

Supporting Information

Title: Synthesis of symmetrical and unsymmetrical
bis(pyrrolo[2,3-*d*]pyrimidinyl)methanes

Author(s): Meenakshi Sharma and Pulak J. Bhuyan*

General considerations:

Acetanilide is taken as standard for calibration of the instrument. Run 105, 117, 127, 145, 165 and 217 are of standard (ID STD)

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CHN Analytical Report of compounds 3a-p, 7a-e and 9a-q.....S3-S11

ID No.	Compound	ID No.	Compound	ID No.	Compound
	No.		No.		No.
MS 1	3a	MS 18	7b	MS 33	9j
MS 2	3b	MS 19	7c	MS 34	9k
MS 3	3c	MS 41	7d	MS 35	9l
MS 6	3f	MS 42	7e	MS 36	9m
MS 9	3i	MS 20	9a	MS 37	9n
MS 10	3j	MS 23	9b	MS 38	9o
MS 11	3k	MS 26	9c	MS 39	9p
MS 12	3l	MS 27	9d	MS 40	9q
MS 13	3m	MS 28	9e		
MS 14	3n	MS 29	9f		
MS 15	3o	MS 30	9g		
MS 16	3p	MS 31	9h		
MS 17	7a	MS 32	9i		

DATE 08 04 14 TIME 13 23 46 OPERATOR ID ANC15 PPK
RUN 105 ID STD WEIGHT 1.642

SIGNALS

CARBON 70.90%	ZR 4068
HYDROGEN 6.96%	NR 4899
NITROGEN 11.36%	CR 22569
	HR 27705

FILL TIME 39 SECONDS

DATE 08 04 14 TIME 13 29 47 OPERATOR ID ANC15 PPK
RUN 106 ID MS 1 WEIGHT 1.876

SIGNALS

CARBON 60.80%	ZR 4081
HYDROGEN 4.71%	NR 5735
NITROGEN 17.75%	CR 21599
	HR 26126

FILL TIME 39 SECONDS

DATE 08 04 14 TIME 13 35 29 OPERATOR ID ANC15 PPK
RUN 107 ID MS 2 WEIGHT 1.962

SIGNALS

CARBON 61.49%	ZR 4080
HYDROGEN 4.97%	NR 5900
NITROGEN 17.26%	CR 22866
	HR 27069

FILL TIME 39 SECONDS

DATE 08 04 14 TIME 13 41 10 OPERATOR ID ANC15 PPK
RUN 108 ID MS 3 WEIGHT 1.804

SIGNALS

CARBON 59.57%	ZR 4067
HYDROGEN 4.87%	NR 6137
NITROGEN 16.69%	CR 20001
	HR 24047

FILL TIME 39 SECONDS

DATE 08 04 14 TIME 13 47 06 OPERATOR ID ANC15 PPK
RUN 109 ID MS 4 WEIGHT 1.920

SIGNALS

CARBON 56.70%	ZR 4060
HYDROGEN 4.19%	NR 8864
NITROGEN 16.55%	CR 21917
	HR 26541

FILL TIME 39 SECONDS

DATE 09 04 14 TIME 13 26 46 OPERATOR ID ANC15 PPK

RUN 117 ID STD WEIGHT 1.642

SIGNALS

CARBON 70.91%	ZR 4067
HYDROGEN 6.95%	NR 4897
NITROGEN 11.35%	CR 22579
	HR 27785

FILL TIME 39 SECONDS

DATE 09 04 14 TIME 13 29 45 OPERATOR ID ANC15 PPK

RUN 118 ID MS 5 WEIGHT 1.896

SIGNALS

CARBON 52.16%	ZR 4089
HYDROGEN 3.89%	NR 5726
NITROGEN 15.25%	CR 21299
	HR 27126

FILL TIME 39 SECONDS

DATE 09 04 14 TIME 13 35 29 OPERATOR ID ANC15 PPK

RUN 119 ID MS 6 WEIGHT 1.862

SIGNALS

CARBON 55.56%	ZR 4088
HYDROGEN 4.19%	NR 5908
NITROGEN 18.95%	CR 22886
	HR 28069

FILL TIME 39 SECONDS

DATE 09 04 14 TIME 13 41 19 OPERATOR ID ANC15 PPK

RUN 120 ID MS 7 WEIGHT 1.897

SIGNALS

CARBON 55.06%	ZR 4057
HYDROGEN 4.25%	NR 6138
NITROGEN 17.58%	CR 20081
	HR 24087

FILL TIME 39 SECONDS

DATE 09 04 14 TIME 13 47 46 OPERATOR ID ANC15 PPK

RUN 121 ID MS 8 WEIGHT 1.980

SIGNALS

CARBON 64.21%	ZR 4050
HYDROGEN 4.69%	NR 8860
NITROGEN 16.15%	CR 20617
	HR 28641

FILL TIME 39 SECONDS

DATE 10 04 14 TIME 13 36 40 OPERATOR ID ANC15 PPK

RUN 127 ID STD WEIGHT 1.671

SIGNALS

CARBON 70.92%	ZR 4088
HYDROGEN 6.98%	NR 4767
NITROGEN 11.37%	CR 22679
	HR 26785

FILL TIME 39 SECONDS

DATE 10 04 14 TIME 13 39 40 OPERATOR ID ANC15 PPK

RUN 128 ID MS 9 WEIGHT 1.996

SIGNALS

CARBON 59.26%	ZR 4079
HYDROGEN 4.14%	NR 5826
NITROGEN 18.89%	CR 20289
	HR 28136

FILL TIME 39 SECONDS

DATE 10 04 14 TIME 13 42 22 OPERATOR ID ANC15 PPK

RUN 129 ID MS 10 WEIGHT 1.892

SIGNALS

CARBON 60.09%	ZR 4068
HYDROGEN 4.47%	NR 5906
NITROGEN 18.34%	CR 23896
	HR 28069

FILL TIME 39 SECONDS

DATE 10 04 14 TIME 13 44 17 OPERATOR ID ANC15 PPK

RUN 130 ID MS 11 WEIGHT 1.997

SIGNALS

CARBON 58.02%	ZR 4087
HYDROGEN 4.31%	NR 6148
NITROGEN 17.70%	CR 20881
	HR 25087

FILL TIME 39 SECONDS

DATE 10 04 14 TIME 13 47 46 OPERATOR ID ANC15 PPK

RUN 131 ID MS 12 WEIGHT 1.926

SIGNALS

CARBON 55.15%	ZR 4078
HYDROGEN 3.61%	NR 8760
NITROGEN 17.51%	CR 20611
	HR 27641

FILL TIME 39 SECONDS

DATE 10 04 14 TIME 13 49 16 OPERATOR ID ANC15 PPK

RUN 132 ID MS 13 WEIGHT 1.936

SIGNALS

CARBON 50.42%	ZR 4098
HYDROGEN 3.32%	NR 6057
NITROGEN 15.29%	CR 20891
	HR 26089

FILL TIME 39 SECONDS

DATE 10 04 14 TIME 13 51 16 OPERATOR ID ANC15 PPK

RUN 133 ID MS 14 WEIGHT 1.946

SIGNALS

CARBON 53.82%	ZR 4066
HYDROGEN 3.57%	NR 8769
NITROGEN 20.06%	CR 20714
	HR 27741

FILL TIME 39 SECONDS

DATE 10 04 14 TIME 13 52 36 OPERATOR ID ANC15 PPK

RUN 134 ID MS 15 WEIGHT 1.876

SIGNALS

CARBON 53.15%	ZR 4049
HYDROGEN 3.61%	NR 6053
NITROGEN 18.64%	CR 20793
	HR 25079

FILL TIME 39 SECONDS

DATE 10 04 14 TIME 13 54 20 OPERATOR ID ANC15 PPK

RUN 135 ID MS 16 WEIGHT 1.895

SIGNALS

CARBON 63.11%	ZR 4069
HYDROGEN 4.09%	NR 8799
NITROGEN 17.15%	CR 20615
	HR 28791

FILL TIME 39 SECONDS

DATE 11 04 14 TIME 13 20 49 OPERATOR ID ANC15 PPK

RUN 145 ID STD WEIGHT 1.692

SIGNALS

CARBON 70.99%	ZR 4057
HYDROGEN 6.85%	NR 4895
NITROGEN 11.75%	CR 25179
	HR 27679

FILL TIME 39 SECONDS

DATE 11 04 14 TIME 13 29 45 OPERATOR ID ANC15 PPK

RUN 146 ID MS 17 WEIGHT 1.875

SIGNALS

CARBON 59.71%	ZR 4091
HYDROGEN 5.19%	NR 5746
NITROGEN 16.65%	CR 21264
	HR 26129

FILL TIME 39 SECONDS

DATE 11 04 14 TIME 13 33 24 OPERATOR ID ANC15 PPK

RUN 147 ID MS 18 WEIGHT 1.868

SIGNALS

CARBON 58.39%	ZR 4087
HYDROGEN 5.29%	NR 5708
NITROGEN 15.55%	CR 22847
	HR 29039

FILL TIME 39 SECONDS

DATE 11 04 14 TIME 13 35 33 OPERATOR ID ANC15 PPK

RUN 148 ID MS 19 WEIGHT 1.945

SIGNALS

CARBON 53.99%	ZR 4038
HYDROGEN 4.49%	NR 6083
NITROGEN 18.15%	CR 20895
	HR 26878

FILL TIME 39 SECONDS

DATE 11 04 14 TIME 13 39 43 OPERATOR ID ANC15 PPK

RUN 149 ID MS 20 WEIGHT 1.989

SIGNALS

CARBON 61.88%	ZR 4049
HYDROGEN 4.93%	NR 5783
NITROGEN 18.83%	CR 20589
	HR 26820

FILL TIME 39 SECONDS

DATE 11 04 14 TIME 13 43 21 OPERATOR ID ANC15 PPK

RUN 152 ID MS 23 WEIGHT 1.793

SIGNALS

CARBON 60.28%	ZR 4085
HYDROGEN 4.34%	NR 8192
NITROGEN 20.09%	CR 20619
	HR 29398

FILL TIME 39 SECONDS

DATE 11 04 14 TIME 13 46 01 OPERATOR ID ANC15 PPK
RUN 155 ID MS 26 WEIGHT 1.708

SIGNALS

CARBON 61.22%	ZR 4008
HYDROGEN 4.67%	NR 8092
NITROGEN 19.56%	CR 20580
	HR 28507

FILL TIME 39 SECONDS

DATE 17 04 14 TIME 13 20 47 OPERATOR ID ANC15 PPK
RUN 165 ID STD WEIGHT 1.662

SIGNALS

CARBON 70.09%	ZR 4066
HYDROGEN 6.35%	NR 4099
NITROGEN 11.79%	CR 25139
	HR 27949

FILL TIME 39 SECONDS

DATE 17 04 14 TIME 13 23 15 OPERATOR ID ANC15 PPK
RUN 166 ID MS 27 WEIGHT 1.824

SIGNALS

CARBON 59.82%	ZR 4094
HYDROGEN 4.87%	NR 5906
NITROGEN 18.26%	CR 21065
	HR 26339

FILL TIME 39 SECONDS

DATE 17 04 14 TIME 13 25 24 OPERATOR ID ANC15 PPK
RUN 167 ID MS 28 WEIGHT 1.850

SIGNALS

CARBON 55.42%	ZR 4090
HYDROGEN 4.17%	NR 5908
NITROGEN 20.62%	CR 22940
	HR 29059

FILL TIME 39 SECONDS

DATE 17 04 14 TIME 13 26 05 OPERATOR ID ANC15 PPK
RUN 168 ID MS 29 WEIGHT 1.900

SIGNALS

CARBON 62.72%	ZR 4094
HYDROGEN 5.27%	NR 5009
NITROGEN 18.32%	CR 21809
	HR 26209

FILL TIME 39 SECONDS

DATE 17 04 14 TIME 13 27 44 OPERATOR ID ANC15 PPK
RUN 169 ID MS 30 WEIGHT 1.832

SIGNALS

CARBON 61.32%	ZR 4078
HYDROGEN 5.37%	NR 5984
NITROGEN 17.22%	CR 22670
	HR 27069

FILL TIME 39 SECONDS

DATE 17 04 14 TIME 13 29 13 OPERATOR ID ANC15 PPK
RUN 170 ID MS 31 WEIGHT 1.932

SIGNALS

CARBON 57.12%	ZR 4604
HYDROGEN 4.67%	NR 5079
NITROGEN 19.50%	CR 21729
	HR 26439

FILL TIME 39 SECONDS

DATE 17 04 14 TIME 13 30 32 OPERATOR ID ANC15 PPK
RUN 171 ID MS 32 WEIGHT 1.880

SIGNALS

CARBON 61.92%	ZR 4036
HYDROGEN 5.07%	NR 5962
NITROGEN 18.94%	CR 22852
	HR 27329

FILL TIME 39 SECONDS

DATE 17 04 14 TIME 13 31 11 OPERATOR ID ANC15 PPK
RUN 172 ID MS 33 WEIGHT 1.940

SIGNALS

CARBON 60.62%	ZR 4683
HYDROGEN 5.17%	NR 5038
NITROGEN 17.74%	CR 24708
	HR 26483

FILL TIME 39 SECONDS

DATE 17 04 14 TIME 13 32 22 OPERATOR ID ANC15 PPK
RUN 173 ID MS 34 WEIGHT 1.836

SIGNALS

CARBON 56.32%	ZR 4025
HYDROGEN 4.37%	NR 5670
NITROGEN 20.08%	CR 23880
	HR 27334

FILL TIME 39 SECONDS

DATE 17 10 14 TIME 13 24 06 OPERATOR ID ANC15 PPK
RUN 217 ID STD WEIGHT 1.602

SIGNALS

CARBON 70.91%	ZR 4069
HYDROGEN 6.96%	NR 4867
NITROGEN 11.36%	CR 22959
	HR 27785

FILL TIME 39 SECONDS

DATE 17 10 14 TIME 13 26 10 OPERATOR ID ANC15 PPK
RUN 218 ID MS 35 WEIGHT 1.832

SIGNALS

CARBON 54.80%	ZR 4032
HYDROGEN 4.16%	NR 5829
NITROGEN 19.18%	CR 21209
	HR 27110

FILL TIME 39 SECONDS

DATE 17 10 14 TIME 13 28 39 OPERATOR ID ANC15 PPK
RUN 219 ID MS 36 WEIGHT 1.832

SIGNALS

CARBON 57.30%	ZR 4839
HYDROGEN 5.59%	NR 5908
NITROGEN 21.11%	CR 21906
	HR 27060

FILL TIME 39 SECONDS

DATE 17 10 14 TIME 13 30 46 OPERATOR ID ANC15 PPK
RUN 220 ID MS 37 WEIGHT 1.763

SIGNALS

CARBON 56.66%	ZR 5007
HYDROGEN 4.76%	NR 4809
NITROGEN 18.03%	CR 26509
	HR 20565

FILL TIME 39 SECONDS

DATE 17 10 14 TIME 13 32 43 OPERATOR ID ANC15 PPK
RUN 221 ID MS 38 WEIGHT 1.909

SIGNALS

CARBON 59.16%	ZR 4046
HYDROGEN 6.15%	NR 5782
NITROGEN 19.72%	CR 20569
	HR 22820

FILL TIME 39 SECONDS

DATE 17 10 14 TIME 13 34 20 OPERATOR ID ANC15 PPK
RUN 222 ID MS 39 WEIGHT 1.944

SIGNALS

CARBON 56.76%	ZR 4057
HYDROGEN 4.47%	NR 5922
NITROGEN 18.58%	CR 20850
	HR 28027

FILL TIME 39 SECONDS

DATE 17 10 14 TIME 13 36 10 OPERATOR ID ANC15 PPK
RUN 223 ID MS 40 WEIGHT 1.904

SIGNALS

CARBON 58.27%	ZR 4006
HYDROGEN 5.88%	NR 6134
NITROGEN 20.39%	CR 20946
	HR 24047

FILL TIME 39 SECONDS

DATE 17 10 14 TIME 13 38 10 OPERATOR ID ANC15 PPK
RUN 224 ID MS 41 WEIGHT 1.882

SIGNALS

CARBON 53.17%	ZR 4035
HYDROGEN 4.49%	NR 5829
NITROGEN 16.35%	CR 21309
	HR 27550

FILL TIME 39 SECONDS

DATE 17 10 14 TIME 13 40 39 OPERATOR ID ANC15 PPK
RUN 225 ID MS 42 WEIGHT 1.850

SIGNALS

CARBON 55.53%	ZR 4509
HYDROGEN 5.96%	NR 5905
NITROGEN 17.99%	CR 21906
	HR 29560

FILL TIME 39 SECONDS