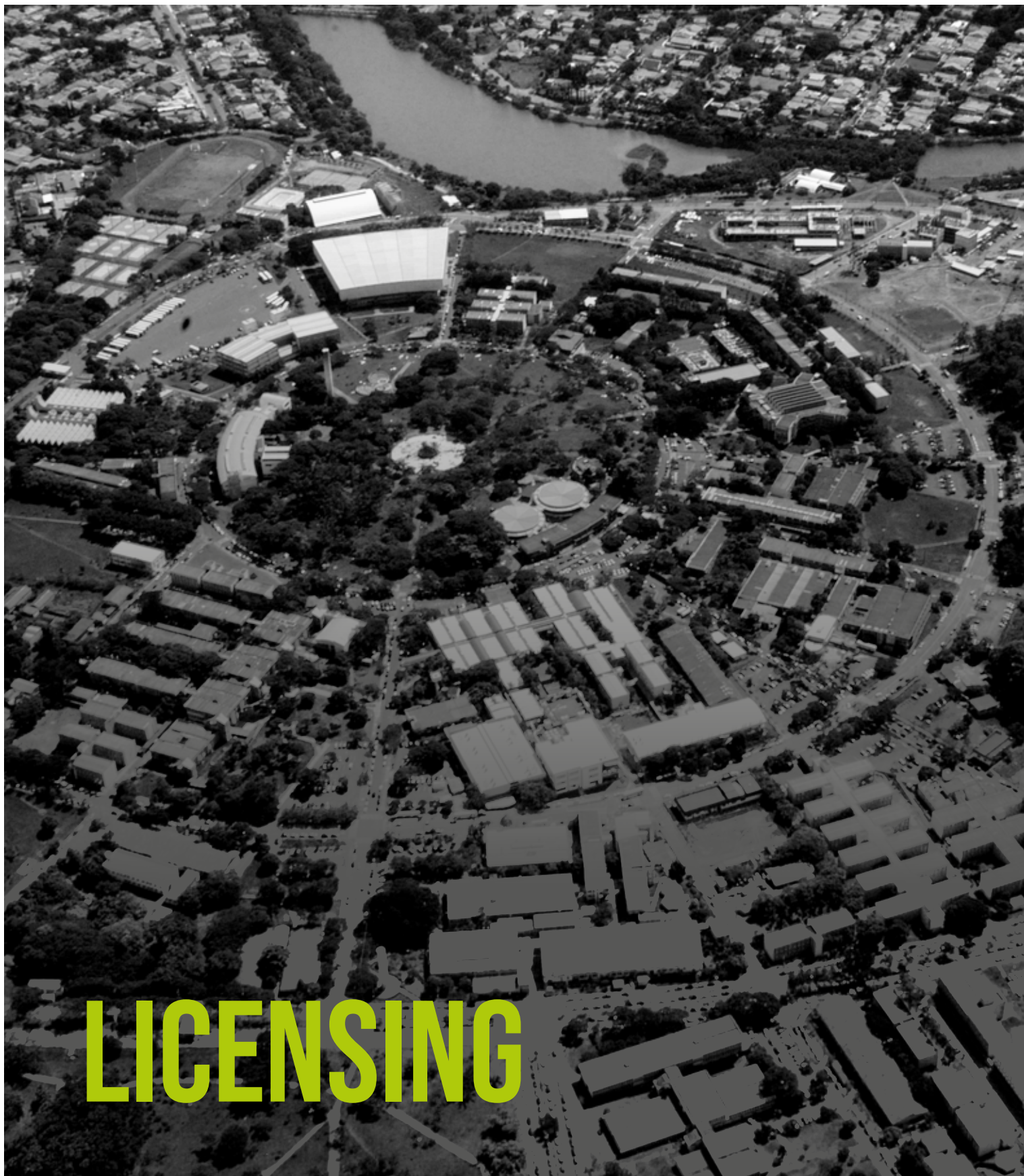
School of Mechanical Engineering (FEM), School of Electrical and Computer Engineering (FEEC), School of Agricultural Engineering (FEAGRI), School of Chemical Engineering (FEQ).

INVOLVED INSTITUTIONS:

Federal University of ABC (UFABC), Aeronautics Institute of Technology (ITA), University of São Paulo (USP), Federal University of Santa Maria (UFSM), Federal University of São Carlos (UFSCAR), Federal University of Mato Grosso (UFMT), Federal University of Vales do Jequitinhonha e Mucuri (UFVJM), Federal Institute of Education, Science and Technology of São Paulo (IFSP), Eldorado Institute and SAE4Mobility.

INVOLVED COMPANIES:

AVL South America, Caoa, FCA Fiat Chrysler, General Motors, Hibrema, Supplier, Marelli Sistemas Automotivos, Marchesan, Motiva Mobilidade, Piccin Máquinas Agrícolas, Robert Bosch, Toyota do Brasil, Volkswagen.



AGRICULTURE AND LIVESTOCK

NATURAL ANTIOXIDANT FOR MEAT CANNING, MEAT PRODUCTS AND ADDITIVE IN ANIMAL DIET

Non-exclusive patent licensing BR102016020328-7

It is a microparticle with functional and antioxidant properties to be added in meat, meat products and animal diets, as an alternative natural food antioxidant to synthetic ones, which are restricted in some countries by the suspicion of carcinogenic effects. The product of this technology is made from the combination of two microencapsulated essential oils and achieves satisfactory results in the control of lipid oxidation, can be used in the food industry to increase the shelf life of meat and meat products.

Inventore: Marta Cristina Teixeira Duarte, Adriana Nogueira Figueiredo, Rodney Alexandre Ferreira Rodrigues, Renata Maria Teixeira Duarte and Aline Mondini Calil Racanicci (University of Brasília)

Unit: Multidisciplinary Center for Chemical, Biological and Agricultural Research (CPQBA)

Licensed company: Terpenia Desenvolvimento de Bioinsumos Ltda.

ANTIBACTERIAL COMPOSITION NATURAL FOR FEEDING AND CONTROL OF BACTERIA IN AQUACULTURE

Non-exclusive patent licensing BR102018077081-0

The invention refers to an antibacterial composition made from volatile oils extracted from plants that can be used in aquaculture feed, without risk of environmental pollution and totally non-toxic. The compound presents a method of obtaining low cost, simple and quick to be performed. The importance of using natural compounds is mainly in replacing the use of synthetic compounds - such as antibiotics, for the control of bacteriosis in fish, because the wide use of antibiotics leads to the development and selection of more resistant bacteria, and may cause contamination of other animals and man.

Inventors: Marta Cristina Teixeira Duarte, Rodney Alexandre Ferreira Rodrigues, Renata Antunes Estaiano de Rezende and Marili Villa Nova Rodrigues (University of Brasília)

Unit: Multidisciplinary Center for Chemical, Biological and Agricultural Research (CPQBA)

Licensed company: Terpenia Desenvolvimento de Bioinsumos Ltda.



Rodney Alexandre Ferreira
Rodrigues (CPQBA/
Unicamp) and Marta
Cristina Teixeira Duarte
(CPQBA/ Unicamp).

FERTILIZER COMPOSITIONS TO REDUCE CROP LOSSES

Non-exclusive patent licensing BR102018015832-5

- The technology consists of fertilizer compositions associating mineral nutrients and organic substances, with the ability to increase the growth and development of aerial part and root system of the vegetable.



Prof. Gonçalo Amarante Guimarães Pereira (IB)

This composition has different forms of application, from substrates for initial development of seeds and seedlings, to hydroponic crops and associated with irrigation (fertigation). The differential of this technology is the mitigation of factors that cause decreased productivity and quality of agricultural products, such as: abiotic stress (water, thermal and saline) and biotics, thus making agricultural crops more sustainable by increasing the efficiency of the use of environmental factors and inputs applied (anthropic action) to the production environment.

Inventors: Gonçalo Amarante Guimarães Pereira, Jorge Lepikson Neto, Mariana Teixeira Rebouças, Nicholas Vinícius Silva, Marcelo Falsarella Carazzolle, Bianca Azevedo Curzio, Eduardo Leal Oliveira Camargo and Luciana Souto Mofatto

Unit: Institute of Biology (IB)

Licensed company: Companhia Nitroquímica Brasileira

RATOON-DESTRUCTIVE EQUIPMENT FOR SEMI-PERENNIAL AND ANNUAL CROPS

Non-exclusive patent licensing PI1004278-4

- The equipment developed allows the destruction of remaining roots in the soil (ratoons), after cutting and harvesting of plants.

It is adaptable to the tractor and acts by mobilizing only the area with roots, avoiding soil erosion and reducing the total number of operations, so as to save time and energy. Benefits both semi-perennial and annual farmers, protecting the next generation of cultivated plants, as many crops, such as sugarcane and cotton, need their ratoons to be destroyed before the planting period so that such roots do not interfere in the development of new clumps, avoiding competition for nutrients, and preventing the presence of pests and diseases in new plants.



Prof. Daniel Albiero (FEAGRI)

Inventors: Daniel Albiero, Antonio José Maciel da Silva (*in memoriam*)

Unit: School of Agricultural Engineering of Unicamp (FEAGRI)

Licensed company: Jima Participações e Consultoria em Gestão Empresarial Ltda.

BIOLOGY

IDENTIFICATION OF YEASTS IN THE PROCESS OF ETHANOL FERMENTATION

Non-exclusive patent licensing granted PI1015987-8

- The technology developed allows precise, quick and with cheap identification of yeast that are used in fermentation processes.

For this, molecular markers are used that showed a high discriminatory power, including in lineages with the same technological and geographical origin. The analysis, which comprises the combined use of four to six molecular markers, generates a unique result profile for each yeast, similar to a bar code. The invention is intended primarily for the monitoring of the fermentation process in ethanol production, of which Brazil is among the largest producers in the world. However, as it has a high capacity to differentiate lineages, it can be used as a tool to identify and screen yeasts in different processes, such as baking, beverages and animal nutrition.



Prof. Gonçalo Amarante Guimarães Pereira (IB)

Inventore: Gonçalo Amarante Guimarães Pereira, Osmar Vaz De Carvalho Netto, Felipe Galzerani, Juan Lucas Argueso, Fabiana De Melo Duarte, Gustavo Gilson Lacerda, Silvia Kazue Missawa and Marcelo Falsarella Carazzolle

Unit: Institute of Biology (IB)

Licensed company: Foxes Soluções e Pesquisas em Biologia Molecular Ltda.

CIVIL CONSTRUCTION

CONCRETE FLAT PLATES FOR A MORE INDUSTRIALIZED CONSTRUCTION SYSTEM

Non-exclusive licensing of know-how

- Cement is the second most used material in civil construction. Faced with the scarcity of raw materials, and the large release of carbon dioxide (CO₂) by traditional cement, Unicamp's technology works with an alternative binder for civil construction, the already known magnesian cement (Sorel).

The compound was developed and improved, forming the first magnesian flat plate in Brazil. The board is less dense than the traditional one, which facilitates its use; more ecological, since it does not use water in construction (drywall); and allows a gain of time and productivity in the work because it is prefabricated, contributing to the industrialization and modernization of the Brazilian construction system.

Inventors: Carlos Eduardo Marmorato Gomes

Unit: School of Civil Engineering, Architecture and Town Planning (FEC)

Licensed company: Comptest Engenharia



Prof. Carlos Eduardo Marmorato Gomes (FEC)

EDUCATION

AUTHORIAL CONTENT BANK FOR ONLINE ENGLISH COURSE

Non-exclusive copyright licensing

- The copyright bank for an online English course, created at the Institute for Language Studies (IEL), was developed favoring short and undated texts, essential to maintain timelessness. The course proposal is to align the independent study with textual practice, with the logic of screen reading.



Prof. Denise Bértoli Braga (IEL)

It has 24 classes and is divided into six modules, which were grouped by grammatical criteria, and three modules discuss recurrent problems for readers at the sentence level and three modules explore broader textual organizations. Each activity has a text for reading and listening, and the texts are of scientific dissemination; six comprehension questions (with the answer suggested by the pedagogical team); supporting material (glossary and grammar booklet); content for reflection on strategies for reading and language acquisition; and language systematization exercises (with automatic system verification).

Inventors: Denise Bértoli Braga, Lúcia Alves Costa, Joanne Marie McCaffrey Busnardo Neto, Maria Cecília dos Santos Fraga, Anabel Deuber, Virgílio Nascimento Santos and Fábio Aragão da Silva

Unit: Instituto de Estudos da Linguagem (IEL)

Licensed company: Mupi Tecnologia e Serviços de Informação Ltda - ME

ENERGY

ENERGY STORAGE ON AIR BATTERIES

Non-exclusive patent licensing BR 10 2021 016975 3

- The technology refers to batteries that use crystalline ionic liquid as an additive in high conductivity electrolyte with catalytic action and the use of crystalline ionic liquid in lithium-oxygen (Li-O₂) batteries using cells with the Swagelok configuration (sealed cell or self-sealing cell).



Prof. Gustavo Doubek (FEQ)

This type of battery captures atmospheric oxygen to generate a chemical reaction inside releasing the gas at the time of recharging. The so-called “air batteries” have proven to be potential replacements for conventional lithium-ion cells. Among the advantages are the very high energy density, much higher than the cells currently used (~1700 Wh/Kg X about 150 Wh/Kg), being equated to the energy capacity of gasoline. The object of the patent application was also able to improve the autonomy and cyclability of Li-O₂ batteries (amount of recharges that the device allows before the end of its service life).

Inventors: Gustavo Doubek, Chayene Gonçalves Anchieta, Rubens Maciel Filho, Thayane Carpanedo De Moraes Nepel and Letícia Maria Sampaio Barros

Unit: School of Chemical Engineering (FEQ)

Licensed company: Shell Brasil Petróleo Ltda.

CHEMICAL ENGINEERING

COMPUTER SIMULATOR INTENDED FOR THE PREVENTION AND SIMULATION OF EXPLOSION SCENARIOS

Non-exclusive licensing of the computer program BR 51 2019 001347 6

- The software STOKES is able to calculate overpressure in accidental explosions in the Chemical Industry. The Computer Program numerically calculates explosion scenarios, and simulations can be made, considering all the details of a plant, to predict a possible explosion and the damage related to it.

The software it is divided into parts that reach 5,000 programming lines and is based on the CFD (Computational Fluid Dynamics) technique. The technique is the numerical resolution of the equations that govern the flow of fluids, in the case of technology, to reactive turbulent flow reactions (combustion).

Inventors: Sávio Souza Venâncio Vianna and Tatiele Dalfior Ferreira

Unit: School of Chemical Engineering (FEQ)

Licensed institution: Universidade San Ventura de Cartagena



Prof. Sávio Souza Venâncio Vianna (FEQ)



Prof. Nelson Durán Caballero (IQ) and Prof. Wagner José Fávaro (IB)

- The technology that owns the brand *OncoTherad* has been licensed exclusively for the *spin-off* formed by the professors of Unicamp who are the inventors of immunotherapy.

PHARMACEUTICALS

REMEDY TO FIGHT CANCER

Exclusive patent licensing BR 10 2017 012768 0, US11136242, EP3626746, US20210238045, US20210238046, US20210238044, EP21210111
Non-exclusive license to use the Brand, registrations no. 913452386

It is a totally synthetic nanoparticle capable of inducing in the body an immune response of T cells, that is, of activating certain types of lymphocytes that produce a protein called interferon [IFN], important for fighting cancer as well as some infectious diseases. This technology was developed to be used in both animals and humans. In 2021, the drug had the patent granted by United States Patent and Trademark Office (USPTO), federal agency for the granting of patents and trademark registration in the United States, and won the “SBOC Science Award”, organized by the Brazilian Society of Clinical Oncology.

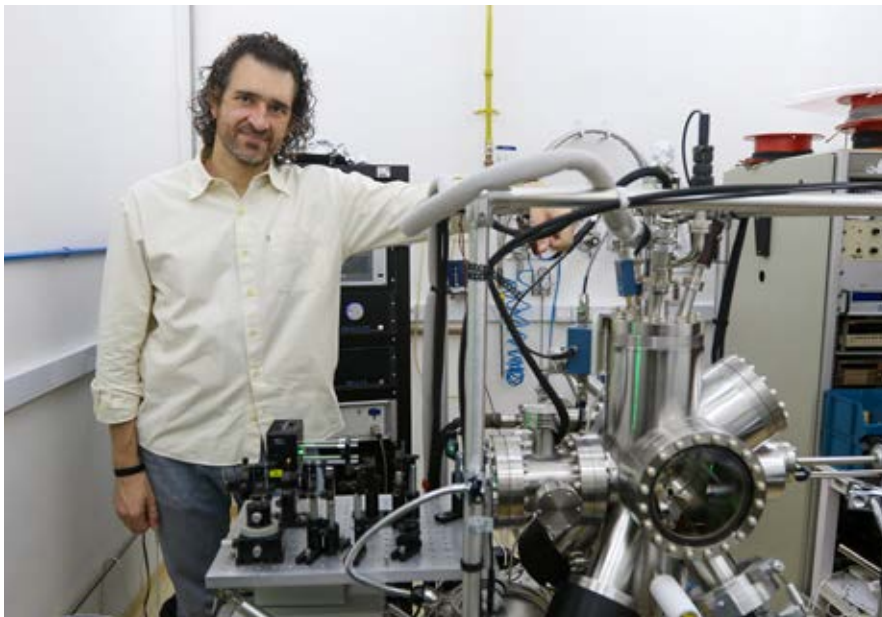
Inventors: Wagner José Fávaro and Nelson Durán Caballero
Units: Institute of Biology (IB) and Institute of Chemistry (IQ)
Licensed company: Nanoimmunotherapy Pharma Ltda.

PHYSIC

LIGHT DETECTION SYSTEM FOR PROBE SCANNING MICROSCOPES

Non-exclusive patent licensing BR102020015402-8

- The first case of invention without co-authorship developed at Unicamp and licensed to the international market, the system consists of three main parts: a small optical table connected to a scanning tunneling microscope, an ultra-manipulator accurate with three-axis movement and a parabolic mirror with high numerical aperture.



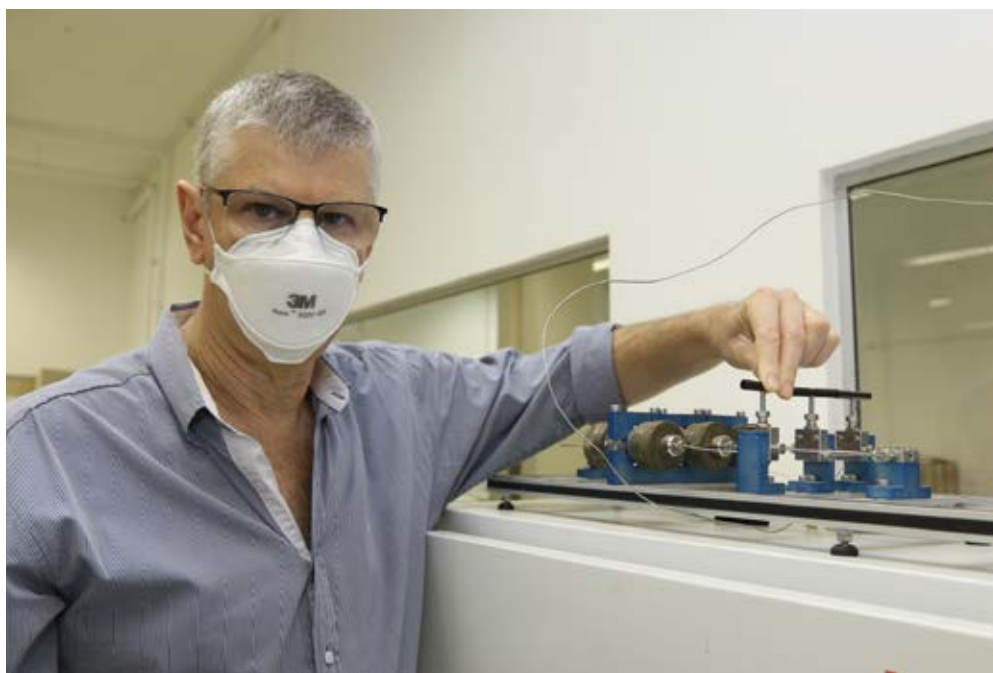
Prof. Luiz Fernando Zagonel

This structure offers huge light collection efficiency (about 70%), a relevant factor, since several systems operate at about 5%. The difference allows studying samples in a more agile way and with greater attention to details. In addition to injecting and collecting light from a small region of the sample, it is possible to do this in a much more efficient way.

Inventors: Luiz Fernando Zagonel, Ricardo Javier Peña Roman and Yves Maia Auad

Unit: Institute of Physics of Unicamp

Licensed company: RHK Tech



Prof. Edvaldo Sabadini (IQ)

- The technology enables Advanced Oil Recovery (EOR), improving oil extraction in the storage tank. The method involves the injection of diluted aqueous solutions of metal ions (mainly copper).

PETROLEUM

ADVANCED RECOVERY IN DEPOSITS

Exclusive patent licensing US17/620,152

They alter the wettability of the carbonate and thus allow the water to occupy the pores of the rock, previously impregnated by the oil, promoting its removal. It has been demonstrated that the use of this method is capable of increasing (by about 10%) the recovery of the original oil on site (OOIP). The efficiency of the method, as well as the explanation of the phenomenon was demonstrated with analyses such as in the time domain nuclear magnetic resonance imaging (TDNMR), sum frequency spectroscopy (SFG) and fluid displacement in core-holder systems.

Inventors: Edvaldo Sabadini, Oigres Daniel Bernardinelli, Eddy Ruidiaz Muñoz, Gabriel Soares Bassani, Rafael Valladares De Almeida, Luís Fernando Lamas de Oliveira and Victor Augusto Licio Garcia Vilela

Units: Institute of Chemistry (IQ), Center for Petroleum Studies (CEPETRO), School of Mechanical Engineering (FEM) and Repsol

Licensed company: Repsol S.A.

CHEMISTRY

LARVICIDE AGAINST *Aedes Aegypti*

Non-exclusive patent licensing BR 10 2017 026411 4

- The technology makes it possible to obtain a natural larvicide to combat the mosquito that transmits dengue, chikungunya, zika and urban yellow fever, from starch-based particles that store thyme oil.



Prof. Ana Silvia Prata (FEA)

The capsules behave similarly to the eggs of the mosquito *Aedes Aegypti* promoting the controlled release of the active ingredient only in contact with water and for up to five rain cycles. In this way, they can be applied in dry places that have the potential to accumulate standing water, such as potted plants, tires and other containers. The effectiveness against mosquito larvae is 95% in 24 hours, reaching 100% in 48 hours.

Inventors: Ana Silvia Prata, Juliana Dias Maia, Johan Bernard Ubbink and Marcio Schmieie

Unit: School of Food Engineering (FEA)

Licensed company: Vector Control

DENTISTRY

MUSHROOM EXTRACT FOR TEETH WHITENING

Non-exclusive patent licensing BR 10 2020 022728 9

- Licensed technology makes it possible to develop a natural whitener for dental treatments from shimeji mushroom (*Pleurotus ostreatus*). The extract obtained from the cap or stem of the mushroom (black and white) is transformed into a composition to remove stains from the teeth.

The natural form of whitening has the potential to reduce adverse reactions, such as irritation to the gums, the oral mucosa or the temporary sensitivity of the teeth, when compared to existing technologies on the market. The invention does not require the use of isolated substances which make the process more expensive and is environmentally friendly as it requires only the mushroom with a minimum of treatment. In addition, the whitener can be produced in different pharmaceutical forms, with semisolid and liquid versions.

Inventors: Gislaine Ricci Leonardi, Juliano Lemos Bicas, Débora Alves Nunes Leite Lima, Rodrigo Ramos Catharino and Maria Cibelle Pauli

Units: School of Pharmaceutical Sciences (FCF), School of Food Engineering (FEA), School of Dentistry at Piracicaba (FOP) and Federal University of São Paulo (Unifesp)

Licensed company: Webee Startups



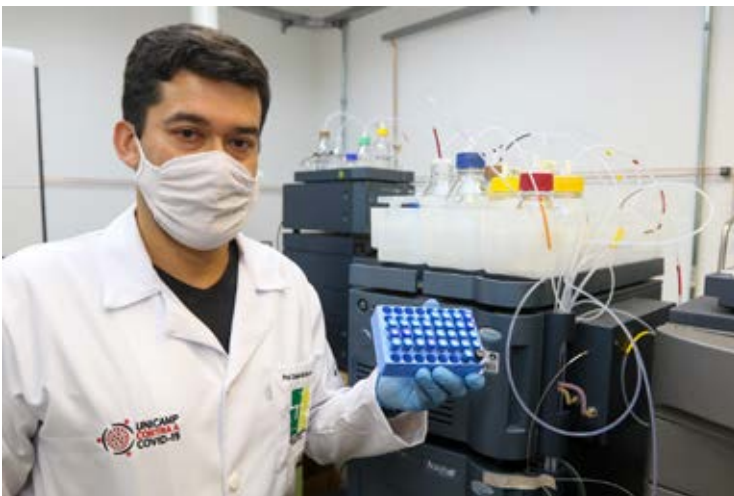
Prof. Débora Alves Nunes Leite Lima, Prof. Gislaine Ricci Leonardi and Prof. Juliano Lemos Bicas

HEALTH

PERSONALIZED TREATMENT FOR SCHIZOPHRENIA

Licenciamento não exclusivo de patente BR 10 2017 025852 1

- The developed method is aimed at predicting the success in the response of patients to treatment with antipsychotics. The technology assesses lipid signatures in blood plasma as biomarkers associated with the improvement of schizophrenia symptoms.



Prof. Daniel Martins de Souza (IB)

The test helps the personalized choice of medication for the control of schizophrenia at the time of diagnosis, promoting greater effectiveness and reduction of side effects that lead about 60% of patients to abandon treatment. Blood samples from patients diagnosed with schizophrenia were collected before and after treatment with the second generation of antipsychotics risperidone, olanzapine and quetiapine. The results still have the potential to contribute to the search for new therapeutic approaches.

Inventors: Daniel Martins de Souza (Unicamp), Adriano Aquino (Unicamp), Johann Anton Christian Steiner (University of Magdeburg, Germany), Guilherme Lionello Alexandrino (Unicamp), Michael Murgu (Waters Technologies do Brasil Ltda.), Alexandre Ferreira Gomes (Waters Technologies do Brasil Ltda.), Fábio Augusto (Unicamp)

Units: Institute of Biology at Unicamp (IB) and Institute of Chemistry at Unicamp (IQ)

Licensed company: Quarium

SOFTWARE MANAGES HOSPITAL TECHNOLOGY PARKS

Non-exclusive software licensing BR 18120034773

For the second consecutive year, the software GETS: “Technology Management for Health” owned by Unicamp was licensed by reference centers of medium and high complexity of the unified health system (Sistema Único de Saúde - SUS) following the partnership with the Brazilian Company of Hospital Services (Ebserh) and expanding covenants in the states of São Paulo, Bahia and Rio Grande do Norte. The software standardizes the nomenclature of medical-hospital equipment and clinical engineering procedures.

- The data generated from the inventory are used to identify medical-hospital equipment that has a high failure rate and program preventive maintenance, with the potential to reduce expenses and increase efficiency in productivity and availability of assets.



Prof. José Wilson Magalhães Bassani, Ana Cristina Bottura Eboli and Eder Trevisoli da Silv

Inventors: José Wilson Magalhães Bassani, Eder Trevisoli da Silva and Ana Cristina Bottura Eboli

Unit: Center of Biomedical Engineering (CEB)

Licensed Institution: Hospital das Clínicas da Universidade Federal de Uberlândia (HC/UFU), Centro de Referência e Treinamento DST/AIDS (SP), Complexo do Hospital de Clínicas da Universidade Federal do Paraná (CHC-UFPR), Complexo Hospitalar da Universidade Federal do Ceará (CH-UFC), Complexo Hospitalar Universitário da Universidade Federal do Pará (CHU-UFPA), Secretary of Health of the State of Bahia (SESAB - Hospital Ana Nery) and Municipal Health Department of Parnamirim (SESAD -RN)

CRANFLOW: SYSTEM THAT RECORDS AND GUIDES IN THE TREATMENT OF CRANIOFACIAL BIRTH DEFECTS

Non-exclusive software licensing BR 51 2015 000550 2



Prof. Vera Lúcia Gil da Silva Lopes (FCM)

Inventors: Vera Lúcia Gil da Silva Lopes, Roberta Mazzariol Volpe Aquino and Isabella Lopes Monlleó (UFAL)

Unit: School of Medical Sciences (FCM)

Licensed institutions: Federal University of Paraná Foundation (FUNPAR) and University of São Paulo (USP)

This was the fourth consecutive year that the computer program “CranFlow – Craniofacial anomalies: registration, flow and management”, a cotitularity of Unicamp and Federal University of Alagoas (UFAL), was licensed by health institutions or universities that benefit free of charge from a system that registers consultations and guides standardized evolutionary follow-up, based on international recommendations, for the description of craniofacial birth defects and management of genetic laboratory data of registered patients.

- The licensed institutions also collaborate with the academic community, allowing analyses and studies, by inserting through the system information that will compose the Brazilian Base of Craniofacial Anomalies (BBAC).

DIAGNOSTIC IMAGING

SYMPTOMS OF

INTESTINAL PARASITES

Exclusive patent licensing BR 10 2020 023751 9

The procedure advances the automation of the routine of clinical analysis laboratories, public and private, for the examination of intestinal parasites of humans, by computerized image analysis. The improvements provided to the automated diagnosis of intestinal parasites (DAPI III) allowed the purification of fecal samples more efficiently, with a high concentration of parasitic structures and a reduced amount of detritus. The sample is subjected to analysis using a customized motorized microscope with high resolution digital camera, controlled by software developed by the team. The DAPI III system is an unprecedented integrated reading and diagnostic device in the world capable of delivering results by imaging intestinal parasites.

Inventors: Jancarlo Ferreira Gomes, Alexandre Xavier Falcão, Celso Tetsuo Nagase Suzuki and Fabio Franco Teixeira de Freitas (ImmunoCamp)

Units: School of Medical Sciences (FCM), Institute of Computing (IC) and Institute of Chemistry (IQ)

Licensed company: ImmunoCamp Pesquisa e Desenvolvimento de Tecnologia Ltda.

FACILITATED

PREPARATION OF FECAL

SAMPLESFACILITADA

Exclusive patent licensing BR 10 2021 016360 7

The licensed invention proposes a new laboratory protocol for the processing of samples in parasitological examination of feces. It involves the combination of two aqueous solutions: one containing a dissolved polymer and the other a salt. When combined, a two-phase aqueous system is formed, called a Biphasic Aqueous System (SAB). SAB separates the parasites of interest from the detritus and fats present in human fecal samples, which can interfere with the test result. This aqueous system simplifies the work of the clinical analysis laboratory with efficiency, speed, practicality and low cost, and has the potential to increase access to feces examination of low-income people. The invention is still considered environmentally friendly, since it minimizes the use of volatile solvents, harmful to humans and the environment, and facilitates the disposal of waste at the end of laboratory processing.

Inventors: Alexandre Xavier Falcão, Jancarlo Ferreira Gomes, Edvaldo Sabadini, Stefany Laryssa Rosa and Celso Tetsuo Nagase Suzuki

Units: School of Medical Sciences (FCM), Institute of Computing (IC) and Institute of Chemistry (IQ)

Licensed company: ImmunoCamp Pesquisa e Desenvolvimento de Tecnologia Ltda.



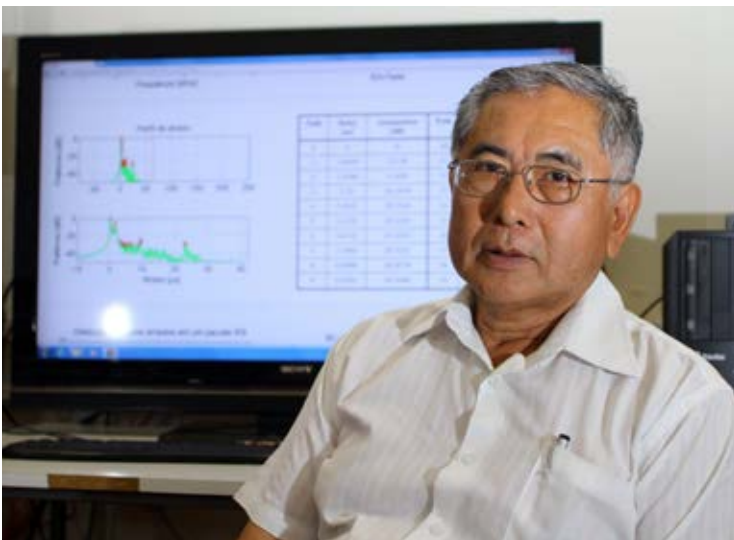
Felipe Soares, Doctor Researcher Collaborator of LIDS; Prof. Jancarlo Gomes; Prof. Alexandre Falcão; Celso Suzuki, Researcher, Master, Collaborator of LIDS; Bianca Santos, Doctor, Researcher, Collaborator of LIDS and Stefany Rosa, PhD student of FCM of Unicamp (from left to right).

INFORMATION TECHNOLOGY

COMPRESSION METHOD AND SIGNAL CONVERSION FOR DIGITAL TV BROADCASTING

Non-exclusive patent licensing PI1001786-0


- It is a method of remultiplexing signals that performs in a simple way the compression and decompression of BTS (Broadcasting Transport Stream), without loss of data or quality, for the transmission and reception of digital television signals, which reduces costs to rent the satellite channel by having a reduced file, for example.



Prof. Yuzo Iano (FEEC)

In addition, the technology has other advantages for companies that serve countries that use the Japanese Digital TV system, such as Brazil, since this method allows the conversion of data to other transmitters that use other standards, like the European one, which increases the area of transmission coverage. The technology also allows other applications such as cable TV distribution, fiber optics, direct terrestrial broadcasting, telecommunications systems, among others.

Inventors: Yuzo Iano, Fernando Silvestre da Silva, Cristiano Akamine and Ana Lúcia Mendes Cruz Silvestre da Silva
Unit: School of Electrical and Computer Engineering (FEEC)
Licensed company: Anywave Communication Technologies



In 2021, the Unicamp Challenge doubled the number of participants registered compared to the previous year, evidencing the wide scope that the online realization of the entrepreneurship incentive program based on Unicamp's patents presents.

EVENTS AND PROGRAMS TO STIMULATE ENTREPRENEURSHIP AND INNOVATION

- In 2021, the Unicamp Challenge doubled the number of participants registered compared to the previous year, showing the wide scope of the entrepreneurship stimulus program based on Unicamp technologies. With 55% of those enrolled from outside Unicamp, the 2021 Challenge also enshrined its national relevance, attracting participants from 12 different states, from four regions of Brazil, in addition to the participation of teams based in Portugal and Argentina.

Click here and learn more
about the Unicamp Challenge



UNICAMP CHALLENGE

Winning team: Re.Skin

Technology: Process that makes it possible to obtain an asymmetric membrane with only two faces, of natural origin, biodegradable and without the use of solvents for wound healing. (1003_GLUCOMANANA)

Academic mentor: Prof. Marisa Beppu, School of Chemical Engineering (FEQ), Unicamp

Members:

- João Lucas de Souza Rodrigues, undergraduate in Bioprocess Engineering and Biotechnology at UNESP
- Júlia Freitas Batista, undergraduate in Psychology by PUC-SP
- Mariah Zajankauskas Orçati, undergraduate in Bioprocess Engineering and Biotechnology by UNESP
- Marina Paolacci Carunchio, undergraduate in Bioprocess Engineering and Biotechnology by UNESP

82
teams
formed

333
registered
participants

300
people trained
in the workshop

INOVA JOVEM

- Aimed at any high school and/or technician student in the country interested in learning and developing entrepreneurial skills, the Inova Jovem program stimulates business development with social impact, based on the United Nations Sustainable Development Goals.

In 2021, the online format remained, bringing together 200 students in the Virtual Workshop on business modeling. The competition also offers mentoring and training for pitch presentation. The completely remote realization made it possible for students from all over Brazil to enroll in Inova Jovem, reaching students from seven Brazilian states plus the Federal District.

88
teams

360
registered participants

49
business mentors

46 schools
from 7 different states
and the Federal District



Winning team: WeCode

Schools: Federal Institute of Muzambinho, Colégio ETAPA III, Colégio Anglo Morumbi, Escola Estadual Professora Marilene de Oliveira Acetto and Colégio Poliedro São José dos Campos

Cities: Poços de Caldas (MG), São Paulo (SP) and São José dos Campos (SP)

Business ideia: Clubs to promote opportunities, learning and networking among students and professionals in the area of Information Technology (IT)

Members:

- Kauã Victor Dias dos Santos
- Kayky de Brito dos Santos
- Leonardo Matheus Piller Damas
- Luísa Manoela Romão Salles
- Pedro Fernandes de Oliveira

Click here and learn
more about Inova Jovem



- This was the 14th award that recognizes the efforts of Unicamp inventors to enable innovation through the transfer of protected technologies to the business sector and society, always based on the figures of the previous year.

INVENTORS AWARD

In 2021, the celebration took place in virtual form on June 17, in the morning and afternoon, with content related to the theme, in addition to cases of Unicamp's technology transfer success. **A total of 306 Unicamp professionals were awarded** in three categories: patents granted, licensed technology and technology absorbed by the market.

Units were also honored in the categories highlighted in technology transfer and highlighted in Intellectual Property Protection.



Prof. José Alexandre Diniz (FEEC) Prof. Renato Lopes (Inova), Prof. Ana Frattini (Inova), Prof. Marco Zezzi (IQ) and Prof. Cláudio Tormena (IQ) (from left to right)

UNITS IN HIGHLIGHT

Institute of Chemistry (IQ)

- Outstanding Unit in the Protection of Intellectual Property
- Responsible for 20 of the 64 patent filings in 2020

School of Electrical and Computer Engineering (FEEC)

- Outstanding Unit in Technology Transfer
- Responsible for 37 of the 48 technology licensing agreements signed in 2020



[Tribute videos and Inventors Award webinars](#)

INVENTORS AWARD MAGAZINE

- The fourth edition of the Magazine brings together 15 news about Unicamp partnerships with companies in 2020.

Among the contents, the highlight is a news report on two technologies from Unicamp - new products in the health and wellbeing sector - which were launched in the market. The magazine also presents the list of all the winners.

Learn more: www.inova.unicamp.br/premioinventores

Download Inventors
Award Magazine 2021



INOVA AWARD

- The 14th edition of the Inova Unicamp Innovation Initiation Award was held with a novelty in the submission of projects: the applicants had to point out and justify what kind of innovation their research fit into.

The initiative is part of the Inova Unicamp Innovation Agency's encouragement to make students of the University aware of the possibility that their research projects present an innovative bias, capable of solving a problem of society. For the second consecutive year, the activities were held completely online and the final was composed of six students, with two winners, in the categories Examining Board Assessment and Popular Voting.

WINNER PITCH IN THE EXAMINING BOARD ASSESSMENT

Student: Giovanna Shizue Tomita Lima, of the Chemical Engineering course with the project “Mapping the sanitary situation of a rural settlement, situated in the city Valinhos”.

Academic advisor: Prof. Dr. Jefferson de Lima Picanço

WINNER PITCH BY POPULAR VOTE

Vitoria Rebelo Mendes, of the Sports Science course with the project “Identification of critical success factors: a case study on the women’s football team of the Ferroviária Futebol S/A”.

Academic advisor: Prof. Dr. Leandro Carlos Mazzei

Click here and learn
more about Inova Award



14th
edition of
the Award

6
finalists

2
winners

INOVATION IN THE ARTS

Unicamp Innovation Agency and Institute of Arts at Unicamp have teamed up in the production of special content with the aim of promoting conversations about how innovation happens and can be stimulated in the field of Arts. The activities were divided into two webinars open to the whole community that sought collaboration and exchange of experiences. The first event was attended by national and international speakers, with representatives from the State University of Campinas, from the University of Cambridge and the University of Florida, and simultaneous translation. The activities carried out also promoted the discussion on intellectual property in the artistic sector, in addition to presenting applications dedicated to the protection of copyright.

09/02/2021:

Innovation in the Arts Webinar

Online transmission by Inova Unicamp with simultaneous translation.

[Click here to watch](#)



11/18/2021

Intellectual property in the artistic sector webinar

Online broadcast by Inova Unicamp.

[Click here to watch](#)



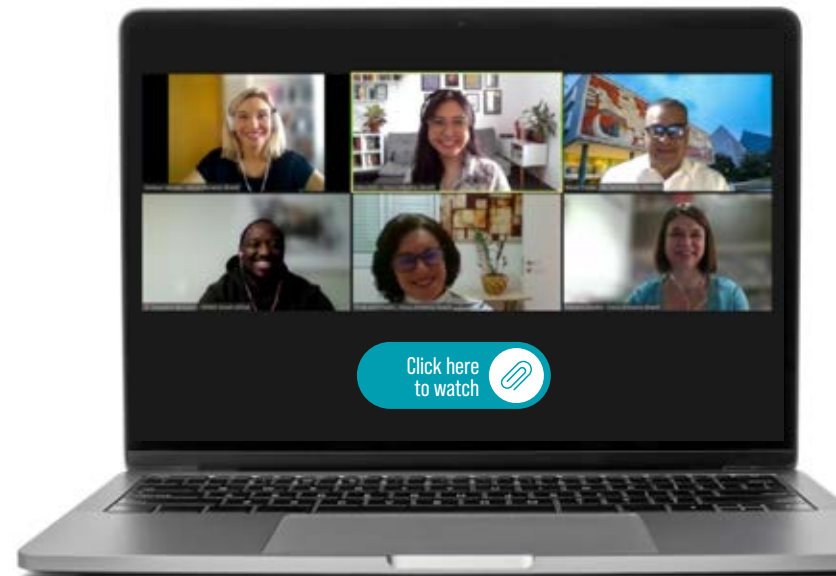
GLOBAL PARTNERS

- In order to bring Unicamp's entrepreneurial ecosystem closer to other innovation actors around the world, the Innovation Agency Inova Unicamp created, in 2019, Global Partners.

The program promotes actions that facilitate the access of university startups from other regions to the Brazilian market, as well as the Unicamp community to other innovative agents.

In 2021, the activities continued in virtual format and on September 16, the webinar Best Practices for Incubators was held, with the participation of the Technological University of Monterrey, Mexico, and UNISA University, South Africa, as well as the Incubator of Technology-based Companies of Unicamp (Incamp).

Learn more about the program:
www.inova.unicamp.br/global-partners



OUR GLOBAL PARTNERS



UNICAMP RANKS 1ST IN THE GENERAL RANKING OF ENTREPRENEURIAL UNIVERSITIES IN THE COUNTRY

*Rafael Piccoli Rocha,
FEJESP Higher
Education leader in
2021; Renato Lopes,
Associate Director
of the Inova Unicamp
Innovation Agency,
and Leonardo Gallissio
Rodrigues, Director
of FEJESP expansion
in 2021 (from left to
the right)*



1st place

in general ranking
of Entrepreneurial
Universities

1st place

in the innovation
category

1st place

in the Financial
Capital category

The State University of Campinas (Unicamp) ranked first in the general ranking of Entrepreneurial Universities 2021. The ranking is organized by the Brazilian Confederation of Junior Enterprises (Brasil Júnior) and prepared by the Junior Enterprise Movement (MEJ). Unicamp stood on the podium in the first three editions of the award, but it was in the 4th edition that the University won the champion title for the first time. The ranking scores the participating Universities in six categories, being them: Entrepreneurial Culture, Innovation, Extension, Infrastructure, Internationalization and Financial Capital.



In 2021, Inova Unicamp completed 15 years of mapping alumni companies with important milestones, as the register of more than a thousand alumni companies active in the market.

UNICAMP'S ALUMNI COMPANIES

ALUMNI COMPANIES' REVENUE DOUBLES AND REACHES 16 BILLION REAIS



Prof. Ana Frattini, Executive Director of Inova, presented the new mapping of alumni companies at the Unicamp Ventures Annual Meeting

In 2021, Inova Unicamp completed 15 years of mapping alumni companies with important milestones, as the registration of more than a thousand active alumni companies in the market and the growth in alumni companies' revenue, which doubled, going from R\$ 8 billion to R\$ 16 billion, in addition to the 17% growth in direct jobs generated in relation to the previous year.

The boost in the alumni companies' revenue was due to the growth of Unicamp's unicorn alumni companies, such as the Mobile Group, which owns companies like Play Kids and iFood.



1.131
registered alumni
companies



1.019
active alumni
companies



93
new alumni companies
registered in 2021



R\$16 billion
in revenue



38.963
direct jobs
generated



55
Unicamp spin-offs

ALUMNI COMPANIES REPORT 2021

Inova also published the second edition of the Unicamp Alumni Companies Report, which delves deeper into the data collected and analyzed in the 2021 mapping, such as:

- Location
- Colleges and Institutes that have trained members
- Collaboration with Unicamp
- And much more

It is also possible to read cases of successes of Unicamp's alumni companies in various areas of activity.

Download Alumni
Companies Report 2021



UNICAMP ENTREPRENEUR AWARD

- The award that Inova holds exclusively among the registered Unicamp Alumni Companies has reached its 5th edition with news: in addition to the traditional categories, Innovation, Socio-Environmental Impact and Greater Growth, the category Female Leadership was added.

Despite the growth of women entrepreneurs in Unicamp's ecosystem, who today represent 20% of the total number of partners with ties to Unicamp, there were few submissions of successful cases of female entrepreneurs, consequently, in four editions there was never a woman among the finalists of Entrepreneur of the Year Award .

Including the Female Leadership category was an action that had a positive result and made it possible that, among the four 2021 finalists, two were women and, for the first time, there was a female Entrepreneur of the Year elected from among the candidates who took, in addition to the title and trophy, R\$50,000 in marketing services offered by the sponsor [Agência Sabiá](#).

Prof. Antonio Meirelles (Tom Zé), Rector of Unicamp, announced and handed the trophy of female Entrepreneur of the Year to Soraya El Khatib, founder and CEO of startup S Cosméticos do Bem



SOCIO-ENVIRONMENTAL IMPACT:
S COSMÉTICOS DO BEM

The winner success case which awarded Soraya El Khatib as the Unicamp female Entrepreneur of the Year 2021 was submitted on the Socio-Environmental Impact category, with the clean technology patented by Unicamp and licensed by S Cosméticos do Bem, which developed it and has already put a dermocosmetic registered by ANVISA on the market.



Soraya El Khatib, CEO of S Cosméticos do Bem

The startup, which was incubated by the Unicamp Technology Base Companies Incubator (Incamp), has been developing research and products in the cosmetic and pharmaceutical area for ten years with the purpose of developing innovative dermofitocosmetics with the maximum utilization of plant raw material through supercritical extraction, free from toxicity and without polluting the environment or adversely affecting health.

The startup has already created seven quality labels that indicate care for the production chain and was founded by El Khatib, who has a degree in Pharmaceutical Sciences with a PhD in Biochemistry from Unicamp.

 [Click and access the website](#)

INNOVATION: HAL9000



Paulo da Silva Soares, CEO of Hal9000

The Unicamp's alumni company winner in the Innovation category was Hal9000, a company specialized in industrial safety with technological solutions for predictive maintenance monitoring for the food, automotive, textile and chemical sectors, among others.

The company has developed a Wifi sensor and Artificial Intelligence software for Industry 4.0 that calculates the predictability of machine failure and generates automatic information about the need for maintenance and purchase of materials, avoiding unexpected stops on a production line.

Hal9000 was co-founded by Paulo da Silva Soares, MSc and PhD in Electronics from Unicamp and professor of Electronics and Computer Engineering at the Centro Universitário Salesiano (UNISAL) in Americana.



[Click and access the website](#)

FEMALE LEADERSHIP: EPISTEMIC

- The winning success case in the Female Leadership category was the alumni company Epistemic. The startup develops tools to improve the lives of people with epilepsy. Among the products offered is an application for automatic patient data collection, a web platform that shares information with the doctor and a wearable device that alerts epileptic seizures 30 minutes in advance and sends reminders to the time of medications.

The company was founded by Paula Gomez, graduate and post-graduate by School of Electrical and Computer Engineering (FEEC) and her mother Hilda Cerdeira, a former professor at the Institute of Physics (IFGW) at Unicamp. With Hilda Cerdeira's research on electroencephalogram signals, Paula Gomez identified epileptic seizure patterns and developed the technology. The engineer won the Cartier Women's Initiative Awards, in 2018, was a finalist

in the Samsung Creative Startups, in 2019, being one of the companies selected for a trip to Korea and, last year, the startup was among the 21 classified in the Innovative Women Award, of FINEP.



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Paula Gomez, CEO of Epistec



Michel Cusnir, CEO of Dilettanta

- Dilettanta works with software development for startups, whether to help accelerate business, generate the Minimum Viable Product (MVP) or teach mature companies how startups operate.

HIGHER GROWTH: DILETTANTA SOLUTIONS

The alumni company headquartered in Unicamp's Science and Technology Park was created in 2018 and has almost tripled in size and revenue in the last three years with the success of startups in which it maintains shareholding.

In 2020, Dilettanta invested in its own majority-owned startup, Dilettanta Pay. The company currently has 70 employees, of whom 17 are partners. The revenue forecast for 2021 is R\$ 14 million. The CEO of Dilettanta Solutions was Michel Cusnir, a graduate in Computer Science from Unicamp.



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UNICAMP VENTURES

- In order to foster an entrepreneurial culture and promote the relationship between Unicamp's alumni companies, Inova has maintained an active role together with the Unicamp Ventures (UV) council, a group formed by former student entrepreneurs who carry out their activities on a voluntary basis.

Due to the end of the mandate of the board members, in 2021 the UV Board received new members, check out the complete new formation that always has the executive director in place at Inova Unicamp leading the board, as determined by the [UV regulation](#):



Prof. Ana Frattini, Leonardo Gross, José Augusto Moura, Eduardo Neger, Mabel Alvarado, David Figueira, Roseane Ramos and Marcelo Braga (from the left to right)

PRESIDENT OF THE ADVISORY BOARD:

Prof. Ana Frattini (Inova Unicamp)

EXECUTIVE PRESIDENT OF UV:

David Figueira (Lamas Corp) *

UV COUNCIL MEMBERS:

Eduardo Neger (Neger Telecom) *

José Augusto Moura (Agência BRSA) *

Leonardo Gross (DigitalHealth.Works) **

Mabel Alvarado (Alcance Innovation Consulting) *

Marcelo Braga (Search RH) **

Roseane Ramos (Agência Sabiá) *

Thierry Cintra Marcondes (Empatia do Silêncio) **

ANNUAL MEETING

- Together with Unicamp Ventures, Inova held five events focused on the experiences of Unicamp's alumni companies, four in the webinar format, whose themes were:



- Management Efficiency
- Intelligence and Data Privacy
- Raising Investment: Corporate Venture
- Marketing and Sales

The differential this year was that the 16th Annual Unicamp Ventures Meeting, when the Entrepreneur Award pitches occurred in the programming, took place in studio format, with most of the speakers present in the recording environment, with some virtual participations and the entire virtual audience. In all, UV events received 1,359 registrations.

 [Click and access the website](#)

UNICAMP VENTURES PODCAST

Another partnership that remained in the scope of the alumni companies was the Podcast that interviews several entrepreneurs of the Unicamp ecosystem. The program is a realization of Inova Unicamp with Unicamp Radio and TV, which together published five new episodes in 2021, available on major aggregators such as **Spotify, Deezer and Apple.**

Check out the themes and episodes from the last two seasons and follow the show on your favorite podcast aggregator:

 [Click and access the website](#)



#10 | Entrepreneur of the year



 [Click here to listen](#)

#9 | Digital Transformation



 [Click here to listen](#)

#8 | Unicamp Ventures in Artificial Intelligence



 [Click here to listen](#)

#2 | Unicamp Ventures in the healthcare sector



 [Click here to listen](#)

#6 | Unicamp Ventures in the food sector



 [Click here to listen](#)

#5 | Talent Management



 [Click here to listen](#)

#4 | Entrepreneur of the year 2020



 [Click here to listen](#)

#3 | Unicamp Ventures and PIPE Fapesp



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#2 | Unicamp Ventures in the healthcare sector



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#1 | Unicamp Ventures in agrobusiness



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Companies hosted in the Science
and Technology Park increased by
37% the generation of jobs.

UNICAMP'S CIENCE AND TECHNOLOGY PARK

UNICAMP PARK: IMPACT ON INNOVATION AND SOCIETY

● Companies hosted in the Science and Technology Park increased by 37% the generation of jobs.

The complex dedicated to fostering innovation and entrepreneurship more than doubled the number of new R&D projects signed in relation to the previous year.




In all, there were **11 new R&D projects signed in 2021** together with the companies of the Park and Unicamp **with a total value of R\$ 8,811,597.80**, while in 2020, 5 covenants were signed.

The Park also had a positive impact for the Metropolitan Region of Campinas in the direct generation of jobs, which **increased by 37% compared to the previous year and reached 729 jobs in 2021**.

Most of these positions **(74%) are for Research and Development positions** within companies (R&D), among which are the 41 ventures such as startups, company research laboratories, and companies incubated at Unicamp's Incubator for Technology-Based Companies (Incamp).

In addition to the results in the R&D area, the Park demonstrated the **strengthening of incubated companies** and hosted startups with a 74% increase in their billing compared to 2020. Together, the 32 companies earned **R\$54.5 million in 2021**.

Park Indicators in 2021

-  **729** positions of which 74% are in R&D
-  **R\$ 56.480.778,70** fostering and investment raised by companies
-  **R\$ 54.511.774,34** total billing of startups and incubated companies
-  **05** pre-incubated projects
-  **16** incubated companies
-  **01** graduating in 2021
-  **55** companies graduated by Incamp [accumulated]
-  **41** established companies

PARK COMMUNITY

MC1: DIGITAL TRANSFORMATION FOR RETAIL

MC1 is an example of how the research covenants signed between the companies of the Park and Unicamp reach solutions to daily problems and increase the competitiveness of companies that invest in science and innovation. The global provider of cloud-based mobile solutions for sales and trade marketing teams maintains a space within the Unicamp's Science and Technology Park that facilitates interaction with researchers to carry out Research and Development (R&D) projects with Unicamp.

The partnership has already identified bottlenecks, investigated tools, proposed structural changes, and resulted in the invention of a prediction method in computer systems. The technology was designed based on Machine Learning Techniques to mitigate demand problems and provisioning of internet resources, which directly interfere with the response time and costs of the company that works with mobile apps.

- “The results of this partnership are continuously incorporated. We have already changed processes, particularly in how we forecast demand and calculate total cost to serve. The architecture of our solutions was directly influenced by these investigations that generated the joint patent application. The quality of training of people at Unicamp also helps us to hire professionals with the knowledge and experience we seek”, says Kayo Scrocaro Hisatomi, architecture director at MC1.



MC1's offline app uses Artificial Intelligence and shows in 3 minutes the best position of the products on the shelf.

MC1 serves over 110,000 users in 31 countries with real-time (on and off-line) applications and has as customers the giants PepsiCo, Bimbo, Heineken and Kimberly Clark. The company has been recognized four times as an industry leader by Gartner. It won the Promotion Optimization Institute (POI) award in three categories (Retail Activity Optimization (RAO), Retail Merchandising and Virtual Calls/Telesales) and was ranked by technology magazine CIOReview, among the top 20 companies transforming business in 2021.



ANNUAL REPORT OF THE UNICAMP'S SCIENCE AND TECHNOLOGY PARK

These are some of the many data and analyses available for free download in [Annual Report of the Unicamp's Science and Technology Park 2021](#), which for the first time will have a publication dedicated to the results of the Park and its Incubator, with space to present more success cases of the installed companies.

Access the full content with more indicators in the library of Inova Unicamp.

Download Park Report





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