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 62/842,373 02 May 2019 (02.05.2019) US</p> <p>(71) Applicant: IRIDIA, INC. [US/US]; 3156 Lionshead Avenue, Suite 1, Carlsbad, California 92010 (US).</p> | <p>(72) Inventors: PREDKI, Paul F.; c/o Iridia, Inc., 3156 Lionshead Avenue, Suite 1, Carlsbad, California 92010 (US).
 FOSTER, John Stuart; c/o Iridia, Inc., 3156 Lionshead Avenue, Suite 1, Carlsbad, California 92010 (US).</p> <p>(74) Agent: HOXIE, Thomas; HOXIE & ASSOCIATES LLC, 75 Main Street, Suite 203, Millburn, New Jersey 07041 (US).</p> <p>(81) Designated States (<i>unless otherwise indicated, for every kind of national protection available</i>): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,</p> |
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- (54) **Title:** IMPROVED SYSTEMS AND METHODS FOR WRITING AND READING DATA STORED IN A POLYMER

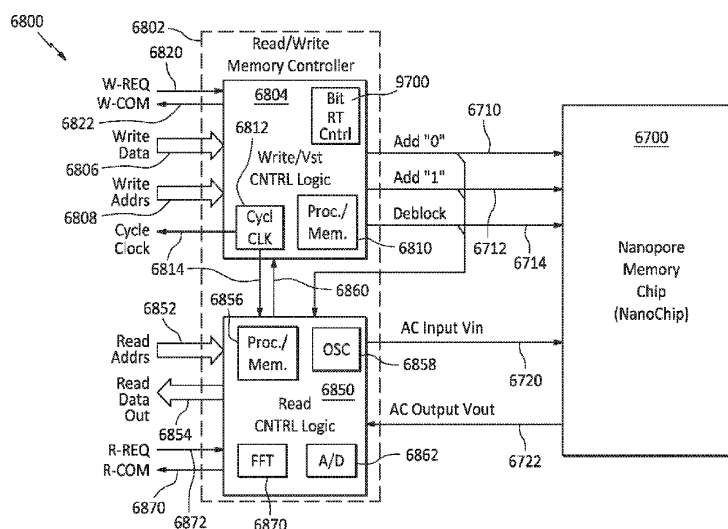


FIG. 4

- (57) Abstract:** A novel system and method of storing and reading digital data, including providing a nanopore polymer memory device having at least one memory cell comprising at least two addition chambers each arranged to add a unique chemical construct (or codes) to a polymer (or DNA) string when the polymer enters the respective addition chamber, the data comprising a series of the codes; successively steering the polymer through the nanopore into the addition chambers to add the codes to the polymer to create the digital data pattern on the polymer; and accurately controlling the bit rate of the polymer using a servo controller. The device may have loading chamber(s) to load (or remove) the polymer into/from the deblock chambers through at least one micro-hole. The cell may be part of a memory system that stores and retrieves "raw" data and allows for remote retrieval and conversion.

SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
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