

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
02 May 2024 (02.05.2024)



(10) International Publication Number
WO 2024/091391 A1

(51) International Patent Classification:

A61K 9/50 (2006.01) A61K 38/00 (2006.01)
A61K 47/26 (2006.01) A61K 9/19 (2006.01)
A61K 38/42 (2006.01)

(21) International Application Number:

PCT/US2023/035019

(22) International Filing Date:

12 October 2023 (12.10.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/420,377 28 October 2022 (28.10.2022) US

(71) Applicant: **APPLIED MATERIALS, INC.** [US/US];
3050 Bowers Avenue, Santa Clara, California 95054 (US).

(72) Inventors: **WANG, Fei**; c/o Applied Materials, Inc., Law
Dept., M/S 1269, 3050 Bowers Avenue, Santa Clara, Cal-
ifornia 95054 (US). **SAPRE, Kedar Anand**; c/o Applied

Materials, Inc., Law Dept., M/S 1269, 3050 Bowers Av-
enue, Santa Clara, California 95054 (US). **RASTOGI,**
Suneel; c/o Applied Materials, Inc., Law Dept., M/S 1269,
3050 Bowers Avenue, Santa Clara, California 95054 (US).
CHIRUVOLU, Shivkumar; c/o Applied Materials, Inc.,
Law Dept., M/S 1269, 3050 Bowers Avenue, Santa Clara,
California 95054 (US).

(74) Agent: **PATTERSON, B. Todd** et al.; 24 Greenway Plaza,
Suite 1600, Houston, Texas 77046 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG,
KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY,
MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA,
NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO,
RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH,

(54) Title: PROTEIN POWDER COMPOSITIONS AND METHODS FOR PREPARING THE SAME

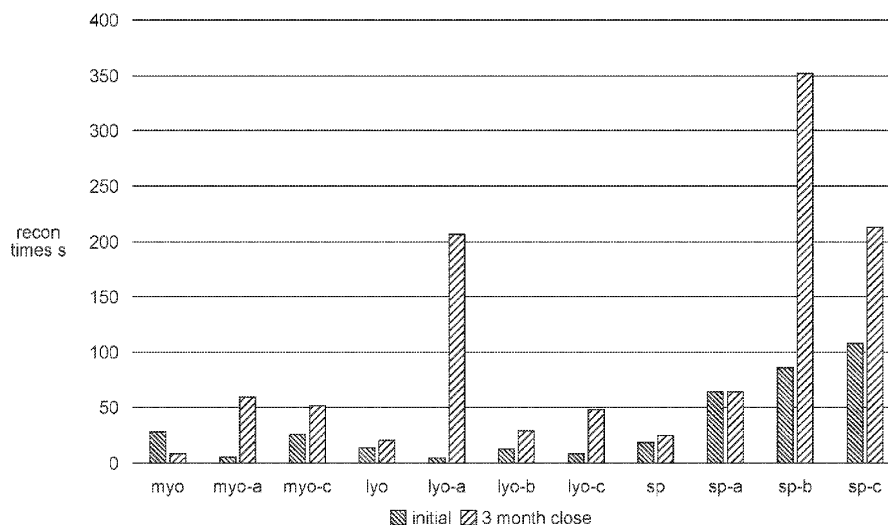


FIG. 1

(57) Abstract: Embodiments of the present disclosure generally relate to protein powder compositions and methods for preparing the same. In one or more embodiments, methods include coating a plurality of protein powder particles containing myoglobin with an aluminum oxide coating to form a plurality of coated particles during an atomic layer coating (ALC) process. The protein powder compositions have improved properties over the corresponding uncoated protein powder. The protein powder compositions have greater flowability, density, and a greater level of recoverability over the corresponding uncoated protein powder.

[Continued on next page]



WO 2024/091391 A1

TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS,
ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))