Memo/Reply From
JOSHUA LEDERBERG

TO: Bob Mitchell. Celanese

APR 14 1981

STAB memo 4/13/81

With the minor footnotes attached I concur with all that was said. (heartily) —

1) Electrical properties of polymers. (I am no expert but am not totally innocent) These have very exciting prospects but my intuition is that the profit will come from the devices not the materials (possibly except massive applications like conductors to replace copper). Then the scale suggested is just for minimum footentry, not for any real exploration.

Shouldn't you consider a technical joint venture with* a company that lacks the chemistry but is already sophisticated in electronics

(* or acquisition of)

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TO:

(and electro-optical etc.) devices? I don't know about their technology, but Schlumberger has the kind of drive that would be appealing to a joint venture.

2) Several references to guar / agar were partly compressed.

a) Guar production might be amenable to genetic engineering

b) Agar is a useful natural polymer which enjoys a $10 MM+ market at retail (at >$10/lb.) Could a synthetic or biosynthetic substitute be devised that would relieve dependence on Japanese (sea weed) monopoly.

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TO:

3) I do applaud the biotechnology program R+D. Can crisp decisions now be made about next stages of implementation?

Still more (and more sophisticated) investment will be warranted for incremental improvement of the mycelate process if a large scale production effort is foreseen.

4) May I echo, with amplification, the idea of focussing on Celanese' own applications for large scale production of its film technologies for chemical separations, e.g. of microbial fermentation products. If reverse osmosis is cost saving for distilling water, why not for EtOH, organic acids etc.

J

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