

Metals in Past Societies: A Global Perspective on Indigenous African Metallurgy
Shadreck Chirikure

Springer, 2015
166 pages, \$54.99 (e-book \$39.99)
ISBN 978-3-319-11640-2

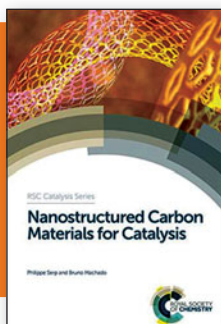
This slim book shines a spotlight on pre-industrial African metallurgy, its global connections, and anthropological implications. It integrates seemingly disparate disciplines, such as history, geology, ethnography, archeology, and metallurgy, to illustrate the diversity and innovation in metallurgy across Africa and the role of metals in the rise of socioeconomic inequalities and political power. The book has seven chapters, and the focus on metals, mainly iron, copper, gold, silver, lead, and tin, catering to human needs and wants is evident in each chapter. The sources of information are adequately cited, and the long list of references at the end of each chapter will be a boon to researchers in this field.

The first chapter presents the context of the work and data sources. The second chapter focuses on the origin and development of mining and metallurgy in pre-industrial Africa. Chapter 3 is dedicated to the interaction of nature and culture in the process of mining. African mining practices were similar to underground mining practices elsewhere not because

of the diffusion of ideas, but due to common limitations imposed on humans by geology. Chapter 4 deals with the transformation of ores into copper or iron by smelting and the sociocultural aspects of this process. Chapter 5 explores the social and cultural roles acquired by iron, copper, and gold as a result of fabrication into objects. Chapter 6 examines the social role of metals, trade in metals, cultural contact, proto-globalization, and technology transfer. African gold paid for commodities from India, Persia, and China, such as porcelain and gunpowder. This trade took place without significant technology transfer to Africa, because cultural barriers, differences in value systems, and a lower population density in Africa impeded the adoption of foreign metallurgical processes. Finally, chapter 7 draws lessons for global anthropology from the African experience. One needs to understand the evolution of materials technology to fully appreciate the development of social institutions, accumulation of wealth, and concentration of political power. At the same time, local beliefs,

rituals, and value systems influence the arc of technology. The author highlights the cultural aspects and social context of the adoption of metallurgy in Africa while drawing parallels between practices in pre-industrial Africa and those in other parts of the world. The book is peppered with delightful vignettes that offer insights into the process of transforming nature into culturally significant objects. For instance, African miners, like their counterparts in Nepal and Latin America, called upon deities, spirits, and ancestors to mediate between nature and humans. Women had distinct roles in this process, but there were variations in these roles and in the caste status of metalworkers across Africa. Taboos, rituals, and magic were very much a part of the development of metallurgical technology. The smelting of metal was considered analogous to conception, gestation, and child birth. Power, fertility, and metallurgy were intertwined, as shown by the decoration of furnaces with female anatomical features. The book concludes with a warning against broad generalizations and stereotypes about African practices. This volume is well written and illustrated with photos, micrographs, colorful maps, and drawings that enliven this challenging topic.

Reviewer: Ram Devanathan is Technical Group Manager of Reactor Materials and Mechanical Design, Pacific Northwest National Laboratory, USA.



Nanostructured Carbon Materials for Catalysis

Philippe Serp and Bruno Machado

Royal Society of Chemistry, 2015
570 pages, \$226.45
ISBN 978-1-84973-909-2

This book is an excellent introduction to the field of carbon nanomaterials for catalysis application for researchers and students in the field of chemistry. It will not be outdated for a

long time, as it is written from the point of view of the basics and applications. It covers molecular structure and surface chemistry aspects and comprises 10 chapters.

The first two chapters cover the fundamentals of different types of carbon nanomaterial, molecular structure, classifications, and its bulk properties as a catalyst. The third chapter introduces a molecular point of view of the adsorption process on the surface of nanostructured carbon materials by physisorption and chemisorption, and explains its specific adsorption sites for the chemical reactions. The next three chapters explain in detail the preparation processes and properties of different types of nanocarbon catalysts such as nanocarbon supported