### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| In re <i>Inter Partes</i> Review of: | ) |
|--------------------------------------|---|
| U.S. Patent No. 9,901,123            | ) |
| Issued: February 27, 2018            | ) |
| Application No.: 15/286,087          | ) |
| Filing Date: October 5, 2016         | ) |

For: Tobacco-Containing Smoking Article

FILED VIA E2E

DECLARATION OF DR. SEETHARAMA C. DEEVI IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,901,123



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|     | D.   | Limitations 27[b] and [c]: at least one elongated electrical resistance heater extending downstream |
|-----|------|---|
|     | E.   | Limitation 27[d]: a controller  |
|     | F.   | Limitation 27[e]  |
|     | G.   | Limitation 27[f]: the elongated portion of the resistance   |
|     | G.   |   |
|     | 11   | heating element extends into the tobacco segment  |
|     | Н.   | Limitation 27[g]: during draw, aerosol-forming material can   |
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|     | I.   | Claim 28: cigarette-type device's filter element  |
|     | J.   | Claim 29: manual actuation  |
|     | K.   | Claim 30: temperature 200° C to 600° C  |
| X.  |      | ms 27-30 are Unpatentable over Adams in view of Morgan and  |
|     | Broo | oks   |
|     | A.   | Claim 27: Overview and the Combination  |
|     | B.   | Claim 27: Preamble  |
|     | C.   | Limitation 27[a]: an electrical power source  |
|     | D.   | Limitations 27[b] and [c]: at least one elongated electrical  |
|     |      | resistance heater extending downstream  |
|     | E.   | Limitation 27[d]: a controller  |
|     | F.   | Limitation 27[e]  |
|     | G.   | Limitation 27[f]: the elongated portion of the resistance   |
|     | ٥.   | heating element extends into the tobacco segment  |
|     | H.   | Limitation 27[g]: during draw, aerosol-forming material can   |
|     | 11.  | be volatilized to produce a visible mainstream aerosol 115  |
|     | I.   | Claim 28: cigarette-type device's filter element  |
|     | J.   | Claim 29: manual actuation  |
|     | K.   | Claim 30: temperature 200° C to 600° C  |
|     | IX.  | Claim 30. temperature 200 °C to 000 °C  |
| XI. |      | ms 27-30 are Unpatentable over Counts-962, Alone or in  |
|     | Com  | bination with Brooks120   |
|     | A.   | Claim 27: Overview and the Combination  |
|     | B.   | Claim 27: Preamble  |
|     | C.   | Limitation 27[a]: an electrical power source  |
|     | D.   | Limitations 27[b] and [c]: at least one elongated electrical  |
|     |      | resistance heater extending downstream  |
|     | E.   | Limitation 27[d]: a controller  |
|     | F.   | Limitation 27[e]  |
|     |      | — — IIIII vwvi ∪II  |



|     | G.  | Limitation 27[f]: the elongated portion of the resistance   |    |
|-----|-----|---|----|
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#### I. Introduction and Qualifications

- 1. I have been retained by Philip Morris Products, S.A ("Petitioner") to provide my opinion concerning the validity of U.S. Patent No. 9,901,123 (attached to the accompanying Petition as Ex. 1001 and henceforth referred to as "the '123 patent") in support of a Petition for *Inter Partes* Review. I am being compensated for my time in connection with this IPR at my standard consulting rate, which is \$450 per hour, plus actual expenses, regardless of the outcome of this matter.
- 2. I have over 30 years of experience in the development of reduced risk products, focusing on "heat not burn" technology such as that described in the '123 patent.
- 3. My research work for my Ph.D. focused on Solid State and Metallurgical Reactions and I was granted a Ph.D from the Indian Institute of Science in 1981. I subsequently continued my education and obtained a Master of Engineering in Mechanical Engineering from the University of Virginia, and Master of Business Administration from Fuqua School of Business of Duke University.
- 4. After several research positions in academia (University of California, Davis; Brown University; and Indian Institute of Science, Bangalore), I began working at the RD&E Center at Philip Morris USA in Richmond, Virginia in 1988 as a Research Scientist developing reduced risk products. I remained with the



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