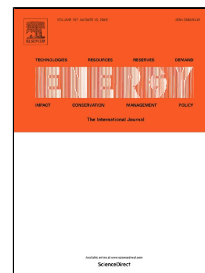


# Accepted Manuscript

Thermodynamics today

Adrian Bejan

PII: S0360-5442(18)31389-6  
DOI: 10.1016/j.energy.2018.07.092  
Reference: EGY 13357  
To appear in: *Energy*  
Received Date: 27 April 2018  
Accepted Date: 14 July 2018



Please cite this article as: Adrian Bejan, Thermodynamics today, *Energy* (2018), doi: 10.1016/j.energy.2018.07.092

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## Thermodynamics today

Adrian Bejan

J. A. Jones Distinguished Professor

Duke University

[abejan@duke.edu](mailto:abejan@duke.edu)

### Abstract

In this paper I use the example set by Prof. Jan Szargut as point of reference for a brief look at the current state of thermodynamics—the doctrine, its reach and importance. I start with my first encounter with Prof. Jan Szargut in 1979, and I show how his work influenced mine. Next, I review the structure that underpins thermodynamics as a discipline: the laws and the self-standing phenomena that they underpin, and graphic methods that convey these principles. Along the way, I draw attention to a recent trend that is caused by the inflation in scientific publishing due to the internet: the most common mistakes and misconceptions in thermodynamics, and how they are being spread. In sum, this paper is a call to action, to value, improve and defend the science of thermodynamics.

*Keywords:* Thermodynamics, laws, mechanics, caloric, constructal, evolution, design, discipline.

### 1. Professor Szargut

Science is like a civilized territory that improves, prospers and expands because it makes life better for the people who belong to it. It expands as long as it keeps producing useful things, which attract people. The civilized welcome the newcomers—the nobodies—provided that they obey the laws, the discipline. People join because their lives become better that way. To fight the barbarians who pillage on the perimeter is a necessary and unpleasant effort, a nuisance, not the objective. As the defeated barbarians are assimilated and civilized, the civilized territory expands

Download English Version:

<https://daneshyari.com/en/article/8071033>

Download Persian Version:

<https://daneshyari.com/article/8071033>

[Daneshyari.com](https://daneshyari.com)