



$$u(t) = U_c \cdot [1 - \cos(2\pi ft)] \cdot e^{-t/\tau}$$

ON THE NATURE OF MATTER

*THE ORIGIN OF THE UNIVERSE CREATED MATTER
FUNDAMENTALLY WAVE IN NATURE, NOT PARTICULATE*

*THE ORIGIN OF MATTER: ITS CAUSE;
THE STRUCTURE OF MATTER: ITS FORM;
MATTER'S INTERACTIONS: COULOMB, AMPERE, NEWTON,
MATTER WAVES, ATOMIC ORBITAL ELECTRONS,
GRAVITATION;
MATTER AND ATOMS;
APPLICATIONS*

ROGER ELLMAN

Cataloging Data

Ellman, Roger (1932-)

On the Nature of Matter

The origin of matter and its resulting characteristics, behavior, and applications.

ON THE NATURE OF MATTER

Copyright (c) Roger Ellman 2017

All rights reserved. This book may not be reproduced nor transmitted in any form nor by any means, electronic, mechanical or other including but not limited to photocopying, recording or by any information storage or retrieval system without written permission from the author, except for the inclusion of brief quotations in a review.

Library of Congress Control Number: 2017918355

Published by: The-Origin Foundation, Inc.,
1401 Fountaingrove Pkwy.
Santa Rosa, CA 95403, USA
707-537-0257

<http://www.The-Origin.org>

ISBN 1981856978

CONTENTS

BOOK I - MATTER

1. The Origin of Matter: Its Cause	1
2. The Behavior of Matter: Its Form.....	11
3. The Action of Matter: The Electrostatic Effect - Coulomb's Law	25
4. The Action of Matter: Motion and Relativity	35
5. The Action of Matter: The Magnetic Effect - Ampere's Law	47
6. The Action of Matter: Matter Waves	63
7. The Action of Matter: Gravitation	77
Appendix A – Particles	85
A-1 – The Neutron	85
A-2 – The Atomic Nuclei	97
A-3 – Radioactivity	125
A-4 – The Photon	135
Appendix B – The Limitation of the Original Envelopes	145
Appendix C – Why No Immediate Mutual Annihilation	149
Appendix D – Integration Details for Magnetic Effect Calculations	159
Appendix E – The Universal Exponential Decay.....	163
<u>BOOK II – GRAVITATIONAL APPLICATIONS</u>	169
8. Deflecting <i>Propagated Outward Flow</i>	171
9. Quantifying the Deflection	181
10. Cubic Crystal Deflector Calculations	189
11. Deflector Design Details	197
12. Gravito-Electric Power Generation	203

13. The Anti-Gravitational Effect	209
14. Anti-Gravitation Deep Space Drive	213
15. Anti-Gravitation Planet Over-Surface Flyer	217
Appendix F – Relative <i>Propagated Outward Flow</i> Concentrations	221
Appendix G – Factors Affecting Cubic Crystal Tilt	231

ABOUT THE AUTHOR

The-Origin Foundation, Inc. is a non-profit organization founded to foster independent scientific, mathematical, and philosophical research.

The author of “On the Nature of Matter”, Roger Ellman, is the General Director of the foundation.

Roger Ellman has published over fifty professional papers on topics ranging from physics, cosmology, and astrophysics to artificial intelligence and mathematics.

He has presented some of his papers to conferences of / at:

The American Physical Society [APS], .
The American Society for the Advancement of Science,
Cambridge University, United Kingdom
The Library of Alexandria, Egypt
The Russian Academy of Natural Sciences, St Petersburg
The Hungarian Academy of Sciences, Budapest
A Science Conference in Shang Hai, China

He is author of three books in addition to the present “On the Nature of Matter”.

His education includes graduate studies at Stanford University after graduating from West Point, the United States Military Academy.

PREFACE

In order to correctly understand the nature of matter it is necessary to consider all of the applicable sources of information and data. There are two such sources:

- The behavior of matter in its various encountered circumstances, and
- The origin of matter – how and from what it came to be.

The behavior of matter has been thoroughly investigated over the years and is codified in what we may refer to as 20th Century physics. That is the starting point of this present work, the various “Laws”, “particles”, “forces” and so forth that are the current generally accepted understandings of how the material world functions physically.

Until the present the origin of matter, its source, has not been addressed and that omission has resulted in a major error in the understanding of the nature of matter – the incorrect solution to the problem of the wave nature of matter versus its particle nature.

In the history of the physics of particles their wave aspect appeared significantly after their particle aspects had been well developed. Furthermore, although the wavelength aspect of matter waves became readily developed and experimentally confirmed the frequency aspect of matter waves could not then be successfully treated.

The late appearance of matter waves and the failure to treat their frequency resulted in the dominant success and acceptance of the general particle nature of matter.

That success has been so dominant that particle solutions to new phenomena are consistently proposed and the designation of new particles with names ending in “on”, an imitating of protons, electrons, and neutrons, has become frequent.

It is unfortunate that a number of problems with current physics theory and a number of new avenues for physics investigation have been ignored. For example:

- Matter waves.
- Why are the stable atomic electron orbits the only stable ones ?
- How does one charge exert a force on another distant charge ? By electric “field” ? That is merely an assignment of a vector [a magnitude and direction] to each point in a subset of space without a supporting mechanism or cause.
- The same for the magnetic “field”.
- How do the Lorentz Contractions occur since they are actual changes not mere observational differences ?
- What enforces the orbital electron structure as defined in terms of four “quantum numbers” n , l , m_l , and m_s .
- *etc.*

The present work resolves all of these issues and, making use of both of the above named applicable sources and of the developing of a solution to the matter wave frequency problem, presents, describes and advocates that all matter is wave in nature, oscillatory in nature.