



SIX DECADES OF ACCOMPLISHMENTS AND OUTGROWTH OF CHALLENGES

BB EDITORA
(PUBLISHER)



SÃO PAULO - 2017

GOLD QUOTA



SILVER QUOTA



A close-up, high-contrast photograph of a hand holding a pen. The hand is positioned on the right side of the frame, with the index finger and thumb gripping the pen. The lighting is dramatic, highlighting the contours of the hand and the texture of the skin. The background is dark and out of focus.

A Word from the President



Ladies and Gentlemen, Ceramics friends,

I am honored to introduce this book about ABCERAM.

Considered the first Association in this sector, it has always opened its doors to entrepreneurs, researchers, teachers, professionals, artists, students and all those who are interested in the world of Ceramics.

During all these years, topics ranging from raw materials to high-tech materials, covering all sectors of Ceramics, have been addressed in technical meetings, congresses, seminars and other events organized by ABCERAM. This gives the Association a different perspective in the eyes of public and private institutions.

It is true that ABCERAM underwent several changes over the last 60 years or more. Its history is composed of moments with great events attended by representatives of the various sectors and levels of attainment, but also of periods with fewer events and participants.

It is important to highlight that only once did our Congress not take place, due to the difficulties faced by the country at the time.

The following pages of this book will enable you to verify that the activities involved, especially those with the participation of the associates, collaborators and others, were fundamental to helping us stand where we are today, and with so many achievements.

Our present, as well as our past and future, is composed of struggles to defend the Ceramics sector in its various areas. Many of those who are no longer with us will not be able to read this work and the important contributions they have made over the years. Therefore, on behalf of all, I hereby pay tribute and show gratitude for the creation, growth and maintenance of the Association.

It is important to highlight those who contributed to the accomplishment of such brilliant work: Dr. Marco Antonio Pacheco Jordão, the employees of ABCERAM, the sponsors, those who contributed to the production of the texts, and to BB Editora, that spared no efforts to achieve a common dream - this work.

To conclude, I wish everyone an excellent “journey” through the following pages, reviving and knowing more about the history of this sexagenarian institution, which brings together all those who have in Ceramics a piece of their soul.

On behalf of all the Directors and Board, I extend our fraternal greetings.

Antonio Carlos de Camargo
President

Summary



THE IMPORTANCE
OF SOCIETIES
AND SCIENTIFIC
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OF ABCERAM FOR
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Chapter 01

The Importance of



Societies and Scientific Associations

The Importance of
Societies and Scientific
Associations



Giuseppe Bertini, *Galileo Galilei che mostra l'utilizzo del cannocchiale al Doge di Venezia*, 1888. Sala Bertini, Villa Andrea Ponti, Verese-Italia

The Importance of Societies and Scientific Associations

From the start, through the great scientific discoveries, humanity has undergone numerous transformations that have brought great improvements to society. These revelations allowed new insights about the universe to be shared, thus enabling people to better understand the world around them.

As science evolved, such discoveries became more and more relevant within their contexts. Consequently, all indispensability that had to be resolved became noticeable, so that the process of scientific studies could be duly completed with more agility.

In this scenario, the first scientific societies emerge, also known as associations, formed by specialists from a sphere of knowledge or science as a whole. These legal entities provide the union of bright and inherent minds to expose and discuss the results of their research, enabling them to be discussed, analyzed and subsequently disseminated.



The earliest existing societies were limited to informal gatherings in which groups of scholars debated various themes, from medicine to philosophy. Over time, these groups evolved into institutions, the most well-known being Accademia dei Lincei, founded in 1603 by four young aristocrats, including Prince Federico Cesi. It is also known that Galileo joined the Academy and disclosed his astronomical discoveries in it. Despite the great relevance of this institution, the first scientific society to receive an official authorization from the Catholic Church was Accademia del

Cimento, founded in 1657 in Florence by two pupils of Galileo. It was sponsored by Prince Leopoldo de 'Medici, who brought together the largest collection of scientific equipment of the time, during the ten years of existence of society. Over time, new societies emerged in several other European countries, taking on distinct characteristics, such as the Royal Society, founded in London in 1660, and Académie des Sciences, founded by Louis XIV in 1666.



General Collections, Royal
Society, Crane Court, off
Fleet, London, 1883

A MEETING OF THE ROYAL SOCIETY IN CRANE COURT (c. 1661).



In subsequent scientific societies, there was concern that their members would publish their work in book form, which often could not be accomplished because of financial difficulties. Thus, in order to stimulate public support and encouragement, the institutions started to publish periodical publications of the contents of the meetings. Scientific journals emerged in the seventeenth century, propelling the development of science alongside books that convey broader content with greater impact.

When they began to be published, magazines played a key role in communicating science. They appeared as the evolution of the exchange of letters between researchers and the minutes of scientific meetings. Scientists began to spread their ideas through personal mail, sent to their friends to report their findings, and these circulated among the small groups that critically examined the information.

As the letters were somewhat personal and slow to disseminate, they were not the ideal method to communicate the theories discovered. The minutes were more efficient because they were

reported during company meetings and then printed briefly to serve as a source of inquiry for the members of the organization. These forms of communication influenced the emergence of magazines, but they did not cease to exist. Subsequently, the letters became a form of personal communication between scientists, and the minutes, or annals, began to compose a document that recorded the papers presented at meetings.

Progressively, new roles and more relevant functions were being added to the associations that underwent many modifications, essential to their development. They are now tasked with preserving the history of science and related professions, creating incentives for them to continue to develop. To achieve these goals, they organize and promote scientific events, congresses, courses, and the most diverse publications.

It is not always so simple for an institution to manage a periodical publication. Many begin with simpler products to high quality high standards. The great advantage is the variety of ways in which science can be disseminated to its members as well as professionals in the field, or to the general

public. Many provide information-rich databases, representative surveys, and area-specific studies that help not only professionals and scholars in the field, but also university students who seek to enhance their knowledge, and also contribute to their interest in the areas of scientific studies and associations, understanding the benefits that legal entities can bring to their professional life.

The specialization and qualification courses provided by the institutions are also excellent not only for the prestige of the associations, but also for the market in general. Thus, the associations can also form partnerships with private companies, seeking to achieve new goals and bringing significant contributions to the industry.

The importance of events for scientific societies

The holding of events by the institutions is of utmost importance for the areas of scientific research. In addition to promoting the name of the legal entity that hosts them, the events help in the process of professional development, in updating scientific research, in strengthening the relationship between professionals in the field, and in the level of attainment of the sector.

Events are able to generate new bonds and attract new partners to institutions that are interested in the work that is well done and in the new opportunities that can be generated.

The importance of scientific research to society

Scientific research is undoubtedly of great importance for today's societies. Large icons of science have participated in numerous scientific societies around the world. Through their studies, they have contributed to great discoveries, bringing to humanity vast improvements and new processes that have revolutionized all sectors: social, economic, political, military, industrial, as well as cultural and intellectual.

All that is known today was discovered through studies and research in the past. It is also known that there is still a long way of

new discoveries to go through. But, to make it happen, science and research must be constantly encouraged. Associations have been playing a fundamental and effective role in this regard, with persistence, effort, determination and cooperation to continue playing their role in society, seeking to expand and diversify their responsibilities more and more.

Source:

LEONARDO, António José. *Breve História das Academias Científicas*. Available at: <http://dererummundi.blogspot.com.br/2007/07/breve-histria-das-academias-cientificas.html>

WITTER, Geraldina Porto. *Importância das sociedades/associações científicas: desenvolvimento da ciência e formação do profissional - pesquisador*. Available at: http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=s0006-59432007000100002

Chapter 02





The birth of ABCERAM

The birth of ABCERAM



The birth of ABCERAM

Ceramics in Brazil



Cerâmica Marajoara.
Brazilian archeology
collection from
Museu Nacional
UFRJ – Rio de Janeiro,
Brasil. By Dornicke

Even before the discovery of Brazil by Cabral, the civilizations that inhabited the country and the entire South American continent already possessed a specialized technique for pottery. From the national surveys, one of the earliest evidence of this material is the island of Marajó, which, because of its characteristic - born in a pluvial plain - flooded every year. In other words, 5,000 years ago, indigenous peoples were already conducting modeling with colors and varieties in well-defined forms and techniques, such as scraping, incising, excising and painting.



Within the studies about national pottery, an evaluation that analyzes the anthropomorphic aspect of these materials stands out. In other words, most of the arts produced were loaded with symbols, such as snakes and lizards in relief, on objects like spoons, vases, etc.

When discovering Brazil with its dense jungle, rich in clay and such evolution in the production of ceramics, the Portuguese who landed here were able to adapt very easily the European technology. They created several potteries within mills, in the farms of the Jesuits and other locations.

With regard to the focus of this production in Brazil Colony, day to day products such as bricks and tiles were produced. The production was carried out manually. Over time, special techniques were applied in the development of ceramics. One example was the adoption of lathe for the creation of this type of product. Lathe, in the hand of experts, had more quality and finish, besides generating greater production in less time.

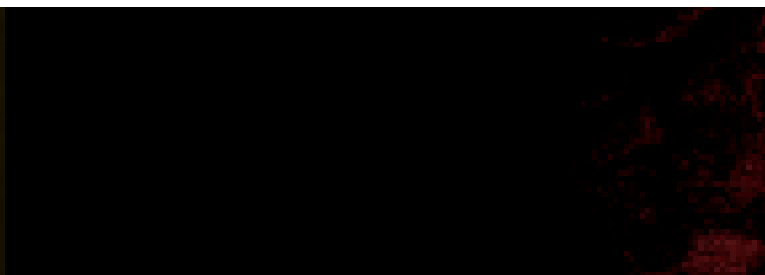
Such knowledge continued until the beginning of the 20th century. It went from a primitive culture of political, economic and territorial metamorphosis in Brazil, to the real development of a more organized society. On leaving the handicraft, the pottery production took a great leap in a period of “industrialization”.

This was because Brazil at the beginning of the 20th century already had an established social organization. Its relationship with other countries adopted economic growth policies, based on the evolution of modal transportation, housing, education and health. Thus, the industry that was established with a focus on ceramics evolved significantly, especially during the world wars.



Companhia Nacional de
Álcalis – Cabo Frio, RJ





In the first decades of the twentieth century, large cities emerged and most of them received European immigrants and a few refugees, especially during World War II. In fact, this worldwide event produced a productive effect in Brazil. With high demand for residential buildings, one of the main raw materials of the time, wood, was missing. It was mainly replaced by bricks.

In addition, the company adapted to the architectural precepts of Europe, which brought in the use of various products based on ceramics such as tiles, table china, etc. From the familiar pottery handicrafts, Brazil came across big industries and their imported machinery.

The productive, yet embryonic technique undertaken, gained new procedures, increasing in large scale the ceramic segment of the country. Large international industries invested in technology to fit the growing segment of ceramics.

The earliest industries of this type were settled in Brazil between 1900 and 1940. These new brands started

to produce tableware, electrical insulators, sanitary ware, tiles and stoneware. By mid twentieth century, the national production capacity was very efficient, adapting to even more sophisticated experimentation and, thanks to urbanization, the sanitary ware industry was boosted.

With the procedural innovations, the interests of the ceramic sector were growing, directing the enthusiasm of professionals of the area, who sought the improvement and opportunities to launch and concretize more and more this promising sector. Thus, the demand for an optimized study made it necessary to create an organization that could contribute to the progress of the sector, while developing the technical- scientific knowledge of the area to ensure a concrete and linear growth.



The start of it all

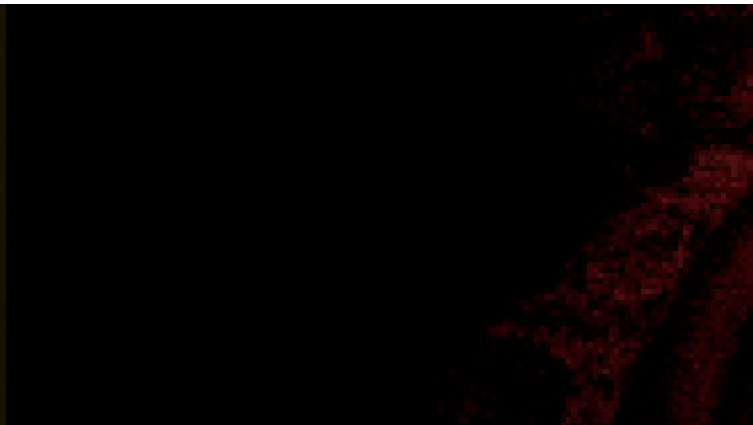
In the 1950s, engineers Ad Posnick and D. M. Andrews landed in Brazil to run Industria Ferro Enamel do Brasil. Both, along with engineer Herbert Rolke, who had been residing in the country for some time, always expressed interest in the creation of an association of potters in Brazil. Thanks to this great desire and to the contact that the engineers had with the leaders of the ceramic industries, they succeeded in convening a meeting to discuss the matter.

Several important names participated in a preliminary meeting, among them: Francisco de Salles Vicente de Azevedo, George Duprat Figueiredo, Nicolau V. Forjaz, José E. Moraes, Armando Amarante, Arthur Schmidt, F. Franceschini, F. Angeleri, Fernando Arcuri Jr, José Sarpi and others, some of them representing companies such as Porcelite, Klabin, Matarazzo, Porto Ferreira, Cerâmica São Caetano, Zappi, Ibar, Aremina, Sammarone, Argilex, Cerqueira Leite, Hervy, Magnesita, Itabasil, Royal Porcelain, Martini, Nadir Figueiredo, Ceramic Cologne, Eisa, Mauá Porcelain, and IASA.

These representatives were aware of the importance of the Association of Potters, along the lines of German, French, English and American societies, and of the importance of this step for the sector at national level. Thus, in September 1953 the Brazilian Ceramic Association (ABC) was born. It was a civil society whose status was registered on November 28, 1953.

Registration
Certificate of
Associação Brasileira
de Cerâmica





ABCERAM

ABCERAM, born as ABC, is a non-profit civil association whose mission is to encourage the interaction of individuals and legal entities in the ceramics sector and related areas, through courses and events.

Aiming at the development of this sector, the institution promotes scientific and technological publications, generating even more knowledge for a concrete advance of the area. It also promotes exchanges with experts and other National and International Associations, participating in professional training events, research, development and technological innovation.

Amidst its principles and its seriousness as a scientific institution, ABCERAM aims essentially at the promotion and defense of ceramics in the artistic, scientific, cultural, didactic, business, industrial and technological plans.

In 2013, the Statute of the institution was revised, thus changing its corporate name to “Associação Brasileira de Cerâmica - ABCERAM”.



Headquarters

From the start, the Associação Brasileira de Cerâmica was installed in the former Campus of the University of São Paulo - USP, in Coronel Fernando Prestes Square, in Bom Retiro, in rooms specifically requested by the Instituto de Pesquisas Tecnológicas do Estado de São Paulo (IPT).



In the first management of engineer Antônio Ermírio de Moraes, the premises of the ABC headquarters were expanded and modernized. They remained in this location until 1976, when its headquarters were transferred to Rua Maracaju, in Vila Mariana. Subsequently, the headquarters were based in two distinct locations in Vila Clementino. In 1997, they returned to the premises of IPT, in Cidade Universitária, according to an agreement signed by the two institutions.

The first
headquarters of
Associação Brasileira

First Board of Directors of Associação Brasileira de Cerâmica

President: Prof. Dr. Francisco de
Salles Vicente de Azevedo

Vice-President: Eng. Fernando Arcuri
Júnior

1st Secretary: Dr. Jorge D. Figueiredo

2nd Secretary: Dr. Luciano Barzaghi

1st Treasurer: Dr. Armando Amarante

2nd Treasurer: Dr. Nicolau V. Forjaz



Second headquarters
of Associação
Brasileira de
Cerâmica



Third headquarters of
Associação Brasileira
de Cerâmica





Main Activity

Throughout its 64-year history, ABCERAM has created a number of tools and methodologies, which have been increasingly improved to contribute to the development and dissemination of the national ceramic sector.

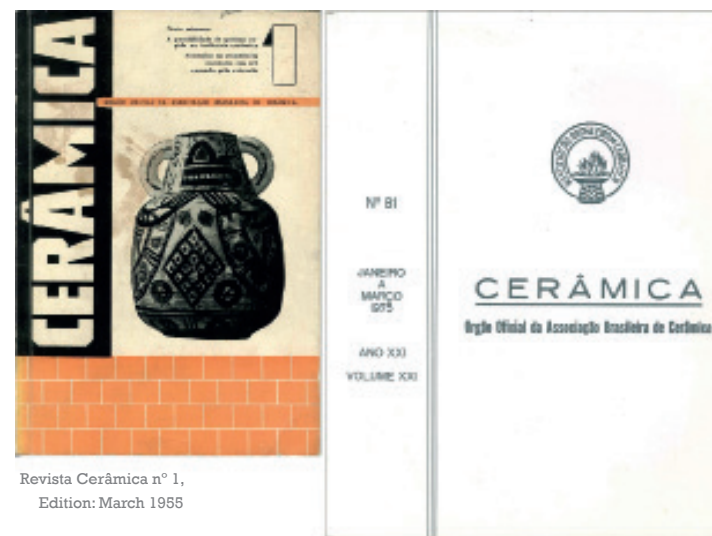
Through its publications and the implementation of a constantly updated Database, the institution collaborates with the dissemination of information on important studies for the sector, assisting it in countless ways.

Businesses and educational institutions are key players in this issue. In addition to contributing, they know the importance of the association for the progress of the sector. Thus, they integrate in some way the mechanisms adopted by the institution for the effective diffusion of knowledge.



Present headquarters of
Associação Brasileira de
Cerâmica





Revista Cerâmica nº 1,
Edition: March 1955

Revista Cerâmica, nº
81. Edition: January to
March 1975

Cerâmica Magazine

Cerâmica Magazine had its first publication released in March 1955. Its main objective was to publish scientific articles and studies of interest to the ceramics community, which were presented at congresses held in the year prior to its edition.

The main topics covered by the scientific studies that comprise the magazine are: ceramic art, abrasives, bio-ceramics, advanced ceramics, white ceramics, tableware, electro-electronic ceramics, structural ceramics, magnetic ceramics, nuclear ceramics, optical ceramics, chemical ceramics, thermo-mechanical ceramics, pottery, cement, ceramic matrix composites, refractory materials, coating materials, raw materials, glazes, glass and glass ceramics, microstructural analysis,

basic science, instrumentation, manufacturing processes, powder synthesis, characterization techniques, among others.

To the great scholars of the area, it is of extreme importance to have their theses published in the Ceramic Magazine. After all, it is understood in the academic environment that, to be part of the Science collection, thesis should be published in scientific journals with analysis or arbitration system. Thus, to be approved, the works are rigorously analyzed by specialists in the subject matter. In 1975, the format of the magazine was updated, to match it with those of technical-scientific, national and foreign magazines. In 1998, the journal was chosen to be part of the SciELO

(Scientific Electronic Library Online) Project, a platform that has a database with the content of the main Brazilian scientific journals, allowing access by researchers from several countries, thus internationalizing the publication.

Publications of the editions have now become possible, thanks to the support of partner institutions, especially Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (Capes) and Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq).



Revista Cerâmica Industrial, nº 1
Edition: March and April 1996

Cerâmica Industrial Magazine

Revista Cerâmica Industrial was created in 1996. Its mission is to contribute to the update and development of professionals who work in the ceramics segment. From the start, its chief editor is Anselmo Ortega Boschi. The magazine is supported by financial resources provided by a pool of companies.

As a result of the scanning of the magazine, the dissemination of information was further strengthened. Through its site, one can have access to a wide collection that has certainly contributed with the industry for over 20 years. In addition, it will prepare the experts with what is to come.



Revista Materials Research Industrial, nº 1. Edition: March and April 1996

Materials Research Magazine

The Materials Research magazine is dedicated to experimental research articles, theoretical simulations and processing the structure and properties of materials.

The magazine's creation originally came from the fact that excellent works presented at important congresses were submerged in short-lasting annals, restricted international publicizing, a phenomenon labeled by the renowned Scientific American Magazine as "Lost science in the third world." Thus, with the creation of the magazine, scientific productions of Brazilian researchers and of all Latin America, have their works published internationally.

At first, the idea was discussed at the general meeting of the 11th Congresso Brasileiro de Ciência e Engenharia de Materiais (CBECIMAT) in 1994.

Subsequently, in the 12th CBECIMAT in 1996, it was decided to create the magazine. It is worth emphasizing that the project was only possible thanks to the enthusiasm and commitment of members of the editorial staff, especially Dr. Fernando Rizzo and José Carlos Bressiani, and, of course, the institutions responsible for the magazine.

Currently, it is edited by the Associação Brasileira de Cerâmica (ABCERAM), Associação Brasileira de Metalurgia e Materiais (ABM), Associação Brasileira de Polímeros (ABPol), Sociedade Brasileira de Crescimento de Cristais (SBCC), Sociedade Brasileira de Cristalografia (SBCr), Sociedade Brasileira de Microscopia e Microanálise (SBMM), Sociedade Brasileira de Pesquisa em Materiais (SBPMat), and has its financial resources provided by Capes, CNPq and FAPESP.



Institutions that contributed to the development of ABCERAM

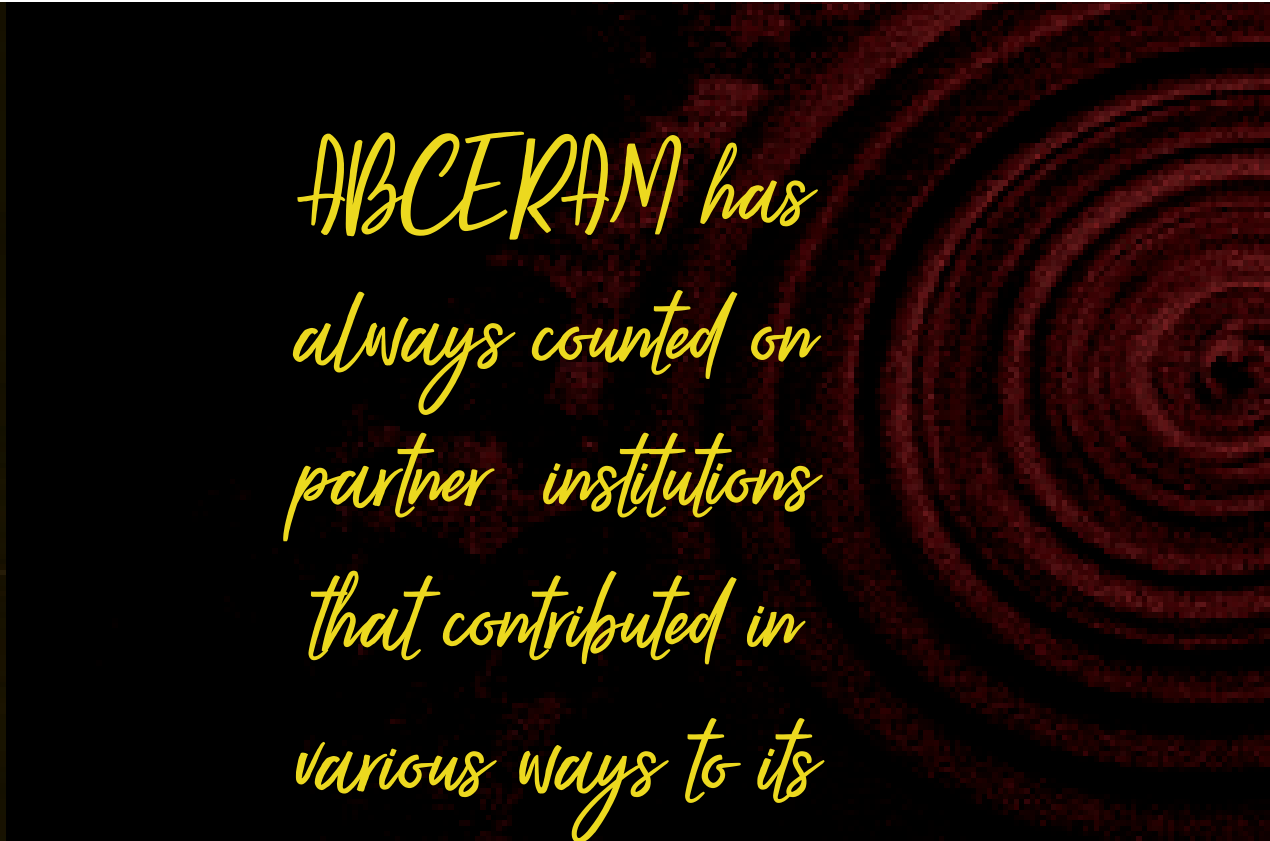
Throughout its history, ABCERAM has always had partner institutions that contributed in various ways to its evolution.

The Instituto de Pesquisas Tecnológicas had a fundamental participation in the creation of ABC, and both legal entities maintain close ties to this day. Together, they have greatly contributed to the development and strengthening of ceramics at national level. All the heads of the “Ceramics Sector” held the presidency of the Association and, over the years, IPT technicians integrated almost all the Boards of Directors of ABCERAM.

Through the events / meetings promoted by ABCERAM and the publication in March 1955 of the first official magazine of the Association,

the “Cerâmica”, the IPT Ceramics Laboratory, the only one in the country at the time, was able to publicize its work, mainly in the area of raw materials, which aroused great interest, resulting in numerous partnerships with industries of various ceramics segments (sanitary, refractory, pottery, coating materials and others).

Other institutions have also contributed a lot to the association and deserve all the credits for believing and collaborating in the development of ABCERAM’s activities. The University of São Paulo (USP), partner since the start, Instituto de Pesquisas Energéticas e Nucleares (IPEN), Serviço Nacional de Aprendizagem Industrial (SENAI), the Instituto Nacional de Tecnologia (INT) and Universidade Federal de São



*ABCERAM has
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evolution.*

Carlos (UFSCar) participate actively, through their representatives: the Board of Directors and the ABCERAM Directors or Technical Committees and Event Planner Committees, such as the Brazilian Ceramics Congress.

Recently, Centro Universitário da FEI and Universidade Federal do ABC, were added to the partner institutions. FAPESP, Capes, CNPq and FINEP Agencies of FAPESP, also play a key role in working closely with ABCERAM. Thanks to the financial support of these institutions, the Ceramics and Materials Research Magazines are issued.

Chapter 03

The importance of H



ABCERAM for the development of the Ceramics

The importance of ABCERAM
for the development of the
Ceramics Sector



The importance of ABCERAM for the development of the Ceramics Sector

The ceramics industry attained great achievements throughout the industrial process experienced in Brazil, undergoing numerous modifications and promoting major transformations in the economic scenario. Since its creation, ABCERAM has been following this process by encouraging the sector. This stimulus is fostered through the activities of the Association, ranging from the Technical-Scientific Magazines, as seen in the previous chapter, to the Qualification Courses and Events that promote the meeting of scholars, professionals, specialists, students and entrepreneurs in

the sector.

Events are of extreme importance not only to the academic world, but also to the corporate world, because of the benefits they can bring to the market in general and to the development of the academic and scientific environment. These events can be classified as Conferences, Congresses, Courses, Lectures and Seminars, among others.

These meetings are used to absorb knowledge, while bringing together workers in the field, scholars and students from a specific area to discuss matters that



interest them, thus enabling the exchange of experiences and important knowledge. This communication provided by the event is highly effective for the propagation of scientific knowledge, helping in its development and in the creation of new theories and proposals from topics covered.

Scientists and scholars often communicate through written articles and by presenting their thesis and thoughts in conferences through more informal communication. They even seek partnerships with other thinkers who share the same reflection. In addition, they obtain more current information about their fields of study.

The higher level congresses usually bring

to the public great news and updates on recent progress within specific areas, especially the international events that gather scholars from different countries, facilitating communication with a large part of the scientific community.

Thus, the events provided by the associations bring diverse benefits to all sectors related to them. For the industry specifically, the congresses help not only in the dissemination and systematization of new technologies for the area, but also in the projection of goals and guidelines for future actions.



Badge of the 1st
Brazilian Ceramics
Congress



Pennant of the 1st
Brazilian Ceramics
Congress



Brazilian Ceramics Congress



Inaugural session
of the 1st Brazilian
Ceramics Congress

With its first edition held in 1984, the Brazilian Ceramics Congress is considered today the oldest and most important in Brazil and one of the largest in the world. Associação Brasileira de Cerâmica has so far held 61 congresses in several cities in Brazil, the 7th edition being held in Recife and Salvador.



Ferro Enamel cocktail
on the 1st Brazilian
Ceramics Congress



Celite visit at the 1st
Brazilian Ceramics
Congress



The main objective of this event is to promote the interaction of the most distinct sectors that encompass the ceramic environment, such as Industries, Technical Schools, Universities, Research Institutes and Suppliers of Raw Materials, Equipment and Supplies. Based on this relationship, the improvement and development of Brazilian ceramics is sought through novelties and advances boosted by the registration of works to be presented in daily sessions, verbally or in posters. Thus, the CBC has a broad spirit, allowing the discussion of interesting studies to the various known ceramic segments, as well as encouraging studies on Energy, Environment, Sustainability, Mineral Resources, Technological Innovation, Quality, Human Resources and many others.



Hervy's booth at the First South American Congress

Throughout its history, the Congress underwent some modifications and there were some peculiarities along its path. In 1965, the First South American Congress was held to replace CBC. Years later, in 1991, the 3rd Ibero-American Congress of Ceramics, Glasses and Refractories was held in conjunction with the 35th Brazilian Congress of Ceramics. In 2012, in conjunction with the 56th Congress, the 1st Latin American Ceramics Congress and the IX Brazilian Symposium on Glass and Related Materials were held. And, finally, in 2013, the 5th Ibero-American Ceramic Congress took place in partnership with the 57th Congress.



Visit to Cerâmica Martini in the 1st South American Ceramics Congress

Proceedings related
to the 31st Brazilian
Ceramics Congress



The publications generated from the congress are the Annals, which contain a collection of the works presented. They are excellent sources of studies. The CBC is a renowned event, so, exceptional works are always presented in its editions. In order to maintain this level of excellence, the institution counts on the valuable collaboration of the Development Agencies such as: Financiadora de Estudos e Projetos (FINEP), Conselho Nacional de Desenvolvimento Tecnológico (CNPq), Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (Capes) and Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP). This is aimed at the researchers from the state of São Paulo. ABCERAM has always sought to operate in several regions of the country because it is a national institution. Therefore, the Brazilian Congress of Ceramics is itinerant and has a trademark in 13 Brazilian states.

Group of participants
of the 1st Brazilian
Ceramics Congress





CONGRESS	DATE	YEAR	LOCATION
1st	December 12 to 15	1954	São Paulo (SP)
2nd	January 22 to 27	1956	Rio de Janeiro (RJ)
3rd	January 27 to February 01	1957	Curitiba (PR)
4th	January 12 to 18	1958	São Paulo (SP)
5th	January 11 to 17	1959	Rio de Janeiro (RJ)
6th	January 17 to 22	1960	Belo Horizonte (MG)
7th (*)	February 19 to 24	1961	Recife (PE) / Salvador (BA)
8th	February 11 to 17	1962	São Paulo (SP)
9th	July 07 to 13	1963	Porto Alegre (RS)
10th	July 05 to 11	1964	Rio de Janeiro (RJ)
1st South American	September 12 to 15	1965	São Paulo (SP)
11th	February 12 to 19	1967	Curitiba (PR)
12th	February 11 to 17	1968	São Paulo (SP)
13th	February 02 to 08	1969	Belo Horizonte (MG)
14th	February 15 to 21	1970	São Paulo (SP)
15th	February 07 to 11	1971	Rio de Janeiro (RJ)
16th	February 20 to 25	1972	São Paulo (SP)
17th	February 18 to 24	1973	Salvador (BA)
18th	February 10 to 17	1974	São Paulo (SP)
19th	April 13 to 18	1975	Guarapari (ES)
20th	April 04 to 09	1976	Guarujá (SP)
21st	March 27 to April 01	1977	Blumenau (SC)
22nd	April 02 to 07	1978	Rio de Janeiro (RJ)
23rd	March 25 to 28	1979	Salvador (BA)
24th	March 23 to 28	1980	São Bernardo do Campo (SP)
25th	April 05 to 10	1981	Curitiba (PR)
26th	May 30 to June 04	1982	Recife (PE)
27th	June 05 to 10	1983	São Paulo (SP)
28th	April 15 to 18	1984	Contagem (MG)
29th	April 14 to 19	1985	Criciúma (SC)
30th	April 20 to 23	1986	Rio de Janeiro (RJ)

31st	May 17 to 20	1987	Brasília (DF)
32nd	April 24 to 27	1988	Natal (RN)
33rd	May 28 to 31	1989	Serra Negra (SP)
34th	May 20 to 23	1990	Blumenau (SC)
35th	April 20 to 23	1991	Belo Horizonte (MG)
36th	June 07 to 10	1992	Caxambu (MG)
37th	May 22 to 25	1993	Curitiba (PR)
38th	June 18 to 21	1994	Blumenau (SC)
39th	June 10 to 13	1995	Águas de Lindoia (SP)
40th	June 12 to 15	1996	Criciúma (SC)
41st	June 03 to 06	1997	São Paulo (SP)
42nd	June 03 to 06	1998	Poços de Caldas (MG)
43rd	June 02 to 05	1999	Florianópolis (SC)
44th	May 31 to June 04	2000	São Pedro (SP)
45th	May 30 to June 02	2001	Florianópolis (SC)
46th	May 26 to 29	2002	São Paulo (SP)
47th	June 15 to 18	2003	João Pessoa (PB)
48th	June 28 to July 01	2004	Curitiba (PR)
49th	June 06 to 09	2005	São Pedro (SP)
50th	May 22 to 25	2006	Blumenau (SC)
51st	June 03 to 06	2007	Salvador (BA)
52nd	June 08 to 11	2008	Florianópolis (SC)
53rd	June 07 to 10	2009	Guarujá (SP)
54th	May 30 to June 02	2010	Foz do Iguaçu (PR)
55th	May 29 to June 01	2011	Porto de Galinhas (PE)
56th(**)	June 03 to 06	2012	Curitiba (PR)
57th(***)	May 19 to 20	2013	Natal (RN)
58th	May 18 to 21	2014	Bento Gonçalves (RS)
59th	May 17 to 20	2015	Barra dos Coqueiros (SE)
60th	May 15 to 18	2016	Águas de Lindoia (SP)
61st	June 04 to 07	2017	Gramado (RS)

(*) Took place in the cities of Recife-PE and Salvador-BA

(**) Concomitantly with the "1º Congresso Latino-Americano de Cerâmica" and "IX Brazilian Symposium on Glass and Related Materials"

(***) Concomitantly with "5º Congresso Ibero-Americano"

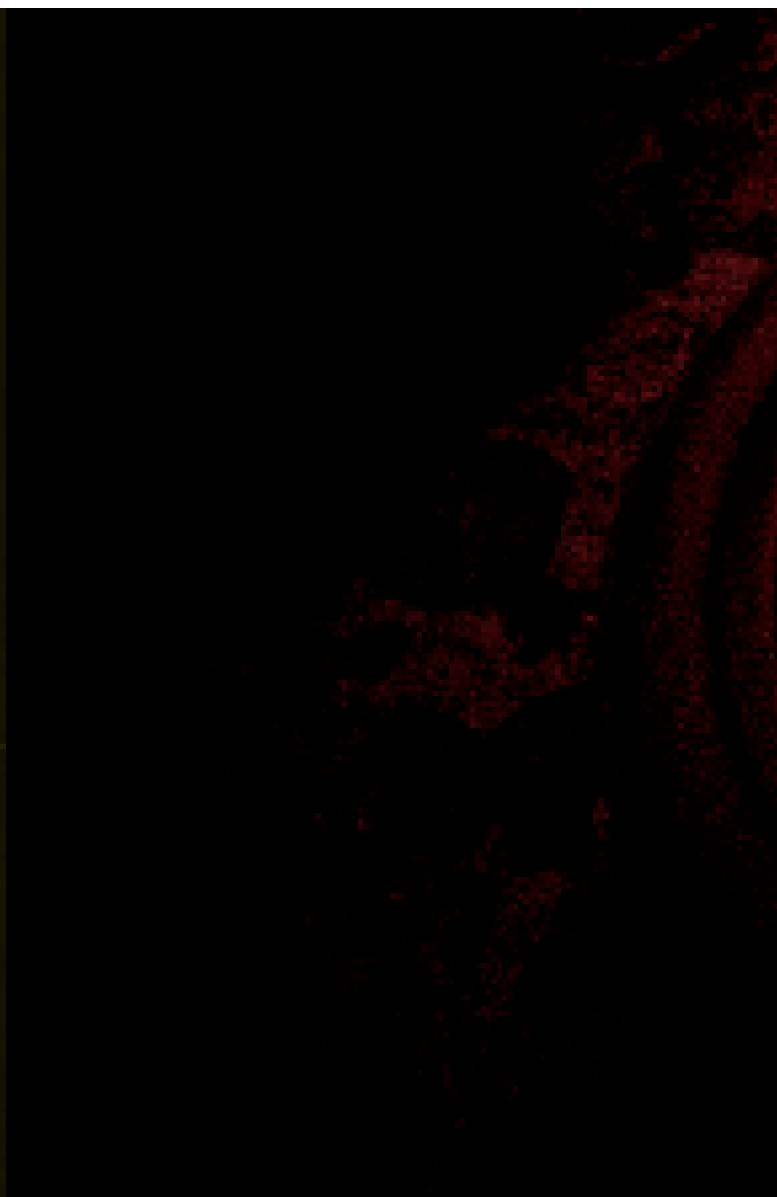


Meeting of miners and refractory users

The Meeting of Miners aims to reunite miners and consumers of the nonmetallic mineral ceramics industry, so that together they can debate about the various problems that affect this sector, since it refers to raw materials essential to the ceramic segment.

The event had 15 editions with excellent repercussion in the sector. Related topics were discussed, from extraction and processing techniques to the quality guarantee and regularity of supply. Topics relevant to the mineral sector, legal concerns, and the environment are also addressed.

EDITION	DATE	YEAR	LOCATION
I	May 22 to 25	1993	Curitiba (PR)
II	June 08 to 21	1994	Blumenau (SC)
III	September 15 to 16	1995	São Paulo (SP)
IV	November 13 to 14	1996	São Paulo (SP)
V	October 30 to 31	1997	Ponta Grossa (PR)
VI	August 12 to 14	1998	Laguna (SC)
VII	August 11 to 13	1999	Rio Claro (SP)
VIII	August 09 to 11	2000	Criciúma (SC)
IX	August 29 to 31	2001	Salvador (BA)
X	August 14 to 16	2002	Rio Claro (SP)
XI	October 21 to 23	2003	Curitiba (PR)
XII	February 12 to 19	2004	Criciúma (SC)
XIII	October 12 to 15	2005	Natal (RN)
XIV	October 15 to 18	2007	Curitiba (PR)
XV	March 11 to 12	2009	São Paulo (SP)



Encontro de refrataristas e usuários de refratários – ERUR

ERUR is a pioneer in the field at national level. The event reunites professionals, researchers and students from the refractory area who, together, discuss the technological innovations of the area and the issues involving the refractory producer and consumer industry.

As it is a unique event, it provides the ceramics industry with a great opportunity to strengthen itself through the interaction of the various members and sectors of the refractory industry production chain. Through its technical and marketing lectures, it gives participants the opportunity to interact with the latest technological findings and the best ways to apply them in the market.

With a history of more than 15 years of activities, the event has 8 consecutive editions. Its first edition took place in Campos do Jordão in the year of 2000 and its objective was to present

an overview of the national refractory industry. The second edition took place in Vitória in the year of 2002 and dealt with issues related to the area of iron ore reduction. The third edition took place in Santa Luzia, Minas Gerais, in 2003, and addressed issues related to steelmaking. The fourth edition occurred in the city of Teresópolis in 2006 with lectures related to refractories and insulators directed to the petroleum and petrochemical industry. The fifth edition, again in Vitória in 2008, had emphasis on iron ore reduction equipment; and the sixth, held in Ouro Preto in 2010, in which the theme was again steelmaking. In 2012, the Curitiba edition had as its theme, refractories for the cement and lime industry. In 2014, in Poços de Caldas, the main theme was refractories for the aluminum industry, and in 2017, took place again in Poços de Caldas, with the theme of raw materials and supplies for the refractory industry.



Technical Glassware Meeting

The Technical Glassware Meeting's mission is to connect professionals related to the glass production and industry, presenting the technological innovations in the sector and creating the opportunity for experts to establish new contacts, fundamental for the development of the field. In this event, numerous professionals participate, such as glassmakers, supplier technicians, scholars, consultants, recyclers and people interested in the environment.

The first edition of the Glassware Technical Meeting promoted by the ABCERAM Glassware Committee took place in 2016. The event took place in two days with lectures and a seminar, whose theme was "Reduction of Costs in the Glass Industry". Due to the great success of that edition, the Glass Committee of ABCERAM scheduled the holding of the 2nd Meeting for 2017.

Technical Committees

The objective of the technical committees is to hold meetings, symposiums and seminars on subjects relevant to the various segments of ceramic performance, as stated in the social objective.

The first committees of ABCERAM were encouraged to create the Permanent Refractory Committee by the Associação Brasileira de Normas Técnicas (ABNT). The Associação Brasileira de Cerâmica convened a meeting of the associates

and all its Board of Directors to discuss this issue, and, on September 9, 1955, decided to create four Technical Committees. Such committees can be created at the request of associates, and be terminated or reactivated through the criteria established by the Board and the interests of the glass industry.

ABCERAM's First Technical Committees

RAW MATERIALS, METHODS AND TESTS, AND APPLICATIONS.

President: Cláudio Walter Bock

REFRACTORY BINDERS REFRACTORIES: FROM SÍLICA, SILICON-ALUMINOUS AND ALUMINOUS REFRACTORY.

President: Henry Robert Ernst Le Duc

REFRACTORY AND REFLECTIVE BINDERS: OF ZIRCONIUM, MAGNESITE, CHROME, CARBON, SPECIAL MATERIALS AND REFRACTORY METALS.

President: Felipe J. V. de A.
Franceschini

FURNACES: NATURAL AND ARTIFICIAL.

President: Fleming A. O. G. Zeemann

ABCERAM and the international community

ABCERAM was born with high prestige and has maintained it to date, as demonstrated in several events over the years. Some events are worth highlighting because of the great contribution they have made to the Association and to the Ceramics Community.

At the International Ceramics Congress held in September 1958 in Wiesbaden, Germany, the West German delegation proposed to join our organization as an effective member of the European Ceramic Federation (one of the most prestigious entities involved in the development of ceramics).

At the beginning of 1959, an invitation made by President S. E. M. Henry J. Reynaud so that the President of Honor of ABCERAM, the illustrious Prof. Mr. Conde Francisco de Salles Vicente de Azevedo, accepted the appointment as Honorary Member of the International Academy of Ceramics, a distinction

rarely granted and solely to those of renowned merit.

Also at the beginning of 1959, at the invitation of the Academia Internacional de Cerâmica and the Belgian government, ABCERAM participated in the international exhibition "L'Art de la Céramique Moderne". From 1976, the Scientific Documentation Service of the Institut de Céramique Française began to publish the abstracts of the articles of the Ceramic Magazine.

In 1979, Dr. Frederico Biscaldi Angeleri, former president of ABCERAM, represented the Association at the 81st Congress of the American Ceramic Society, when Prof. Malcolm G. McLaren of Rutgers University, New Jersey, USA, became chair of the organization.

In 1982, as part of the exchange program between ABCERAM and American Ceramics Society, a delegation of 40 members of this institution participated



in the Brazilian Congress of Ceramics held in Recife, Pernambuco, and in visits to the ceramic industries, research institutes and universities.

In 1983, ABCERAM with a 15-member delegation, coordinated by former President Carlos Roberto Valente da Cruz, made a follow up visit and participated in the 85th Congress of the American Ceramic Society in Chicago. After the congress, a program of visits to the industries, universities and research centers in the cities of Pittsburgh, Corning, Washington and New Jersey was organized.

In the year 2000, the modifications in the Cerâmica Magazine were carried on with the objective of indexing in more international scientific/ technological databases. The Cerâmica Magazine has its abstracts in English published in Ceramics Abstracts, Engineered Materials Abstracts, Chemical

Abstracts, and the full text can be accessed through SciELO (Scientific Electronic Library Online). The Editorial Board of Cerâmica Magazine is composed of foreign experts, besides national researchers of renowned knowledge.

In August 2014, an agreement memorandum was signed, that is, an agreement with the American Ceramic Society. The agreement foresees the organization of joint technical events, the exchange of prominent speakers, the possibility for institutions to associate with each other for a very small monetary value, and the creation of internet pages for the two institutions, with information about both of them.

In 2018, in Foz do Iguaçu, ABCERAM as a member of the International Ceramic Federation (ICF) will promote the 7th International Congress of Ceramics (ICC7). The congress will serve as a



platform that allows the exchange of information on ideas and visions of the future for ceramics and inorganic materials.

Presidents of various institutions, such as Associação Portuguesa de Cerâmica, Sociedad Española de Cerámica y Vidrio and International Ceramic Federation (ICF), as well as dozens of renowned researchers who presented works of various countries, were present at ABCERAM and American Ceramic Society congresses on several occasions.

Several courses taught by foreign experts were promoted by ABCERAM. They greatly contributed to the development in the training of personnel in the area of ceramics. In these 64 years, the Association was awarded several international distinctions, praising its work in ceramics development.

Affiliate

Chapter 04



Associations and their contributions

Affiliate

Associations and
their contributions

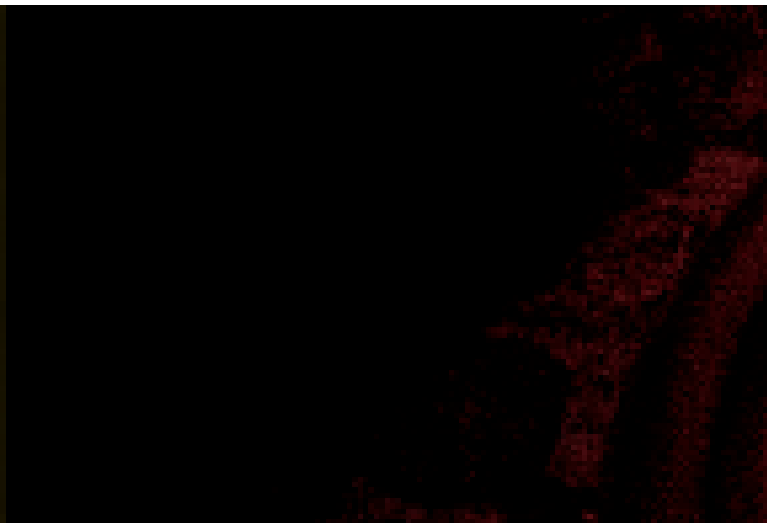


Affiliate Associations and their contributions

Throughout its history, ABCERAM has always counted on its partners and, together, contributed to the development of the market by fostering the dissemination of the specialized knowledge of the sector. The Associate Institutions are essential for such evolution and through the dissemination of information, events and congresses, they can highlight their importance

Opening Session of
the 24th Brazilian
Ceramics





in the eyes of the National Industry. Predominantly technical and scientific, ABCERAM acts whenever possible in all the Ceramics segments, while most of the associate institutions are more segmented, and focus on high quality contribution in several sectors.

The associations have their knowledge and expertise to leverage the market, making it increasingly competitive and empowered, due to their studies, findings, and great commitment to expand their expertise in several

business fields.

These institutions are crucial in the struggle for the recognition of the sector and its professionals, and participate actively in strengthening the industrial segment, relevant to the national economy. This universe comprises national, state and regional institutions. The main national associations that contribute to such development are:



ABIVIDRO

Founded on April 11, 1962, Associação Técnica Brasileira das Indústrias Automáticas de Vidro aims to promote and intensify the use of glass, systematize information from all sectors of the production chain, encourage the technical development of this industrial activity and represent it in everything that is within its interest.

ABIVIDRO reunites the Brazilian glass industries in the markets of civil construction, packaging, automobiles, decoration, furniture, perfumery,

cosmetics, pharmaceuticals, domestic line, technical and special glasses.

In addition, it pioneered the country's first recycling program, in partnership with city halls and trade associations in 25 cities. Currently, it develops several educational and environmental projects with suppliers registered in more than 800 cities in Brazil.



ABCP

Founded in 1936, Associação Brasileira de Cimento Portland was born with the purpose of promoting studies on cement and its applications. The non-profit organization is renowned for nationally and internationally for being a reference in the cement technology. The institution has its expertise to support major Brazilian engineering works.

In addition, ABCP also shares its expertise through partnerships with several universities, schools and

research institutions in the country. It supports cement-based industries, publishes books, magazines and technical documents and helps in the development of Construction.

Seeking a more intense collaboration with the sectors, ABCP currently works with events and partnerships aimed at favoring the offer of competitive products and systems, assembled in two broad areas: Buildings and Infrastructure.

ABIMAQ

Founded in 1975, Associação Brasileira da Indústria de Máquinas e Equipamentos aims at strengthening the National Industry with a view to mobilizing the sector with actions to be taken at political and economic levels, stimulating trade and international cooperation, contributing to the development of its performance in terms of technology, human resources training and management modernization.

ABIMAQ has its activities aimed at generating business opportunities for its associates, operating as a Development Agency for the Brazilian Machinery and Equipment Industry. Currently, the Association represents about 7,800 companies from the most diverse segments, that manufacture mechanical capital goods.

ANFACER

Associação Nacional dos Fabricantes de Cerâmica para Revestimentos, Louças Sanitárias e Congêneres, was founded in 1984, aiming at the national and international representation of the Brazilian Ceramic Industry chain.

Throughout its history, the Association has achieved significant advances in the development of the sector and in the enrichment of its competitiveness. It is worth highlighting that among

its main actions are: the institutional representation in Brazil and abroad; marketing and social communication of the ceramics industry; Expo Revestir Fair and the International Architecture and Construction Forum; sectoral policies and quality and competitiveness programs of; standardization of products and processes, and the sector's tax exemption.

ANICER

Associação Nacional da Indústria Cerâmica was founded on January 20, 1992 in the headquarters of Confederação Nacional da Indústria. ANICER aims to represent the business sector with public and private institutions, fighting for their interests and defending their rights.

Its main focus is the continuous and sustainable growth of structural ceramics, working steadily on several fronts.

Through continuous exchange with national and international technical and scientific institutions, it promotes conventions, services, research and events for potters and their collaborators, providing more news to the sector. In addition, the Association integrates the manufacturers of different regions in the country, favoring the exchange of expertise, and carrying out projects that qualify the sector.



ANFAMEC

Founded on March 22, 2013, the Associação Nacional dos Fabricantes de Máquinas e Equipamentos para Indústria Cerâmica in its first months reunited a large number of pottery suppliers.

At a time of great national development and development of the ceramic industry in the country, the creation

of the Association was crucial to take care specifically of the interests of the machine and equipment manufacturers, allowing new sectoral and extra-sectoral dialogues.

ABM

Founded in 1944, Associação Brasileira de Metalurgia, Materiais e Mineração accompanied the beginning of the Brazilian process of industrialization.

ABM works mainly in the exchange of technical-scientific expertise, seeking the improvement of professionals dedicated to the development of the fields of metallurgy and increasingly modern materials.

The Association has reached its goals and currently has more than 5,000 members. These provide the industries, the academic area and research, totaling more than 100 associate companies, from the mining-metal-mechanic and materials sectors.

Companies, Institutions and Legal Entities registered in the ABCERAM database

Associations in the Ceramics Area = 26	Syndicates in the Ceramics area = 51	Various Associatons and Syndicates = 25	Teaching Institutions = 45	Research and Services Institutions = 15
Manufacturing companies and distributors/ representatives of products and services = 418	Supplying companies for corporations, institutions and the mining industry = 249	Supplying companies for ceramic artists = 15		

Chapter 05

leader



Leaderships that are part of our history

Leaderships that
are part of our
history



Leaderships that are part of our history

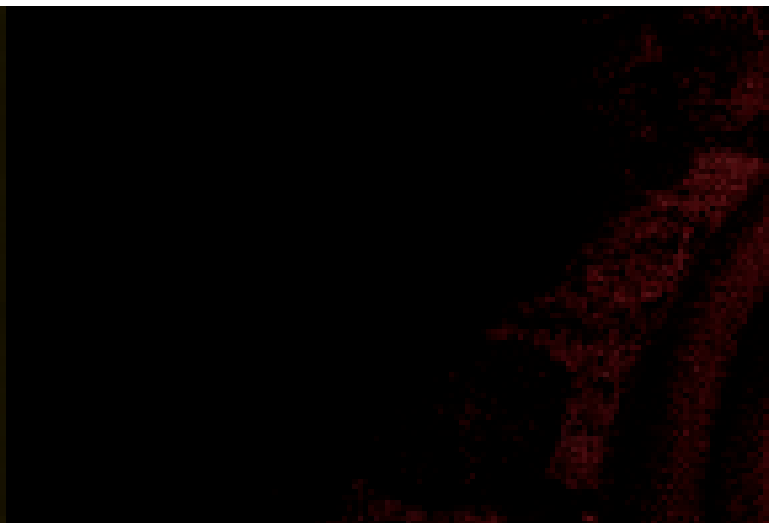
The arrival of globalization in the 1990s highlighted a new context for ceramics in Brazil. Modernization has established a new level of quality in production and, with globalization the Brazilian industry has adapted to the new procedures and programs of world quality regulations, besides understanding the importance from the viewpoint of the consumers. In between the lines, Brazilian companies start to optimize their production processes.

Thus, they have become more capable and conceptualized within the many sectors that have risen Brazil's

economic capacity during the late and early twentieth century. Many factors explain the growing appreciation that industries are beginning to develop for ceramics. The abundance of natural raw material available in Brazil, alternative energy sources and the availability of practical technologies embedded in industrial equipment, have made the Brazilian ceramic industry constantly evolve. Many types of products from the various ceramic segments reached world quality levels with a considerable amount exported.

In addition, the industry gained

prominence for its great diversity of materials classified as inorganic and nonmetallic. These can be equally subdivided into twelve segments, due to the different peculiarities and areas of use of each of these branches.



ABRASIVES	CEMENT
BIOCERAMICS	THERMAL INSULATORS
LIME	SANITARY WARE
HOUSEHOLD CERAMICS AND ALL	REFRACTORY MATERIALS
TECHNICAL CERAMICS	CERAMIC COATINGS
POTTERY	GLASS

Due to the greater demographic density, better infrastructure, better distribution of income, also associated with the facilities of raw materials, energy, research centers, universities and technical schools, the South and Southeast regions have a great concentration of industries of all ceramic segments. The other regions of the country have shown a certain degree of development, mainly in the Northeast, where demand for ceramic materials has increased, especially in the segments related to civil construction, leading to the implantation of new ceramic factories in this region.

The companies of the sector work tirelessly, so that each one within its segment is always able to bring innovations that facilitate and favor

people’s lives. With the help of studies and theories encouraged by associations, these companies are constantly evolving, struggling so that they can increasingly strengthen this sector, by generating countless jobs, changing the life quality of thousands of people, and mainly fostering the growth of the Brazilian economy, which has been changeable for many years. In this chapter are some of the companies responsible for the evolutionary history of the industry. They support and encourage the work of ABCERAM, for its importance and contribution to the ceramic scenario.

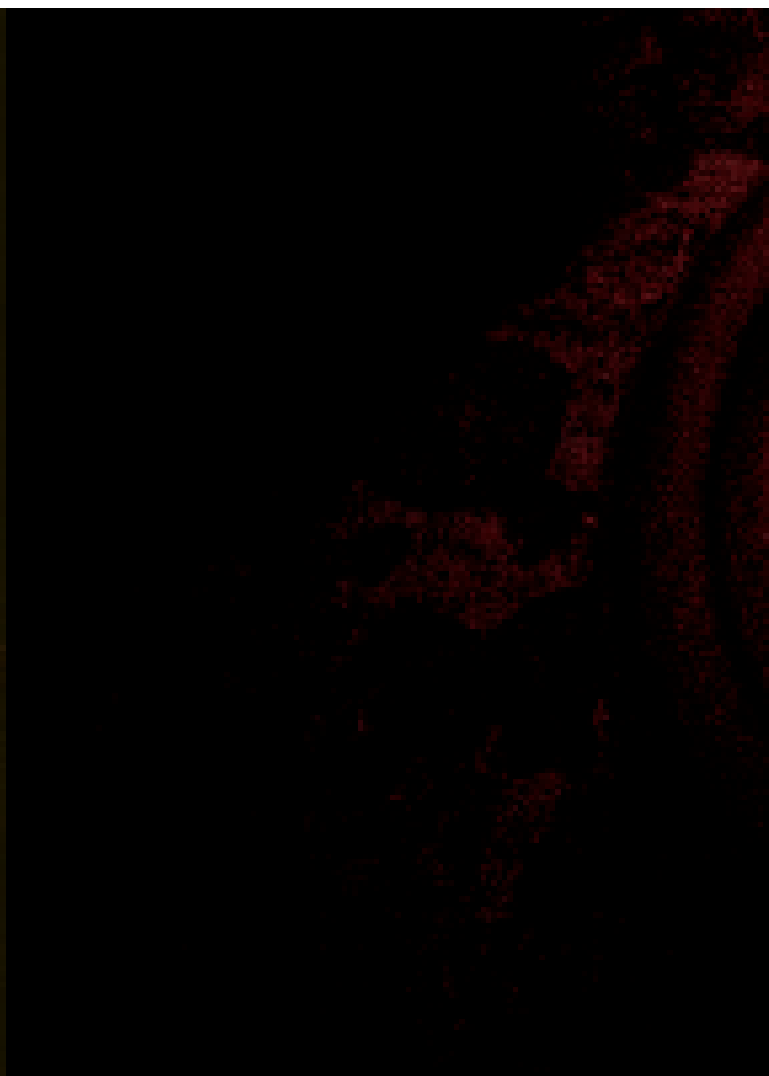


CERÂMICA SCHIMDT

Porcelana Schmidt was founded by the Schmidt family in 1945, in Santa Catarina. In early 1948, they acquired the company Porcelana Real, thus merging the two factories. Continuing its expansion, in 1956, they acquired another factory, Porcelana Steatita, in Campo Largo, PR.

In the 1960s, the company had already become a leader in the national porcelain market and icon of the Mesa Posta sector. By expanding its business segments, the company merged into a single brand, maintaining the name Porcelana Schmidt. Between the 1980s and 1990s, with extended product lines, it solidifies as a leader in the sector, and is acknowledged as a benchmark in quality.

Porcelana Schmidt, with over 70 years of history, currently has two manufacturing units in the South of Brazil and a showroom in São Paulo. It always seeks to offer a wide range of products with the best quality.



CERÂMICA PORTO FERREIRA

In the mid-1920s, a group of entrepreneurs founded a small pottery for the production of tableware in Porto Ferreira, SP. This group included members of the Italian colony, among them, Paschoal Salzano, who would become one of the greatest businessmen responsible for the industrial vocation of that city.

From the start, the small plant has already faced major problems. At the time, Mariano Procópio, a farmer in the municipality, took hold of the company to pursue its goals. Unfortunately, in 1930, the Fábrica de Louças de Porto Ferreira Ltda. had to close down.

It was then that, in 1931, the Portuguese ceramist and engineer Bernardino da Silva Lapa encouraged a São Paulo group to acquire the remnant of the old factory. Thus, Cerâmica Porto Ferreira was created. At first it was a Private Limited Company, and later it turned into a Public Limited Company. It is thus

preserved to date. The President of this new Society was Dr. Djalma Forjaz.

Its first significant growth occurred in 1951, under the superintendence of Engineer Nicolau de Vergueiro Forjaz, who set up Unit 2. Since then, its production was multiplied and developed. This progress led the company to the second growth between 1957 and 1958, with the creation of its Unit 3. The Company's third growth took place in 1970, with the implementation of Unit 4, dedicated to the company's new product, Enameled and Decorated Floors. Currently, Cerâmica Porto Ferreira has 60,000 square meters of built area, and employs more than 400 people amongst workers, technicians and administrators.



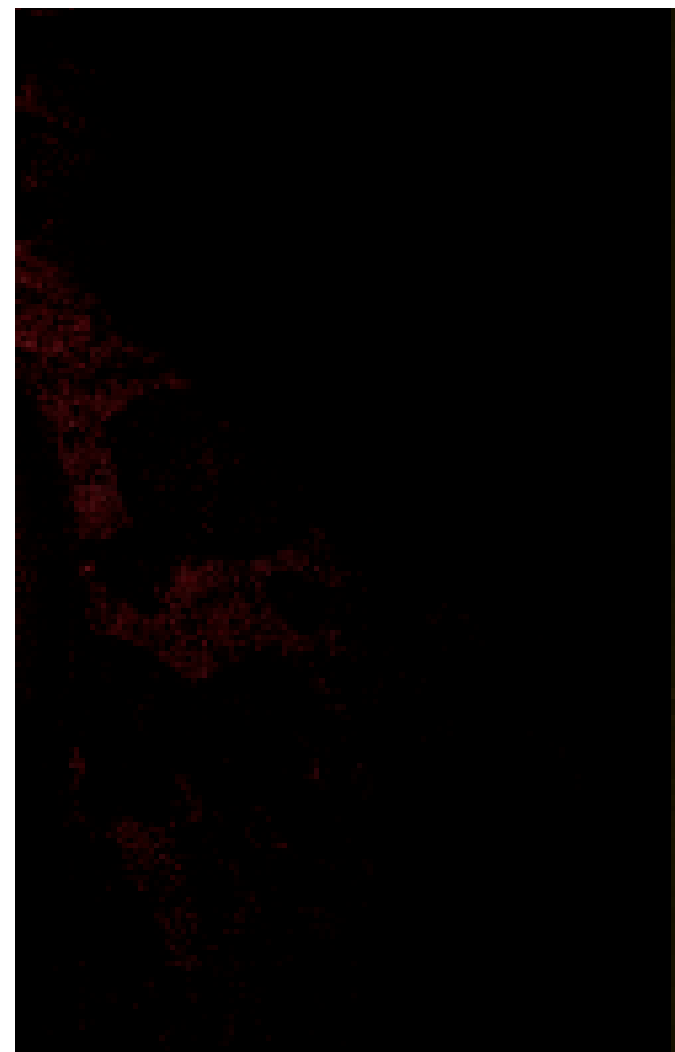
GRUPO CURIMBABA

The Curimbaba Group was founded in 1961, with the creation of the company Mineração Curimbaba in Poços de Caldas, MG, by Benedito Moreira Curimbaba and his son, Sebastião Curimbaba. They began the exploitation and processing of bauxite. Then, Benedito and his son associated with a group of foreign entrepreneurs and founded Elfusa, a company that produces molten oxides and its factory is located in São João da Boa Vista, SP. With the growth of the two companies, the Curimbaba group acquired 75% of the shares of Elfusa and later, in 2000, it acquired its total control.

In 1979, Alcace Transportes was founded, also in Poços de Caldas. In 1980, the Group acquired the company Olga S.A., the national leader in the segment of polishers. Its plant was transferred to Guarulhos. In 1988, Tarumã was founded in Poços de Caldas, to operate in the segment of

forestry and logging. In 2001, Sebastião founded Brita Caldas to provide gravel and ecological sand for the construction industry.

The family organization operates in the industrial and transportation segments. Its main focus is the extraction and mineral processing activities, operating especially in the markets of abrasives, agrochemicals, ceramics, refractory cements, oil clarification, welding flux, friction, casting, chemical grade, surface treatment, micro grains, paving of floors, bracing, refractories and steel. Currently, the Group is composed of six companies in Brazil and its industries are represented in several countries of South America, North America, Europe and Asia.





CERÂMICA TOGNI

In 1910, the Italian immigrant Antonio Togni founded the Togni Pottery, which was later expanded by his sons Eliseo Ângelo Togni and Aníbal Camillo Togni. Following their father's entrepreneurial profile, they began to produce refractories in 1954, thus creating the companies that make up the Togni Group.

Set up in Poços de Caldas, MG, since the beginning of the 20th century, Togni S.A. – Materiais Refratários originally made bricks for civil construction and colonial type curved tiles.

Currently, the Group has highly advanced technologies in its industrial productions. It has two fully integrated plants in Poços de Caldas and a third in Sacramento, in the Triângulo Mineiro. These are strategically supplied by high quality raw materials from reserves and mining companies belonging to the Group.

Togni Ceramics comprises a group of companies that are active in the fields of refractories, specialized mechanics, mining, forestry and ornamental stones. With a large installed capacity of 60,000 tons per year, its refractory line is extensively diversified, serving several segments such as steel, cement and lime, aluminum, ceramics, cellulose and paper, foundries, glass, chemicals and petrochemicals, boilers, and incinerators, among others.



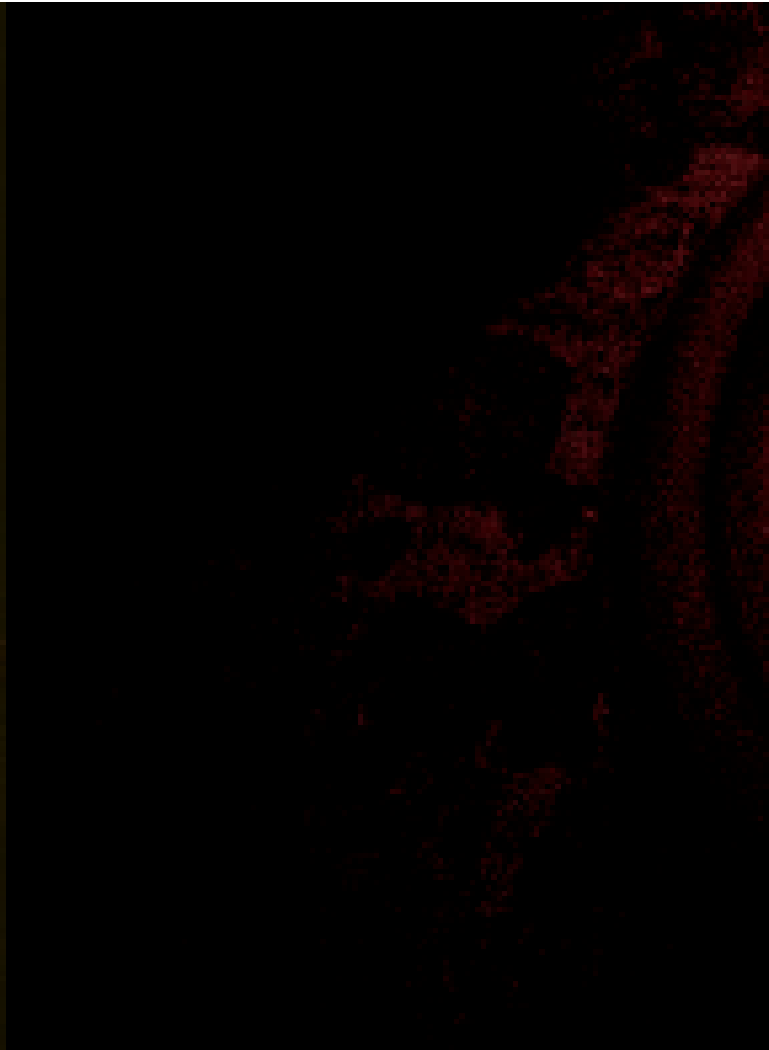
CECRISA

Cecrisa Revestimentos Cerâmicos S.A. was founded in 1966 by entrepreneur Manoel Dilor de Freitas. At first, the company was called Cerâmica Criciúma S.A. The first tiles were produced on April 11, 1971, and ever since, the company has been expanding constantly to reach a prominent position in the national and international market. In 2012, it began a challenging phase with the arrival of the Vinci Partners investment fund to control the company.

Cecrisa produces and sells porcelain tiles and ceramic tiles under the brands Cerâmica Portinari and Cecrisa. Currently, it has five industrial plants in Brazil: two in Criciúma, and three other plants in Tubarão, SC, Santa Luzia, MG, and Anápolis, GO. Its production is

of approximately 23 million square meters per year and its products are exported to more than 50 countries in five continents.

The company incorporates social responsibility into its values, by supporting social, educational and sports activities in the communities.



CÉRAMUS

Céramus was founded in 1919 by engineer Francisco de Salles Vicente de Azevedo, in the traditional neighborhood of Belém, in São Paulo. Francisco de Salles Vicente de Azevedo, in addition to establishing the company, was one of the founders of the Associação Brasileira de Cerâmica and its first president.

Early on, the company began its activities producing tableware using decals from England. In the 50's, it transferred and modernized its facilities to a new plant located in Suzano, for the production of ceramic tiles “ Mosaicos Céramus “. From the 1970s onwards, it began the production of a new, high-strength, rustic ceramic coating called “Old Century”, which was very well accepted in the domestic market, as well as in the USA and Europe. Soon after, in the 80's, the production of the “Old Century” continued, geared towards the market.

Still in the 80's, it began the processing of industrial minerals: Feldspar, Albite, Quartz, Quartzite, Spodumene, Amblygonite, Feldspathic Sand and others. All minerals undergo rigorous quality control through chemical analysis, physical analysis and cinder cones.

With the expansion of its achievements throughout its history, the company currently continues its activities with raw materials processing, service provision, logistics and overall partnerships.

Chapter 06

The advances in the s



sector and the future of associations

The advances
in the sector
and the future of
associations

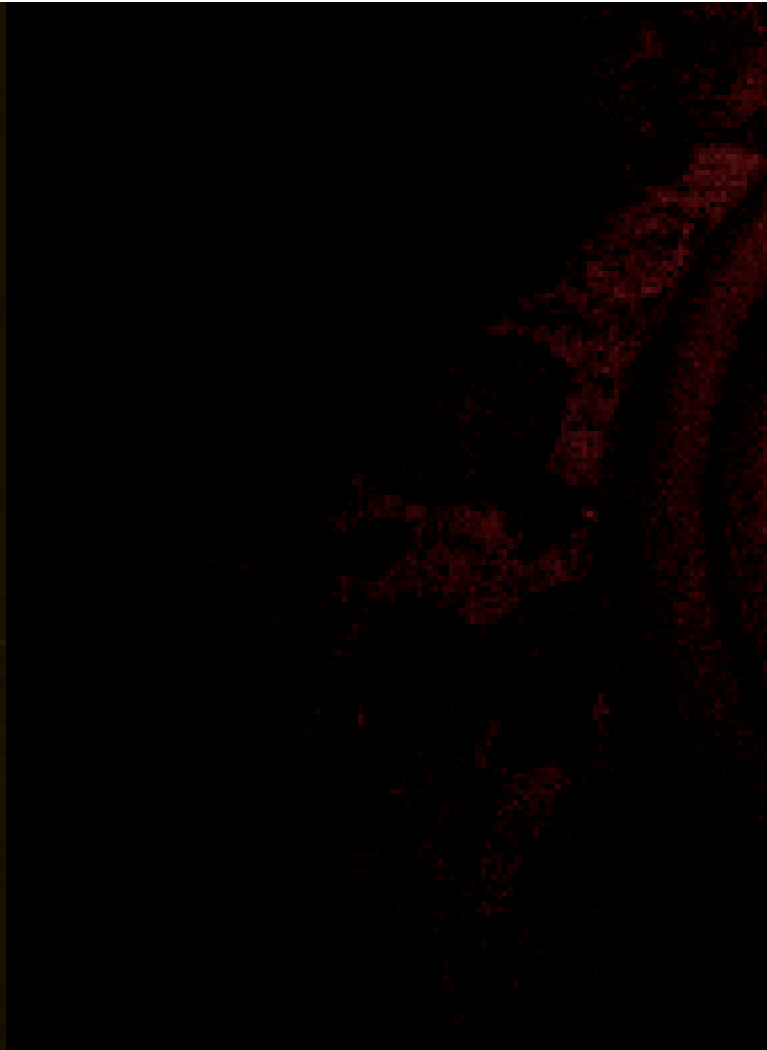


The advances in the sector and the future of associations

Over the centuries, humanity has experienced countless discoveries and inventions that have positively transformed people's lives. These changes had the greatest impact, specifically, from the turn of the nineteenth to the twentieth century, with the development of industries and the creation of new production patterns. Ceramics followed this pace, taking a rapid advance with adjustments to new formats, creations of new designs and new features. Its application has gained templates,

which have disengaged themselves from old projects to obtain more space and thus become an inherent part of large constructions, such as airports, shopping centers, hospitals and hotels, among others.

New production techniques initiated after the end of World War II, generating even higher quality and increasingly affordable prices, reaching all social strata at a steady pace.



National Scenario

During the 1960s, urbanization boosted the sanitary ware industry in Brazil and Brazilian production soared from 2 million pieces per year to more than 20 million pieces. These developments have been noticed in recent decades among all other ceramic segments, which have accompanied the country's economic growth, becoming a significant part of the national GDP, generating thousands of jobs, moving the economy forward and contributing to the modernization of cities.

Nowadays, ceramics are found in thousands of shapes, types of products and in varied applications. It is present in the most diverse segments, from aerospace to electrical processes. Through the dedication and hard work of the ceramists, the sector has evolved significantly, obtaining totally automated factories that have adopted digital technologies very present in the international scene.

The ceramic industrial segments, within their peculiarities, bring different collaborations to the national and international economy, and integrate several sectors of production. In the last decades, they have brought countless contributions, enabling the development of the sector, which, despite the economic crisis faced by the country, still show signs of stability and even growth in some lines of business.





Ceramic jugs

The Brazilian ceramics sector, in general, presents a great deficiency in statistical data and performance indicators, essential tools to follow its development and increase competitiveness, among other factors. Hence, the difficulties of having a more comprehensive panorama of this important industrial area, with several segments that are highly employment generating and with strong social appeal.

Some numbers of the ceramic industry

can be found, generally not updated, in the sites of associations, unions, and also in some publications.

The universe of ceramics is broad, made up of several segments and, despite the peculiarities of each one, presents many points in common as raw materials, processes, human resources and others, and complement each other in several applications.

CERAMICS SEGMENTS¹

Abrasives

Part of the abrasives industry, using raw materials and processes similar to those of ceramics, constitute a ceramic segment. Among the more well-known products, we can mention the electrofused aluminum oxide and the silicon carbide.

Bio-ceramics

In Brazil, this segment is incipient. Only two companies that manufacture dental materials have been identified.

¹ The ceramics segments Lime, Cement and Glass, are not seen as ceramics by many, for their particularities and also for lack of knowledge.



Lime

Lime or calcium oxide is one of the most important substances for the industry. It is obtained by thermal decomposition of limestone (from 825 ° C to 900 ° C). There are two types of lime:

Virgin lime

Virgin lime (also called quicklime) is calcium oxide (CaO), one of the most industrially applied oxides. As we do not find it in nature, it is industrially obtained by pyrolysis (thermal decomposition) of limestone. This type of lime is used in the manufacturing of quenched or hydrated lime, Ca (OH)₂ (calcium hydroxide).

Hydrated Lime

It is calcium hydroxide, Ca (OH)₂. It is obtained from the reaction of quicklime or virgin lime (CaO) with water (Source: ABPC – Associação Brasileira de Produtores de Cal).

Brazilian market – production of 8.2 thousand tons / year. The main applications are: Steel Industries (34%), Civil Construction (31%), Environment (2%), Chemical Industry (8%), Pulp and Paper (6%), Food Industry (4%), Pelletizing Iron Ore (6%), Non Ferrous Metallurgy (2%) and Agriculture and Other Uses (6%).

Production data for 2014 indicate that China continues to dominate world production with a 65.7% share. The rest is spread in more than 20 countries. Production in Brazil corresponds to 2.3% of world production. It is fifth in the ranking of producer countries (Source: ABPC - Associação Brasileira de Produtores de Cal).



Household Ceramics and the like

This segment refers to the whole range of ceramics: oven, utility and decorative ceramic products made from stoneware, earthenware, porcelain and also pottery. It is estimated that there are about 200 industries in this field in Brazil, with the largest concentration in the state of São Paulo and the Southern states. One of the obstacles to this segment is the entry of Chinese products.

Technical ceramics

The technical ceramics segment covers a wide range of products obtained from different raw materials and various processes. The ceramic material is used in different sectors, encompassing the chemical, electro-electronic, thermal, mechanical, and nuclear sectors, among others.

In Brazil, research activities in advanced ceramics are intense. These analysis carried out by approximately 45 groups in universities and research institutes. Despite that, the market for this sector has not grown significantly in recent years.

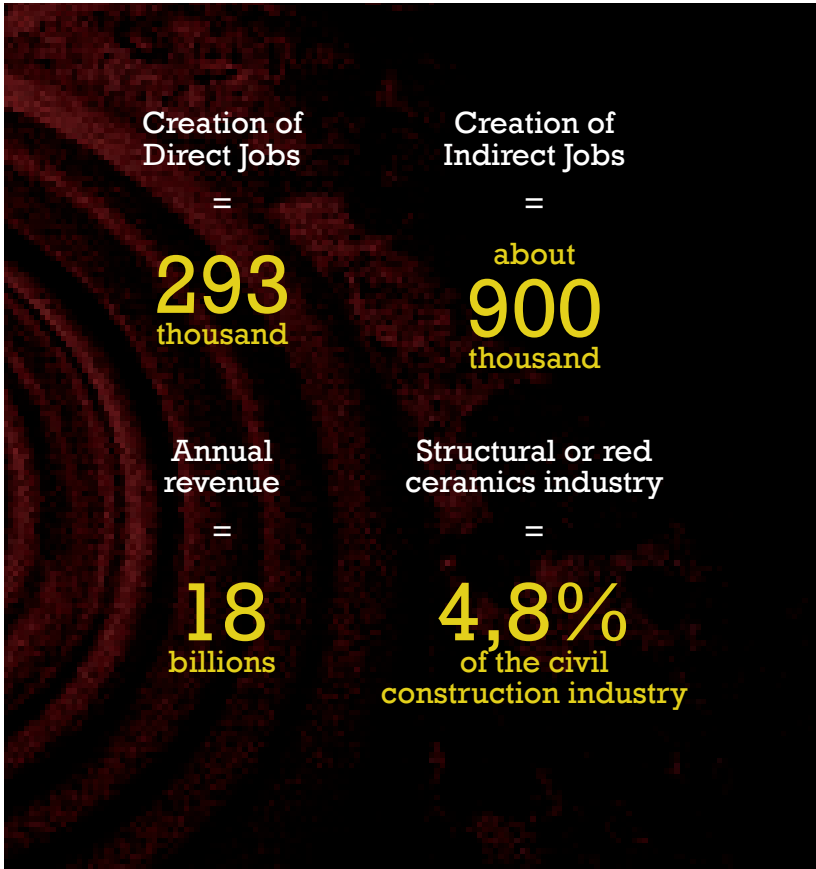
In this segment there are about 25 companies that manufacture products such as: electrical insulators, crucibles, guidewires, mechanical seals, tubes, ceramic knives and others.



Structural or red ceramics

Structural or red ceramics is an expression with broad meaning, including those materials used in civil construction (expanded clay, bricks, blocks, castings, slabs, tiles and ceramic tubes) and some for domestic use and the like. In both cases, the products have predominantly reddish coloring.

The industries of this segment are greatly dispersed. It is estimated that there are approximately 6,903 ceramics and pottery industries scattered throughout Brazil, mostly micro, small and medium sized. They operate at various technological levels. According to data released by ANICER – Associação Nacional da Indústria Cerâmica, the sector presents:



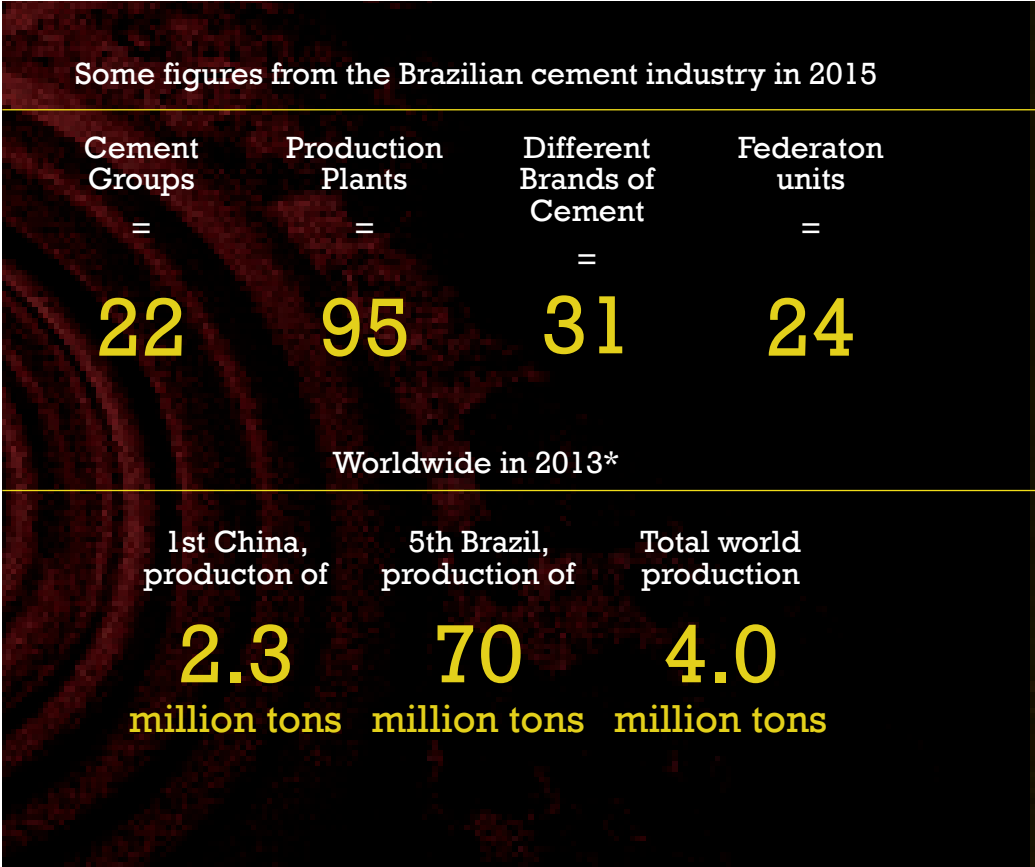
Source: : Cimento.org





Cement

The cement market in Brazil currently comprises 22 cement groups, both domestic and foreign, with 95 production plants spread throughout the Brazilian regions. The country's calculated installed capacity has reached 100 million tons / year, including the plants that are still being constructed. Only last year and till August 2015, even with the market pointing to a drop in consumption, an additional 5 million tons per year were added to the installed capacity of the cement industrial park.



* Figures in million tons.
Source: cimento.org/cimento-no-mundo/

Thermal insulation

This segment considers non-refractory thermal insulators that, depending on their composition, can be used in places with temperatures not higher than 1,100° C and are obtained from raw materials and processes other than refractory thermal insulation.

The so-called wool or ceramic fibers, although several of them tolerate high temperatures, were included in this segment, due to their characteristics and low conductivity.

In Brazil, there are nine companies that manufacture these products.

Sanitary ware

The Brazilian sanitary ware industry is internationally renowned and is one of the largest producers in the world. In Brazil, there are nineteen factories located in the South, Southeast and Northeast regions. Of these, four belong to the Roca group and five to Duratex. The other companies have a manufacturing unit.

Refractory Materials

The refractory materials industry is directly linked to the base one, mainly the metallurgical industry, which consumes a large part of the refractories produced. With the evolution of processes, the amount of refractories needed to produce steel has decreased considerably. Despite this, the demand for the material continued to increase lately, due to the growth of the steel and cement industries.



Ceramic coatings

The Brazilian sector of ceramic tiles is made up of 92 companies, with a greater concentration in the Southeast and South regions and is expanding in the Northeast of the Country. The production segment of national capital is also a great generator of jobs, with approximately 27 thousand direct jobs and around 200 thousand indirect ones, along its productive chain.

A typical feature of Brazilian production is the use of two distinct industrial production processes: Dry Way and Wet Way. Brazilian ceramic tile manufacturers are aligned with the best technology available in the world and in compliance with international quality standards.

Brazil is one of the main players in the world ceramic tile market, ranking the second position in production and consumption. In 2016, 792 million square meters were produced for an installed capacity of 1,048 million square meters.

Total sales reached 800.3 million square meters, of which 706 million square meters were sold in the domestic market and 94.3 million square meters were exported (Source: ANFACER – Associação Nacional dos Fabricantes de Cerâmica para Revestimentos, Louças Sanitárias e Congêneres).





Glass Jars

Glass

The glass industry has great representation within Brazil. The production of flat glass and packaging represents 90% of all production. The other 10% is represented by domestic glass and technical glass. The production of flat glass has accompanied, in the last decades, the growth of the automotive and civil construction industries.



Current overview

Many of the industrial ceramic segments depend mainly on the construction, automotive and steel industry, sectors strongly decelerated by the crisis that the country has faced in recent years. In this sense, several measures have been taken in an attempt to reverse this situation and consequently to rebuild the national ceramic market.

The Brazilian government has taken several measures since 1988 aimed at hindering the import of porcelain, mainly Chinese. ABCERAM had a fundamental participation in the support to the creation of commercial barriers for the import of Chinese white ceramics. According to Antonio Carlos de Camargo, current president of ABCERAM, "The Association issued a letter of support, confirming that China's presence in the national market was ending jobs and weakening the domestic industry." In this way, the federal government sought to encourage domestic production and re-think the domestic industries.

With the progressive decline of the domestic market, the Agência

Brasileira de Promoções e Exportações e Investimentos (Apex-Brasil), in partnership with the Associação Nacional dos Fabricantes de Cerâmica para Revestimentos, Louças Sanitárias e Congêneres (ANFACER), developed the Ceramics of Brazil project, focusing on the export of domestic products. In 2016, the two institutions signed the protocol to give continuity to the project created 15 years ago. Their expectation was to continue to leverage the exports of the companies that are members of the project. The results obtained have always proved the efficiency of the initiative. Nevertheless, domestic market numbers are still worrying: in 2015, when the impact of the crisis was lower, the sector had a general retraction of 2%, while it expected to grow 1.5%, according to ANFACER.

Despite all the problems undergone, Brazil is one of the greatest ceramics markets in the world. It is second in the world ranking of production and consumption of ceramic coating, and seventh in the world export scale with businesses in over 110 countries in all continents.

In order to keep these figures and boost the internal market again, the industry must continue to diversify its production by investing in new product formats to generate new appeals. Unfortunately, in Brazil there is a divergence between the relevance of the ceramics industry and the scarce initiatives dedicated to the ceramics technology. Thus, it highlights the importance that ought to be given to the technical-scientific associations.

Undoubtedly, the economic crisis affects associations such as ABCERAM that depend on the support of companies and associates to keep on carrying out with notoriety its role in society. However, at present, they are extremely necessary to leverage the industry and produce results. Through these associations, it is possible to find tools that help overcome this difficult period through studies, lectures, congresses, courses, classes, articles and books. The collection provided by the institutions contributes to the updating and development of the professionals of the ceramics industry who are in search of new solutions and options



that contribute to the resumption of the sector. Preparing for an uncertain future by creating innovative solutions before the market even shows signs of warming, is the best way to overcome the crisis.

Regardless of this difficult period, the importance of the association is undeniable. Part of the technical development of the ceramics industry is attributed to ABCERAM, a pioneer institution in the ceramic sector which, over time, has won countless resources that have made it internationally renowned. Proof of this, is the recognition of important companies and associations of the sector that support and invest in projects promoted by ABCERAM. As long as one believes that scientific development, intellectuality and professional development lead to the progress of society, institutions will continue to follow a promising path.

ABCERAM dan

Chapter 07



and the importance of its leadership

ABCERAM and the
importance of its
leadership



ABCERAM and the importance of its leadership

The seriousness and development of an Association greatly depend on the commitment of its associates, directors and presidents. Throughout its history, ABCERAM has counted on the commitment of professionals and scholars in the field who take the time to transform the Association into a renowned and internationally known institution. Its presidents have worked hard to promote initiatives that have brought great benefits not only to the

Association, but also to its associates and the ceramic community. Beginning with the conferences that represent the ceramic area in a unique way, the magazines that contain information and studies of the highest quality, to the Qualification Courses that develop the professionals of this field, it generates jobs and enables the growth of a highly competitive and qualified market.

Presidents of ABCERAM

1953/1954 // Francisco de Salles Vicente de Azevedo
1955 // Fernando Arcuri Jr.
1956 // Francisco de S. Vicente de Azevedo
1957 // Fernando Arcuri Jr.
1958 // Arthur L. Schmidt
1959 // Fernando Arcuri Jr.
1960 // Adolpho Posnick
1961 // Frederico Biscaldi Angeleri
1962 // Fernando Arcuri Jr.
1963 // Antônio Ermírio de Moraes
1964 // Nicolau de Vergueiro Forjaz
1965 // Gunter Hermann
1966 // Antônio Ermírio de Moraes
1967 // Albert L. Gerard
1968 // Felipe J. V. de Azevedo Francischini
1969 // Antônio Ermírio de Moraes
1970 // Fernando Arcuri Jr.
1971 // Marcelo Ruy Vicente de Azevedo
1972 // João F. G. Molina
1973 // Geraldo Agosti

1974 // Pêrsio de Sousa Santos
1975 // Luciano Barzaghi
1976 // Carlos Roberto Valente da Cruz
1977 // Luiz Paulo Camargo Ferrão
1978 // Paschoal Giardullo
1979 // Carlos Roberto Valente da Cruz
1980 // Walter Ferreira
1981 // Pêrsio de Sousa Santos
1982 // Carlos Albano Bonfanti
1983 // Walter Ferreira
1984 // Anibal Camillo Togni
1985 // Otair Becker
1986 // Geraldo Agosti
1987 // Mário Rosado
1988 // Tercílio Pozzani
1989 // Alexandre Romildo Zandonadi
1990 // Gabriel W. K. Paiva Côrtes
1991 // José Carlos Bressiani
1992 // Egon Antonio Torres Berg
1993 // Geraldo Agosti
1994 // Marco Antonio Pacheco Jordão

1995 // Gladstone Motta Bustamante
1996* // Gladstone Motta Bustamante
1998 // José Carlos Bressiani
2000 // Urames Pires dos Santos
2002 // Egon Antonio Torres Berg
2004 // Urames Pires dos Santos
2006 // José Lepri Neto
2008 // Luis Leonardo H. C. Ferreira
2010 // Egon Antonio Torres Berg
2012 // Samuel Marcio Toffoli
2014 // Samuel Marcio Toffoli
2016** // Antonio Carlos de Camargo

* As of 1996, the Board of Directors' term of office is two years.

** The term of office expires in July, 2018



ABCERAM Board of Directors 2016-2018

PRESIDENT

-

**ANTONIO CARLOS DE
CAMARGO**

Instituto de Pesquisas
Tecnológicas do Estado de
São Paulo S.A.

VICE-PRESIDENT

-

**EDMILSON RICELLI
DOS PASSOS**

Elfusa Geral de Eletrofusão
Ltda.

FINANCIAL ADMINISTRATIVE DIRECTOR

-

JULIANA MARCHI

Universidade Federal
do ABC

PUBLISHING DIRECTOR

-

**FERNANDO DOS
SANTOS ORTEGA**

Centro Universitário da FEI

DIRECTOR OF TECHNICAL COMITEES

-

**ULISSES SOARES DO
PRADO**

LINING Representação,
Consultoria e Projetos Ltda.

DIRECTOR OF SPECIAL AFFAIRS

-

**EDGAR DUTRA
ZANOTTO**

Universidade Federal de
São Carlos

DIRECTOR OF BUSINESS AFFAIRS

-

MAURO AKERMAN

Akerman Desenvolvimento
Profissional Ltda.

DIRECTOR OF COMMUNICATIONS

-

**VALQUIRIA DE
FÁTIMA JUSTO**

Escola Politécnica da
Universidade de São
Paulo Ltda.

DIRECTOR OF EVENTS

-

**SAMUEL MARCIO
TOFFOLI**

Escola Politécnica da
Universidade de São
Paulo

Presidents' testimony

ANÍBAL CAMILLO TOGNI

President in 1984

The history of Associação Brasileira de Cerâmica has a certain affinity with our history; with the history of our transition from manufacturers of ceramic products to civil construction, to the refractory industry.

Togni S.A. Materiais Refratários is a family business, which after the death of its founder, Antonio Togni, is run by his heirs. Between the years of 1945 and 1948, through agreements amongst his relatives, the company now belongs to Eliseu and Aníbal Togni. From the above-mentioned period until 1953, the company has evolved, surpassing the market needs of the local civil construction products.

In order to continue our ambitious evolution, we had to create new lines of business with nobler products, that could add freight value over long distances. Considering the characteristics of the raw materials of the Poços de Caldas plateau, we chose refractory materials. Eliseu, my brother and partner, had completed a chemistry course and complained that there were no

publications or magazines to guide potters at the time.

Through the guidance of friends and some technicians, we started attending the IPT – Instituto de Pesquisas Tecnológicas de São Paulo (Technological Research Institute of São Paulo), which at that time was based at Coronel Fernando Prestes Square, 110, near the Polytechnic School of the University of São Paulo - USP, where we began to study our raw materials. At IPT, several contacts were made, and we got to know: Dr. Fernando Arcuri Junior and Dr. Antônio Ermírio de Moraes. Both were organizing the first ABC – Associação Brasileira de Cerâmica congress.

We were invited to join it as ABC members. Dr. Antônio's consultant was Dr. Arcuri, since he was the owner and president of IBAR – Indústria Brasileira de Artigos Refratários. We accepted the invitation to register at the congress and there we put forward our intentions regarding the possibility of producing refractory materials.

Our work, already partially developed for production, impressed Dr. Antonio Ermírio,



who, when commenting on it with Dr. Arcuri, showed his patriotism by saying: “You see Arcuri; pure investment with Brazilian capital.”

In the above- mentioned congress, we had the opportunity to visit, with the group, Cerâmica São Caetano and IBAR. At the time, we were already familiar with Teodoro Magnani’s Refratários Modelo, Manoel Fernando Garcia’s Refratários Brasil, João de Augustinis’s Refratários Aremina, AP Green do Brasil with a plant in São José dos Campos and another one in Rio de Janeiro, run by the Danish Dr. Tucson.

In 1983, under Carlos Albano Bonfanti’s administration as president, ABC provided the opportunity for its members to participate in the American Ceramic Society congress in Chicago, USA. On that occasion, we were able to visit the laboratories of ASTM - American Ceramic for Testing Material, the Plibrico plants, where we were attended by Robert Fisher, and where non-formed refractory materials and special monolithic pieces were produced. We also visited Corning Glass, where we saw

the production of optical fibers and catalytic filters for vehicles.

The congress gave the opportunity to establish contact with distinguished professors such as Malcolm McLaren and Willian H. Bauer, who have always shown real sympathy for ABC. My enthusiasm was noticeable enough for Bonfante to invite me to preside over ABC in the next term of office in 1984. Despite all this good relationship, the one that best leveraged our transformation work was Associação Brasileira de Cerâmica, with its courses, meetings and congresses. I hereby extend to ABC our most sincere recognition.

MARCO A. PACHECO JORDÃO

President in 1994

The fact that Associação Brasileira de Cerâmica - ABCERAM has remained active since its foundation, on September 9, 1953 until today, deserves a celebration and acknowledgement to all those who dedicated their time to it. This is due to the merit of its activities, recognized by the ceramist community, which understands the importance of an institution with the characteristics of ABCERAM, for the promotion and development of Brazilian ceramics. As the most striking activities, are the Brazilian Ceramic Congress (since 1954) and Cerâmica Magazine (since 1955), both responsible for the dissemination of excellent work in the field of raw materials, carried out by the ceramic sector of Instituto de Pesquisas Tecnológicas (Technological Research Institute), and the collaboration of some industries, which allowed, at the start of the implementation of these two activities, innovations in several ceramic segments, especially in the "Sanitary Ware".

A series of transformations and

crisis that the world has faced, especially since the mid-1970s, such as the oil crisis, technological evolution, globalization, corporate professionalization, acquisitions and mergers of companies, (some of which have affected the institution), resulted in a drastic reduction of its memberships, which consequently created difficulty in its maintenance. Thanks to the success of its events - Courses, Congress, Meeting of Refractory Producers and Users, Technical Glassware Meeting and partnerships with third parties -, the financial problem has been overcome.

It is worth mentioning the institutional support given to the events of third parties, and the assistance to associates and other national and international institutions.

Two major challenges for ABCERAM are: to overcome financial difficulties and promote events, with a view to collaborating to a greater interaction between Companies and Institutions of Education and Research.



URAMES PIRES DOS SANTOS

President in 2000 and 2004

Since its foundation in 1953 by a group of São Paulo businessmen, ABCERAM - Associação Brasileira de Cerâmica, has been playing its role in integrating the Brazilian ceramic industry, by promoting and defending it in the scientific, technological, artistic, didactic and cultural areas. Its relationship with universities, technical schools and research institutions, has become permanent. In these 64 years of intense work in support of the Brazilian ceramic industry, it closely followed the development of its structure, participating in the high quality of coating materials and refractories, and glass and technical ceramics.

Its congresses, symposiums, courses

and mainly its scientific and technical publications, undoubtedly contribute to the growth of a new generation.

As a ceramist for over 50 years, I am honored to have been its president in two administrations (2000-2002 and 2004-2006), thus updating my knowledge and maintaining a friendly relationship with academics.

**LUIS LEONARDO H. CURIMBABA
FERREIRA**

President in 2008

My first contact with ABCERAM took place long ago, in 1991, at the 35th Brazilian Congress of Ceramics in Belo Horizonte. At that time, I became a partner and never stopped contributing to this institution. The impact that Associação Brasileira de Cerâmica had on my professional training was remarkable. I was fascinated by the technical level of their congresses and events; its publications have helped my academic background in a profound way. I firmly believe that Associação Brasileira de Cerâmica had an impact on the training of several professionals, in Brazil and even abroad, including myself. Its technical-scientific nature and its seriousness in the conduction of the works are extraordinary and fundamental for the development of

our society. I have always sought to contribute to this institution and, over the years, have become a director, chief executive officer and chairman of the Board. We attained outstanding achievements, such as the creation of the ERUR (Meeting of Producers and Users of Refractories) and the 7th International Ceramic Congress (ICC). This book covers part of our story and I hope you enjoy it.



PASCHOAL GIARDULLO

President in 1978

Associação Brasileira de Cerâmica had and still has an important role in the development of all fields of Brazilian ceramics. When I joined in 1978, the headquarters were next to the Polytechnic School, where today is FEI, in a building that was donated by Dr. Antônio Ermírio de Moraes. With the relocation of the Polytechnic School to Cidade Universitária and its transfer to the FEI building, ABCERAM moved to a townhouse in Vila Mariana. Francisco Brennand donated a ceramic plaque made by him, named after the Association. It remained on the facade of the building until we moved to the IPT.

I occupied all management positions and, in 1978, during the XXII Brazilian Congress of Ceramics, held in Rio de Janeiro, I took office as president of ABCERAM. During my administration, ABCERAM celebrated its 25th anniversary and the ceremony took place with a solemn dinner at Buffet Torres, for about 200 guests, mainly our associates, in addition to Dr. Antônio Ermírio de Moraes, Dr. Benedito Fonseca Moreira - president

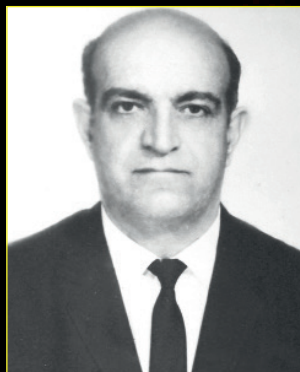
of Cacex, Dr. Lucio Teixeira de Almeida - regional manager of Cacex in São Paulo, Dr. Maria Helena P. Teixeira Mendes - regional director of DNPM, and representatives of Banco Nacional de Habitação and Conselho Nacional de Petróleo.

I held the XXIII Brazilian Ceramic Congress in Salvador, Bahia, which culminated with the inauguration of Cerâmica Poty - at that time the most modern brick-making ceramics. Also during this Congress, we launched the 1st Brazilian Ceramic Yearbook, thanks to the work of Dr. Walter Ferreira.

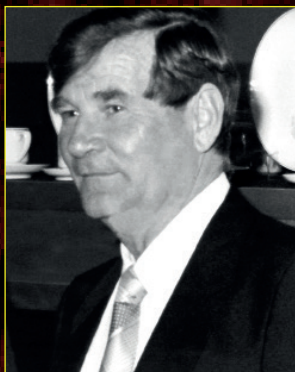
I continued in the Association and participated for 10 years in the Technical Committee on Industrial Minerals and our work was very productive. Then I went to the Ceramic Arts Committee, which I always honored, and today I also hold, together with ABCERAM, the Congresso Nacional de Técnicas para as Artes do Fogo - CONTAF.



Francisco de Salles
Vicente de Azevedo



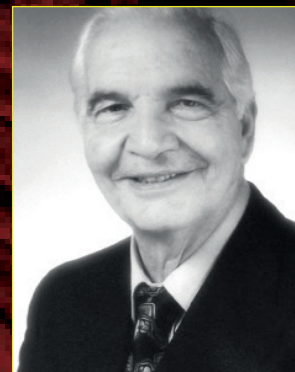
Fernando Arcuri Jr.



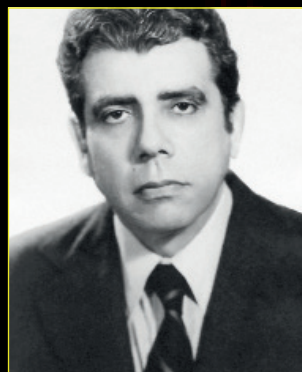
Arthur L. Schmidt



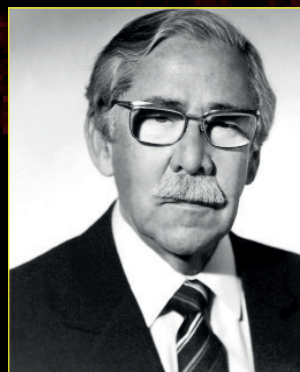
Adolpho Posnick



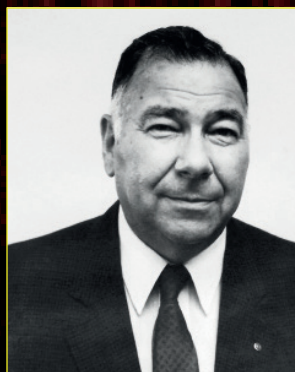
Frederico Biscaldi
Angeleri



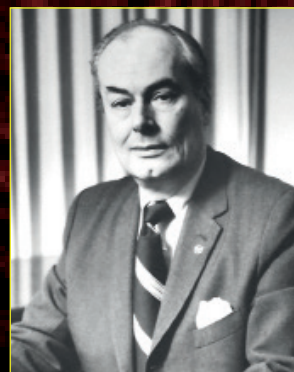
Antônio Ermírio de
Moraes



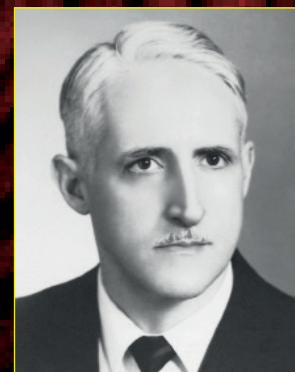
Nicolau de Vergueiro
Forjaz



Gunter Hermann



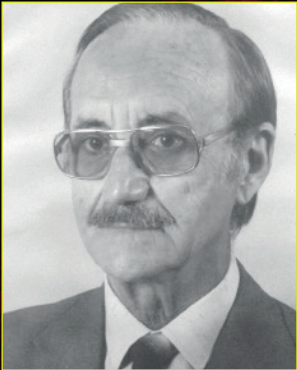
Albert L. Gerard



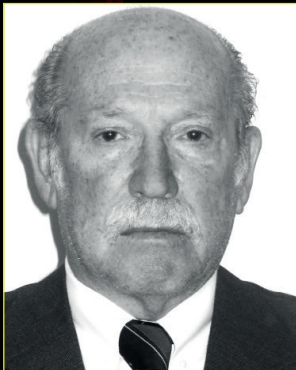
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de Azevedo
Francischini



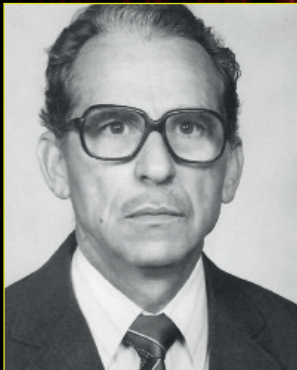
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de Azevedo



João F. G. Molina



Paschoal Giardullo



Walter Ferreira



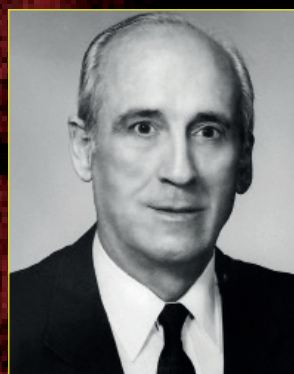
Geraldo Agosti



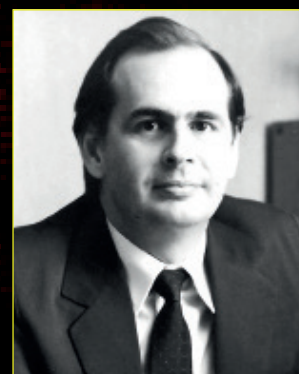
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Santos



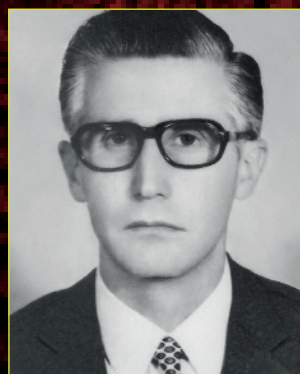
Luciano Barzaghi



Carlos Roberto
Valente da Cruz



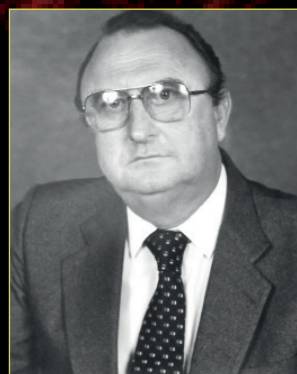
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Ferrão



Carlos Albano
Bonfanti



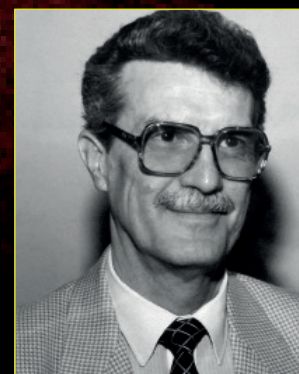
Anibal Camillo Togni



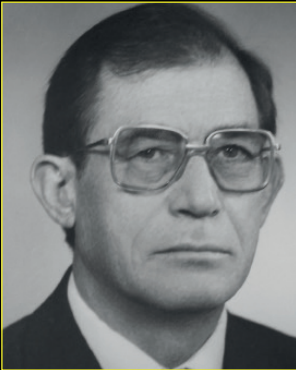
Otair Becker



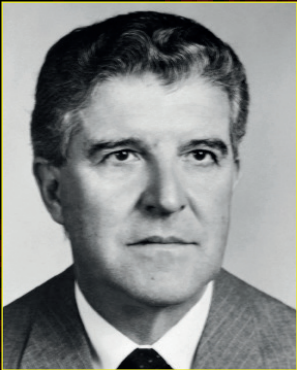
Mário Rosado



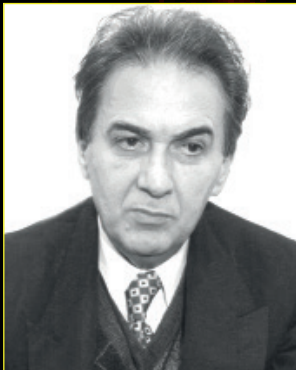
Tercílio Pozzani



Alexandre Romildo
Zandonadi



Gabriel W. K. Paiva
Côrtes



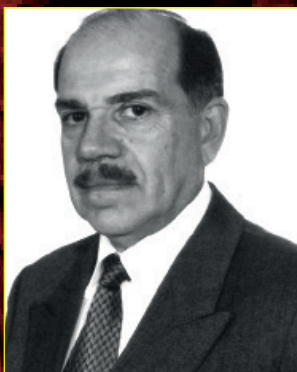
Gladstone Motta
Bustamante



Urames Pires dos
Santos



José Carlos Bressiani



Egon Antonio Torres
Berg



Marco Antonio
Pacheco Jordão



Antonio Carlos de
Camargo



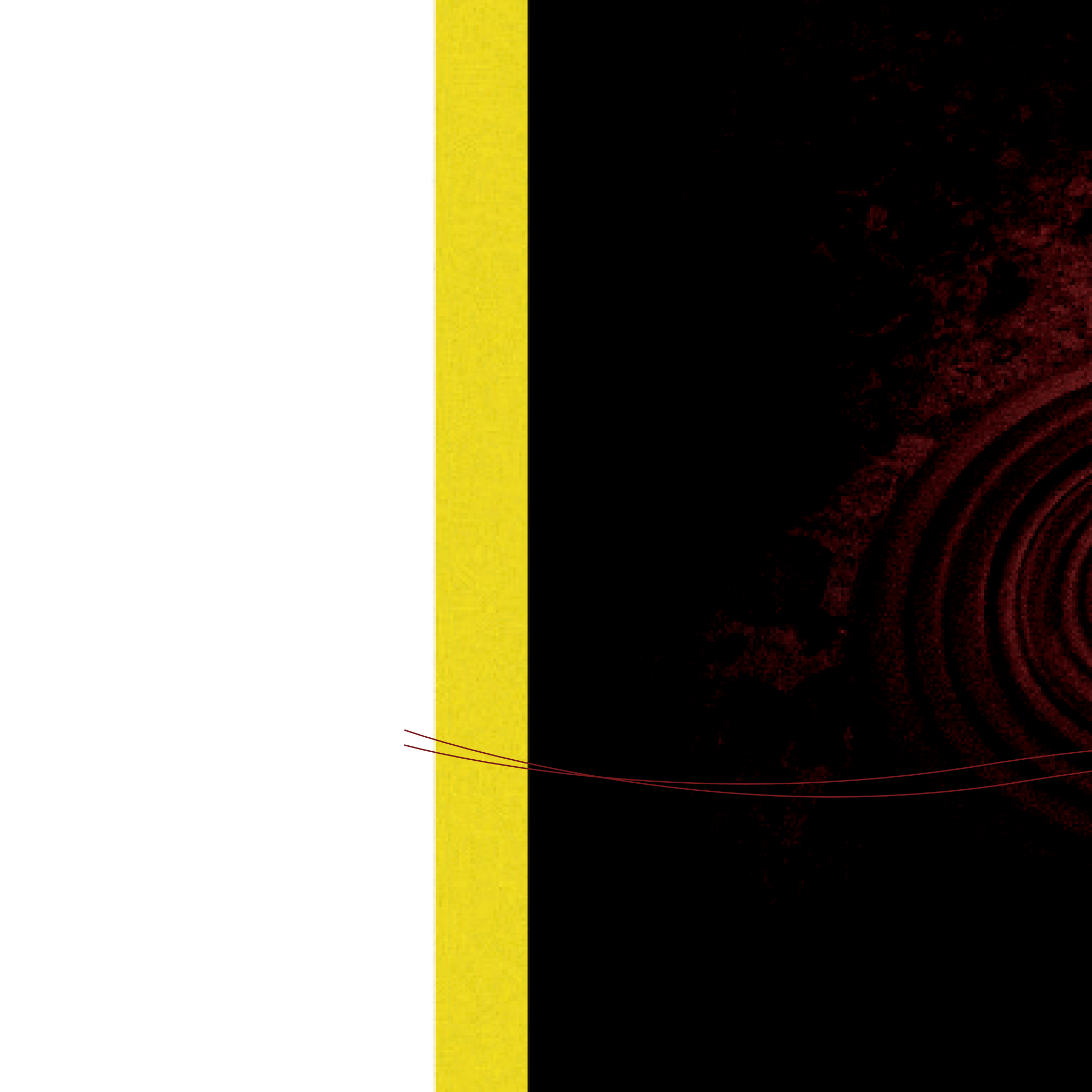
José Lepri Neto



Luis Leonardo H.
Curimbaba Ferreira



Samuel Marcio
Toffoli





Technical files

Technical files



BOARD

João Leal Eulálio
Director/President

HISTORY

Armil Mineração do Nordeste Ltda. started its installation project in September 1996 and its production activity in January 2000, with the objective of setting up, in the countryside in the Northeast, a plant for the processing of non-metallic industrial minerals used in the ceramics segment of floors, porcelain, sanitary ware, tableware, paints, rubber load, abrasives, animal supplement, varnishes, refractories, glasses, among others. Located in the municipality of Parelhas-RN, Armil Mineração is in the center of the pegmatitic province of Borborema, source of the main raw materials of this industrial segment.

Armil Mineração is in the process of implementing the ISO 9001 and 14001 certifications and seeking to expand its services to the ceramic industry through events promoted by its President, Dr. João Leal. With 30 years of experience in the segment, the company has invested in technologies that optimize the production process, as well as the chemical and physical laboratories that enable a constant development in the qualification of the products offered, and the development of porcelain tile masses in partnership with some clients.

MISSION STATEMENT

To offer to the national and international ceramic market, solutions in non-metallic industrial minerals of high quality.

PRODUCTS

Clay, Albite, Calcite, Kaolin, Dolomite, Feldspar, Phyllite and Talc, Quartz, among others.

+55 (84) 3471-3021
armil@armil.com.br
www.armil.com.br



BOARD

Jaime Splettstoser

Commercial and Technical Director

Luís Leonardo H. C. Ferreira

Director of Operations

BOARD

Founded in 1961 in the city of São João da Boa Vista, SP, Elfusa is today the largest company in the Southern Hemisphere in the production of electro-molten oxides. Since 1976, the company is part of the Curimbaba Group, operating in the refractory, ceramic and abrasive segments, through a wide range of aluminum oxides, mullites, electro-molten cements, among others. It has an expressive international performance, an experienced and qualified team, and commitment to society and the environment.

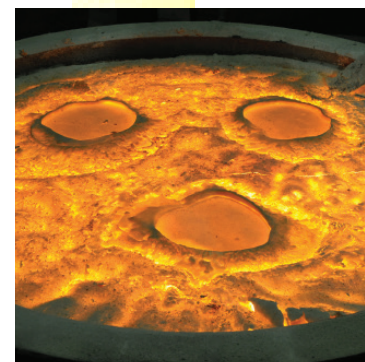
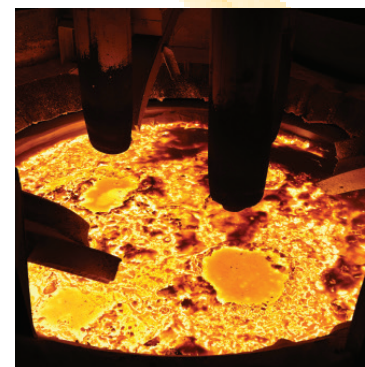
MISSION STATEMENT

To provide industrial minerals and high quality services with the sustainable use of the Curimbaba Group's mineral reserves in order to guarantee the continuous and long-term supply to its customers.

PRODUCTS

Brown aluminum oxide, white aluminum oxide, semi-friable aluminum oxide, electro-molten mullite, calcium aluminate cement and electro-molten spinel.

+55 (19) 3634-2300
www.elfusa.com.br





BOARD

Paulino Nivoloni
President

Mario Nivoloni
Director

Pascoal Nivoloni
Director

HISTORY

Constituted over 60 years ago, the Nivoloni Group began its activities with small brick plants, made in a traditional way, called pottery.

Oriented to the construction market, the group now has 4 ceramic industries, equipped with modern manufacturing parks and state-of-the-art furnaces. It maintains, on behalf of its subsidiaries, a fully integrated process, which covers everything from eucalyptus planting, clay extraction, manufacturing of ceramic blocks and expanded clay.

MISSION STATEMENT

To perform in a lucrative and sustainable way, focusing on product innovation.

PRODUCTS

- Ceramic building blocks
- Structural ceramic blocks
- Tiles
- Channels
- Expanded Clay

+55 (19) 3886-7789
www.gruponivoloni.com.br





BOARD

Paulo Macéa

Technical Director

Patricia Silveira

Administrative Director

Caio Macéa

Commercial Director

HISTORY

Cerâmica Macéa was founded in 1983, to provide advanced ceramic solutions for the Textile industry. Its founder was Paulo Macéa, professional with training in ceramics and vast experience in large companies in the sector. In 1990, Macéa expanded its range of products to serve sectors such as: automotive, aerospace, chemical, steel, petrochemical, food and electronics. The main materials are: Alumina, Zirconium, Silicon Carbide, Silicon Nitride, Titania, ZTA and Sapphire.

MISSION STATEMENT

To be effective in developing solutions, ensuring customer satisfaction, offering differentiated products and services.

PRODUCTS

- Wire guides
- Spheres
- Mechanical Seals
- Ignitors
- Refractories
- Substrates
- Bearings and Ceramic Knives

+55 (11) 2063-0660
www.macea.com.br





Paschoal Giardullo Massas EPP



BOARD

Paschoal Giardullo

Owner



HISTORY

Founded on October 30, 1989, its purpose is to produce special ceramic mass for artists and small industries, in addition to selling quality raw materials for mass and enamels. We launched a newspaper that became a magazine named A Mão na Massa, especially for this market. We also annually hold the Congresso Nacional de Técnicas para as Artes do Fogo - (CONTAF).

MISSION STATEMENT

To supply the market with artistic ceramics, mass, raw materials and techniques for the production of high quality works.

PRODUCTS

Ceramic Masses in the colors: Cream - Tobacco - Shiro White- Ivory - Earthenware - Porcelain - Black.



+55 (11) 5071-0011
www.pascoalmassas.com.br



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