

Laval University

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February, 1987

Metallurgical Chemistry. An Audio Course for Students

Fathi Habashi



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METALLURGICAL CHEMISTRY

An Audio Course for Students and Engineers

Fathi Kabashi

Department of Mining, Metallurgical, and Materials Engineering
Laval University, Quebec City, Canada

METALS																METALLOIDS				NONMETALS				H	He
Li	Be															B	C	N	O	F	Ne				
Na	Mg	Al															Si	P	Se	Cl	Ar				
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr								
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe								
Cs	Ba	*La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn								
Fr	Ra	**Ac																							

+

Ce

Pr

Nd

Pm

Sm

Eu

Gd

Tb

Dy

Ho

Er

Tm

Yb

Lu

++

Th

Pa

U

Np

Pu

Am

Cm

Bk

Cf

Es

Fm

Md

No

Lw

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2007

A WORD TO THE USER

ACS AUDIO COURSES are instructional units designed to serve the continuing education needs of chemists and chemical engineers. They can be used for either individual or group study.

This ACS AUDIO COURSE, "Metallurgical Chemistry", gives a brief history of the development of metal extraction technology, then discusses the metal and mineral industries, and physical and physicochemical methods of enriching ores. Various methods of recovering metals from ore--hydrometallurgy, pyrometallurgy, and electrometallurgy--are thoroughly detailed. The course also covers the theory of metallurgical reactions, and reviews pollution problems in the metallurgical industry. In addition, a comprehensive literature guide and bibliography, and a set of problems and solutions are included.

"Metallurgical Chemistry" provides an overview of the field that may be useful to persons in a number of disciplines. This course will serve as a review for mining, metallurgical, and chemical engineers, as well as geologists and mineralogists. For chemists working in related fields--such as refractories, fertilizers, organic solvents, or synthetic resins--and for chemistry students, the course provides a basic knowledge of metallurgical chemistry, using only an elementary background in chemistry. In addition, managers of mining companies or businesses that work with mining firms may also benefit from this course, even if they have no formal training in chemistry, as they will learn the terminology and basic theories of metallurgical chemistry.

This volume is the reference manual that is integrated with the audiotapes of "Metallurgical Chemistry". Because the lecturer refers constantly to the manual, each listener should have a copy of this manual as he or she listens, so he or she may follow these references and take notes.

Your comments and suggestions have proven to be exceptionally valuable guides for improving our education programs. We hope you will continue to send them to us.

Education Division
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METALLURGICAL CHEMISTRY

American Chemical Society Andio Course, 1987

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Tape	Manuel - Pages	Time - Minutes	Section	Subject
1	1-24	30	A,B	History, Metals
2	25-46	41	B	Progress and Problems
3	47-78	32	C,D	Beneficiation, Hydrometallurgy
4	79-110	43	D	Hydrometallurgy
5	111-124	23	E	Pyrometallurgy
6	125-144	38	E	Pyrometallurgy
7	145-164	24	F,G	Electrometallurgy, Energetics
8	165-184	36	G	Kinetics
9	185-196	33	H	Pollution
10	197-228	15	I	Information

This 5-hours ACS Audio Course

Metallurgical Chemistry

is composed of the reference manual and a DVD. It gives a brief history of the development of metal extraction technology, discusses the metal and mineral industries, and physical and physicochemical methods of enriching ores. Various methods of recovering metals from ore: hydro-, pyro-, and electrometallurgy are thoroughly detailed. The course also covers the theory of metallurgical reactions, and reviews pollution problems in the metallurgical industry. In addition, a comprehensive literature guide and a set of problems and solutions are included. ***Metallurgical Chemistry*** will serve as a review for mining, metallurgical, and chemical engineers, as well as geologists and mineralogists. For chemists working in related fields such as refractories, fertilizers, organic solvents, or synthetic resins, and for chemistry students, the course provides a basic knowledge of metallurgical chemistry, using only an elementary background in chemistry. In addition, managers of mining companies or businesses that work with mining firms may also benefit from this course, even if they have no formal training in chemistry, as they will learn the terminology and basic theories of metallurgical chemistry.

The Author



Fathi Habashi is Professor Emeritus of Extractive Metallurgy at Laval University in Québec City. He holds a B. Sc. degree in Chemical Engineering from the University of Cairo (1949), a Dr. techn. degree in Inorganic Chemical Technology from the University of Technology in Vienna (1959), and Dr. Sc. h. c. from Saint-Petersburg Mining Institute. He edited *Handbook of Extractive Metallurgy* in 4 volumes and authored a number of textbooks