

[A] DIVISION OF Analytical Chemistry

Paper number as listed
on program _____

[B] TITLE OF PAPER Determination of the Major Constituents in the
Mainstream Total Particulate Matter of a New Cigarette
Time Required for Which Heats, Rather Than Burns Tobacco
Presentation _____
☐ Poster Presentation
Preferred

[C] AUTHORS

Underline name of speaker

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L.A. Milhous, Jr.
R.D. Hicks
V.B. Stennis
D.F. Simmons
A.M. Slater

[D] Business Mailing Address Including

Zip Code and telephone Number

List Address only once if all authors at
same address.

R. J. Reynolds Tobacco Company
Bowman Gray Technical Center
Winston-Salem, NC 27102

[E] ACS Division

Member? Member?

☒ Yes ☐ Yes
☐ No ☐ No

[F] American Chemist
or Chemical
Engineer?If not, give classification such as
biologist, physicist, etc. Ph.D?

☒ Chemist
☐ Chemical
Engineer
Other

NOTE: All presenting authors must register for the meeting—either full meeting registration or one-day registration for the day
of presentation.

[G] Work done at R, J. Reynolds Tobacco Company Bowman Gray Technical Center

[H] Plan ACS _____ nonACS _____ publication. Where? _____ No _____ Uncertain _____

[I] Specify Equipment Required for Presentation Other than 2" x 2" slide or overhead (transparency) projector _____

[J] ABSTRACT. Please be BRIEF—150 words maximum if possible. Title of paper should be ALL CAPS; author(s) listed by
first name, middle initial, last name; indicate full address w/zip code. SINGLE SPACE, BLACK CARBON RIBBON.

DO NOT
USE →

DETERMINATION OF THE MAJOR CONSTITUENTS IN THE MAINSTREAM TOTAL PARTICULATE
MATTER OF A NEW CIGARETTE WHICH HEATS, RATHER THAN BURNS TOBACCO.

M. F. Borgerding, L. A. Milhous, Jr., R. D. Hicks, V. B. Stennis, D. F. Simmons,
and A. M. Slater. R. J. Reynolds Tobacco Company, Bowman Gray Technical Center,
Winston-Salem, NC 27102

Cigarette smoke is a complex mixture composed of several thousand chemical constituents present in small amounts. The mainstream total particulate matter (TPM) of a new cigarette is quite different from that of other commercially available cigarettes. A rapid gas chromatographic method has been developed for the determination of the major constituents in the mainstream TPM of the new cigarette which heats, but does not burn tobacco. In the method, dual chromatographic separations may be performed in a single oven due to the unique advantages of microprocessor based instrumentation. The separation of propylene glycol, nicotine and glycerol is achieved with a J&W Scientific DB-WAX Megabore fused silica capillary column. The simultaneous analysis of water employs a Porapak Q packed column. The capillary separation is performed in the split mode and a discussion of the relationship between injection port temperature and optimal analytical precision will be presented. Typical repeatability obtained for the analytes studied was between 0.5 and 3.0% RSD for the range of interest.

[K] MAIL ABSTRACT TO PERSON NAMED IN ACS DIVISIONAL DEADLINES PUBLISHED (JUNE & DEC.) IN C&EN



42nd Tobacco Chemists' Research Conference

ABSTRACT FORM

Below please type name, address and phone number of principal author.

NOTE: The abstract must contain a meaningful summary of the material to be presented. It must include the objectives of the research efforts, the methods used, and the results obtained. The editorial committee reviews and accepts papers based on the abstract. Very short or vague abstracts will not be accepted.

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The capillary separation is performed in the split mode and a discussion of the relationship between injection port temperature and optimal analytical precision will be presented. Typical repeatability obtained for the analytes studied was between 0.5 and 3.0% RSD for the range of interest. The most difficult compound to determine accurately has been water. A comparison of collection techniques for the measurement of mainstream water will be presented.

1. The abstract should not be less than 180 words or more than 225 words. It should be included in the space designated above in form suitable for direct photocopying by the printer (if typewritten, use a carbon ribbon).
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 - (a) Title all in capitals.
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5. Projection requirements: only 2" x 2" slides will be accommodated, with maximum slide thickness of 1/8".
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