

Brazil

Member of ICHMT, AIHTC

(1) Overview

(Time Zone: Most of the population resides in regions with time zone GMT-3, but the Brazilian territory spreads from zones GMT-5 to GMT-2. Population: 214.1 million)

1. Organizations

The major organization that congregates thermal scientists in Brazil is **ABCM – Brazilian Society of Mechanical Engineering and Sciences** (www.abcm.org.br). ABCM was founded on April 19, 1975. It is a non-profit organization with about 700 individual members and 4 institutional members. Although ABCM is a general mechanical engineering organization, it counts with 19 Technical Committees, many of them related to thermal sciences. ABCM is the Representative National Organization at AIHTC and at ICHMT.

ABCM's goal is to congregate individuals and companies that share an interest in Engineering and Mechanical Sciences, in order to:

- Contribute for the development of Engineering and Mechanical Sciences in Brazil;
- Promote research, as well as the interchange/diffusion of knowledge;
- Encourage an effective cooperation between Universities, Research Centers and Industries, in order to contribute for the development of Brazil;
- Encourage the spreading of knowledge in Engineering and Mechanical Sciences through the publication of textbooks, monographies, magazines, journals and other communication media;
- Promote collaboration with related Institutes and Societies in Brazil and abroad;
- Promote Congresses, Symposia, Conferences and Courses.



2. Major Meetings

ABCM regularly promotes 12 scientific conferences. The largest conference held under the auspices of ABCM is **COBEM, the International Congress of Mechanical Engineering**, which is held every other year since 1971, and counts with about 1100 participants.

The **Brazilian Congress of Thermal Sciences – ENCIT** is held every other year since 1986 and counts with about 400 participants. The 19th edition of ENCIT will be held during November 06 to 10, 2022, in the beautiful wine production region of Brazil (<https://eventos.abcm.org.br/encit2022/>).



Other ABCM regular events related to thermal sciences include: EPTT – The International Spring School on Transition and Turbulence, EBECCEM – The Brazilian Meeting on Boiling, Condensation and Gas-Liquid Multiphase Flow, EVR – Summer School on Refrigeration and EdC – School on Combustion.

3. Major Journals

The **Journal of the Brazilian Society of Mechanical Sciences and Engineering** (JBSMSE - ISSN: 1678-5878) has been regularly published since 1979. The purpose of the JBSMSE Journal is to publish articles of permanent interest dealing with research, development and design related to science and technology in Mechanical Sciences and Engineering, encompassing interfaces with other branches of Engineering, as well as with Physics and Applied Mathematics. The JBSMSE Journal is currently published by Springer (<https://www.springer.com/journal/40430>) and it is indexed in JCR (quartile Q2, 64/133 in the category Engineering, Mechanical) with 2020 Impact factor of 2.22.

ABCM also regularly publishes online the journal **Thermal Engineering** (<https://abcm.org.br/pb/thermal-engineering>), which counts with technical and scientific contributions.



4. University System and Engineering Education

The University System in Brazil includes public and private institutions. Public Universities are run either by the Federal or local state governments; they are totally free for students from undergraduate to Ph.D. studies. Research in engineering is mainly conducted in public Universities, except for few well-ranked private Universities.

An engineering degree in Brazil takes about 5 years of studies. Engineers graduating from a Brazilian University automatically receive an authorization from the National Board of Engineers to act as a professional. Graduate studies in general require a minimum number of courses to be taken before the student can conduct research, both at the Master and Ph.D. levels. Students usually obtain a Master degree in 24 months, and a Ph.D. degree in 48 months.

5. Foundations of Scientific Research

Brazil counts with State Research Foundations (FAPs) with the mission to support research projects in the respective states of the Brazilian Federation and two major agencies of the federal government that sponsor research and graduate studies:

CNPq from the Ministry of Science and Technology (<https://www.gov.br/cnpq/pt-br>) and CAPES from the Ministry of Education (<https://www.gov.br/capes/pt-br>).

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