

material
particles to which the electrons are attached
in solid bodies should also be taken into
account & that would still further very
considerably increase the effect energy.

At present I think that an experimental
verification or otherwise of the increased
refraction in liquids & gases is a crucial
experiment on the correctness of the present
theory. My illness last winter has
interrupted my work but a good many
of the calculations are made & shown over
on another sheet now. - I shall glad
to have your opinion on a paper which I sent to the
Phil Mag. in criticism of some of J.J. Thomson's
results on the magnetic force acting on moving
electrified particles. Can you make anything of
his first chapter in Recent Researches pp. 16-22.
The result at the foot of page 22 is certainly wrong.
The integrations are right but the method seems a
very dangerous one. - Yours affecly -

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Nov. 13. 91

∅ 6/7 M

Dear Fitzgerald,

We have not been able to suit you as
regards the dates of the practical exams.
The results have to be out on the 16th. - But
if by slightly changing the times we can
accommodate you this might be done. Then
there is no need to give me day to catch
college - We shall be very glad to see you
here - I am sorry to say for the last time -

Send me your
Lodge notes soon the Physics final
paper with some remarks about the questions she
seemed to prefer to keep. Some of the questions
you crossed out. I had them all printed
& we can discuss which to take when we see

the profi. - I will send you Lodge's remarks
with my own as soon as the paper is in type
probably to morrow. -

b/7

I see from your article in Nature
about Faraday that you have been speculating
in the same direction. I made last winter
some calculations on the self induction
in liquids on the electron hypothesis
with my body contacts, ^{water} liquid I find that
the electromagnetic energy ought to be very
considerably to startles larger than that
generally assumed. The difficulty in experimental
verification consists in the fact that it

experimental methods generally measure
Self Inductance and a conductor is required
Resistance

& the wires were widely separated the
resistance increases ^{much} in a more rapid ratio than
than the S.I. so that the value diminishes -

I have tried over this by using solid
conductors of largish dimensions. The
equations for electric currents doff of course
if the effect is taken into account, they give
other the additional terms are of the same
kind as ch. Herzy investigation ^{an} After putting
such mass of electricity in the air of
spheres they lead to I solvite case, & a
then in an induction balance ought to
answer. But I imagine that there can
be no doubt, that the energy of motion of the