

TLD RESULTS FROM THE RECENT ICCHIBAN EXPERIMENTS

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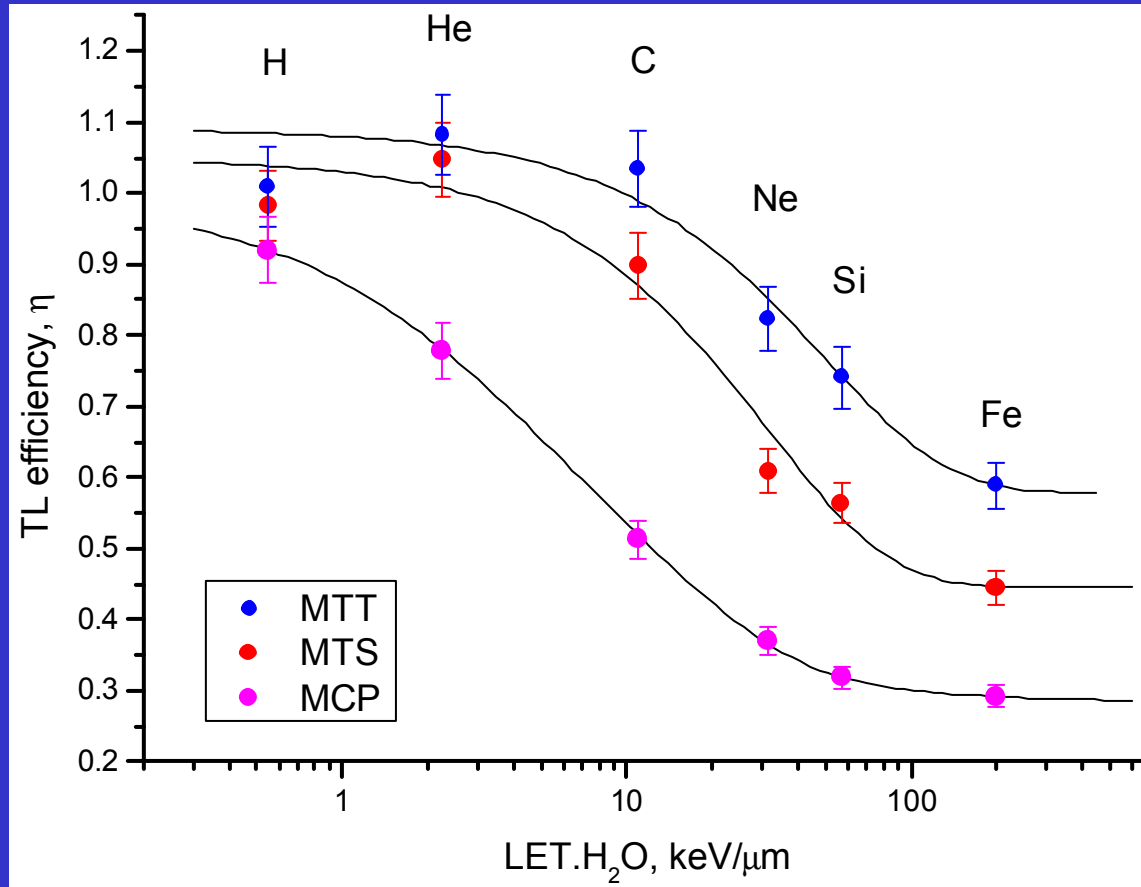
Three types of TLDs

identical with these used within the MATROSHKA

- | | | |
|---|--------------------------|--------------|
| 1. standard | ${}^7\text{LiF:Mg,Ti}$ | MTS-7 |
| 2. high-sensitive | ${}^7\text{LiF:Mg,Cu,P}$ | MCP-7 |
| 3. newly developed
with increased
high-LET response | ${}^7\text{LiF:Mg,Ti}$ | MTT-7 |

PREVIOUS RESULTS ICCHIBAN 2 & 4

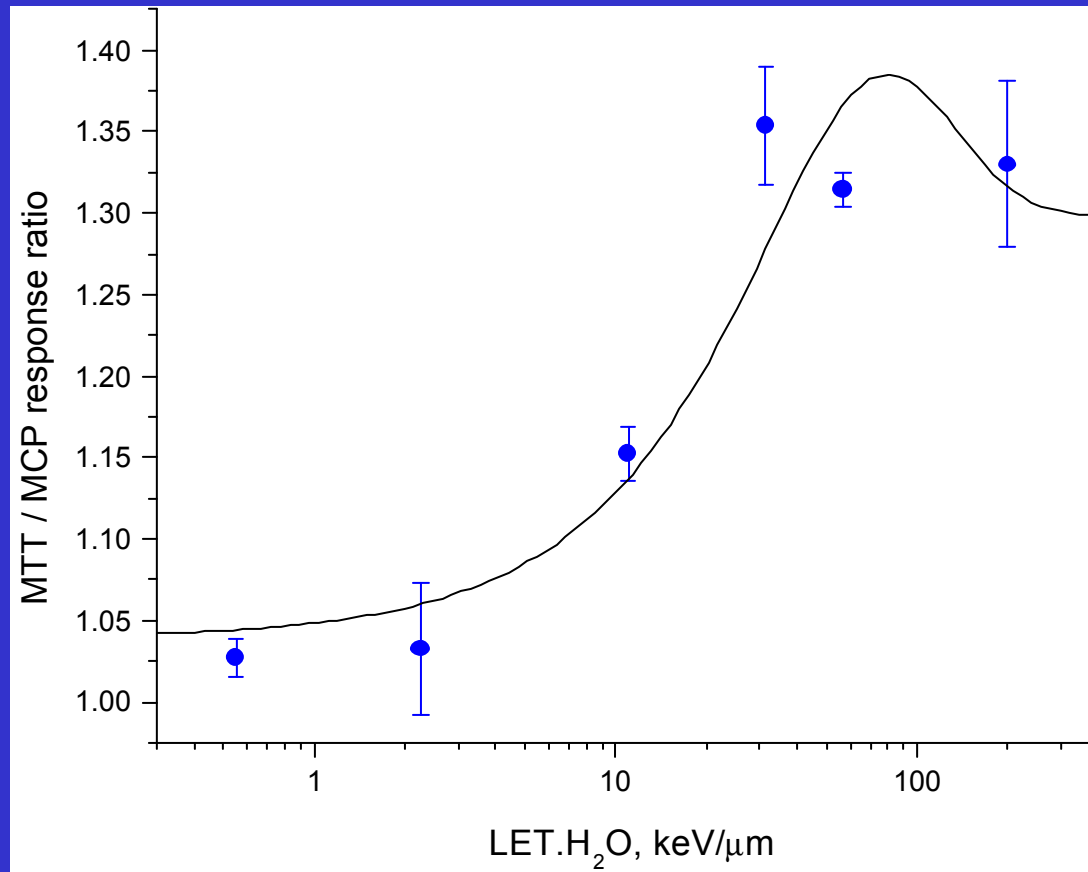
TLD RELATIVE EFFICIENCY



PREVIOUS RESULTS

ICCHIBAN 2 & 4

TLD RESPONSE RATIO



PROTON ICCHIBAN - LOMA LINDA

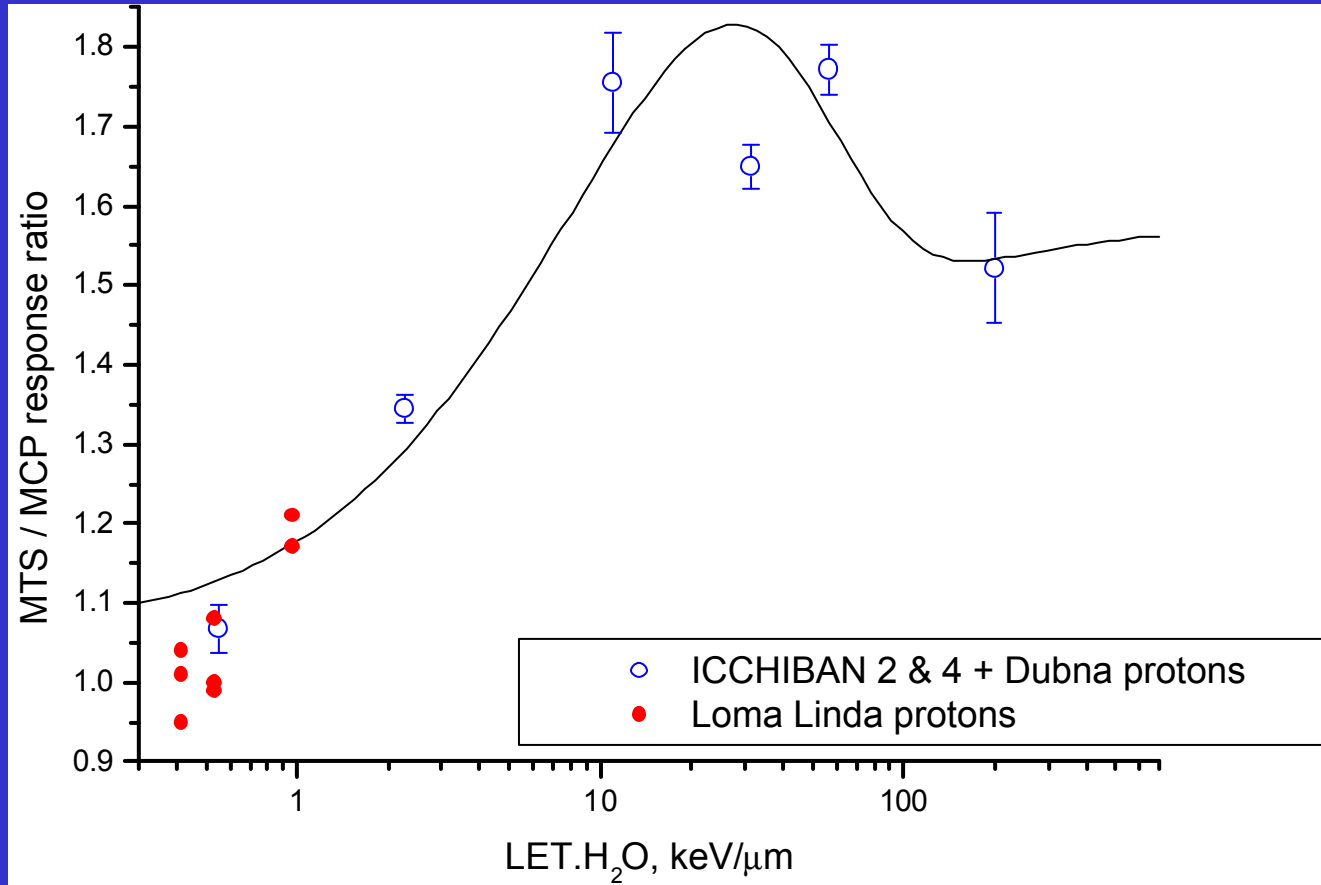
Exposure	Doses in mGy		
	MTS-7	MTT-7	MCP-7
70 MeV #1	7.1	7.3	6.1
70 MeV #2	65.8	67.1	56.9
70 MeV #3	130.2	134.0	112.3
155 MeV #1	26.7	26.3	26.2
155 MeV #2	64.3	63.5	62.0
155 MeV #3	313.3	322.7	300.3
230 MeV #1	150.9	153.1	144.5
230 MeV #2	564.1	580.4	533.8
230 MeV #3	17.1	17.0	17.0
SPE #1	351.4	373.6	266.8
SPE #2	167.2	177.1	132.0

PROTON ICCHIBAN - LOMA LINDA

Exposure	Doses in mGy			
	MTS-7	MTT-7	MCP-7	Eril Research TLD-700
70 MeV #1	7.1	7.3	6.1	7.29
70 MeV #2	65.8	67.1	56.9	65.8
70 MeV #3	130.2	134.0	112.3	131
155 MeV #1	26.7	26.3	26.2	27.5
155 MeV #2	64.3	63.5	62.0	64.1
155 MeV #3	313.3	322.7	300.3	320
230 MeV #1	150.9	153.1	144.5	127.3
230 MeV #2	564.1	580.4	533.8	497
230 MeV #3	17.1	17.0	17.0	13.9
SPE #1	351.4	373.6	266.8	322
SPE #2	167.2	177.1	132.0	153

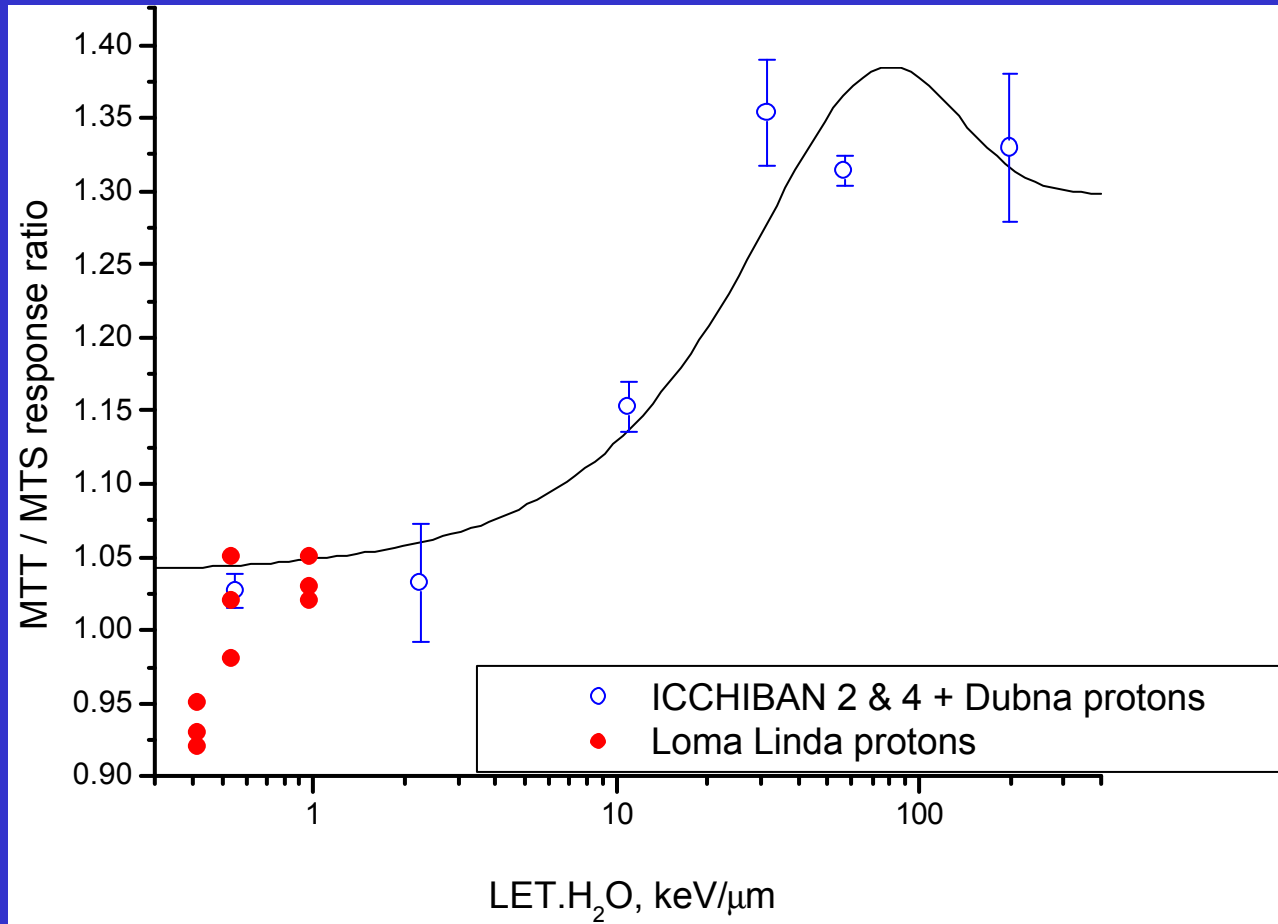
PROTON ICCHIBAN - LOMA LINDA

TLD RESPONSE RATIO



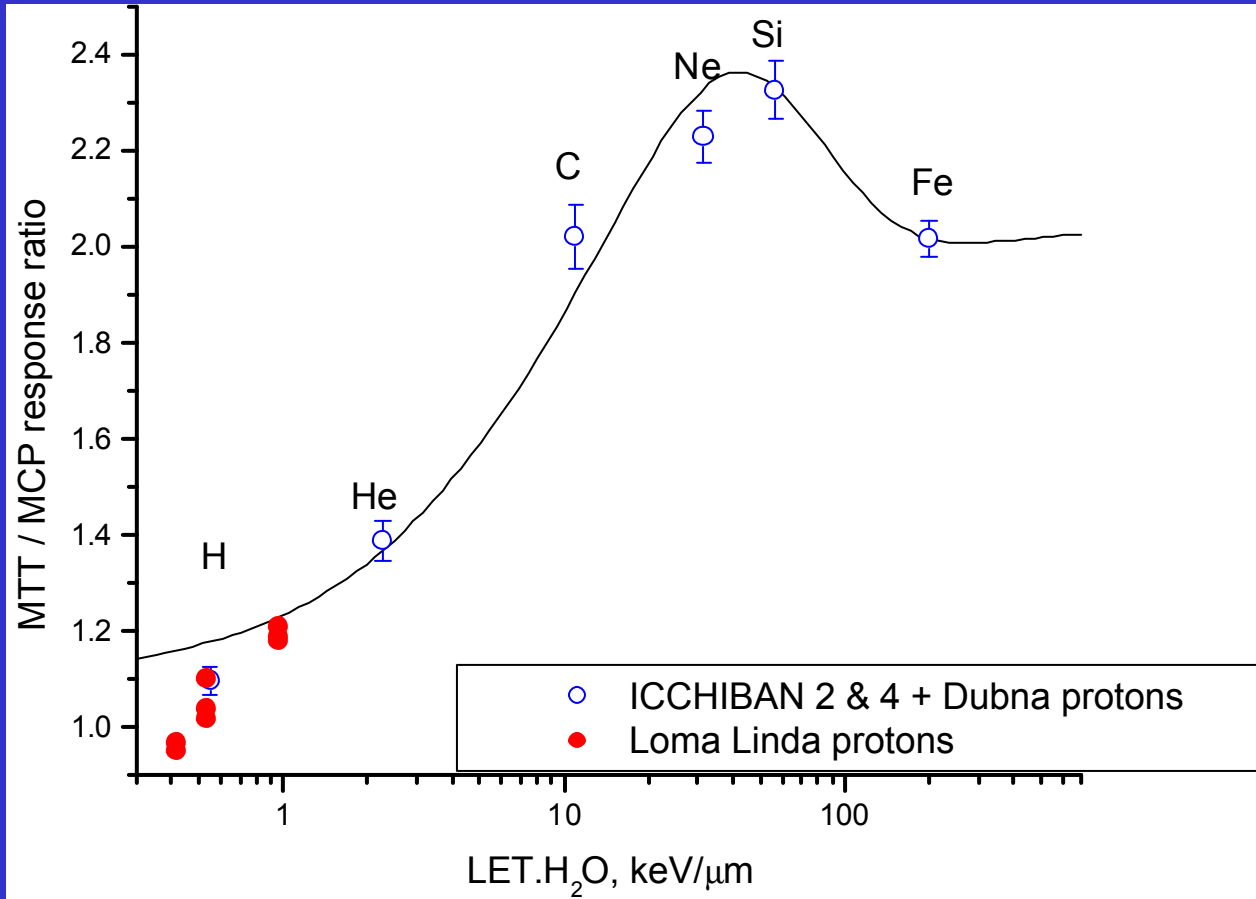
PROTON ICCHIBAN - LOMA LINDA

TLD RESPONSE RATIO



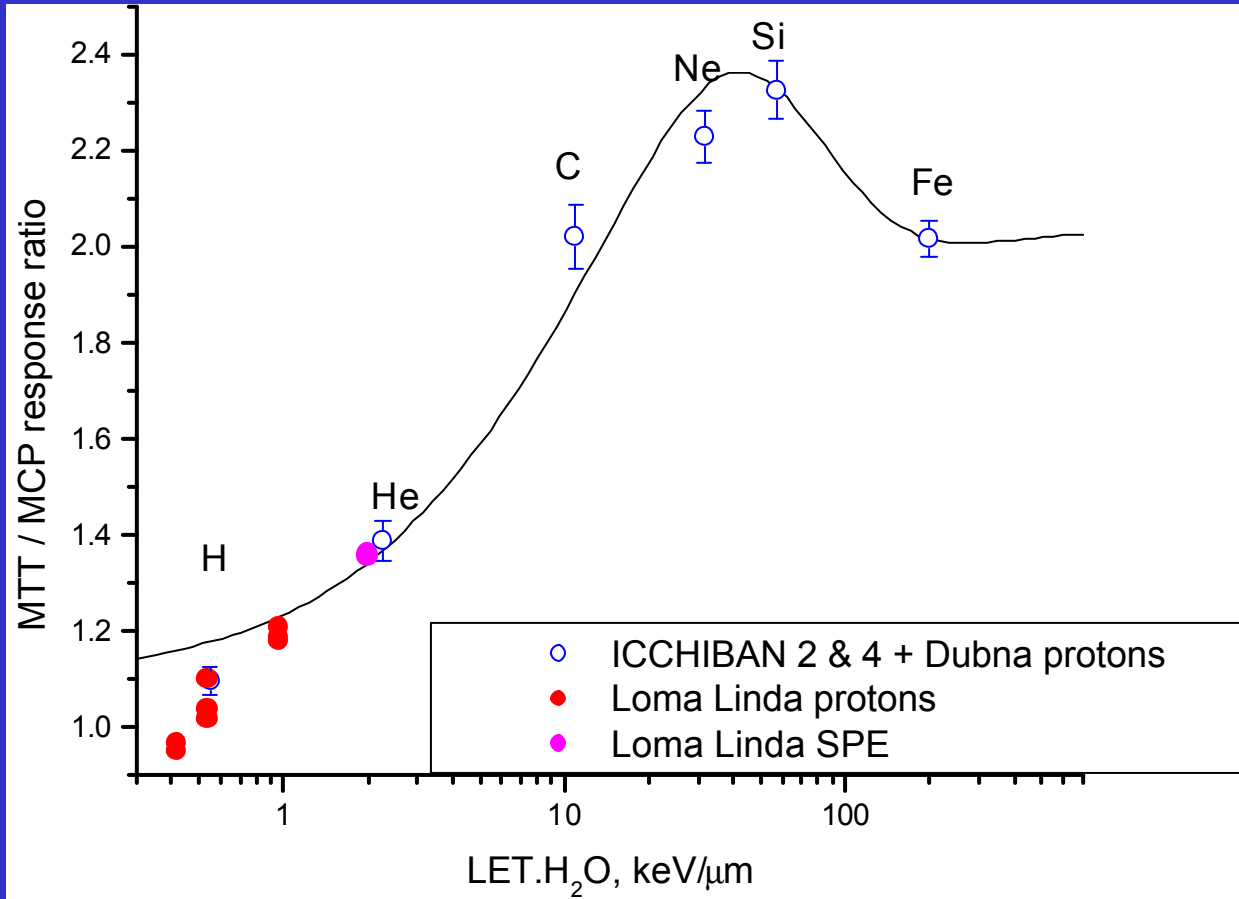
PROTON ICCHIBAN - LOMA LINDA

TLD RESPONSE RATIO



PROTON ICCHIBAN - LOMA LINDA

TLD RESPONSE RATIO

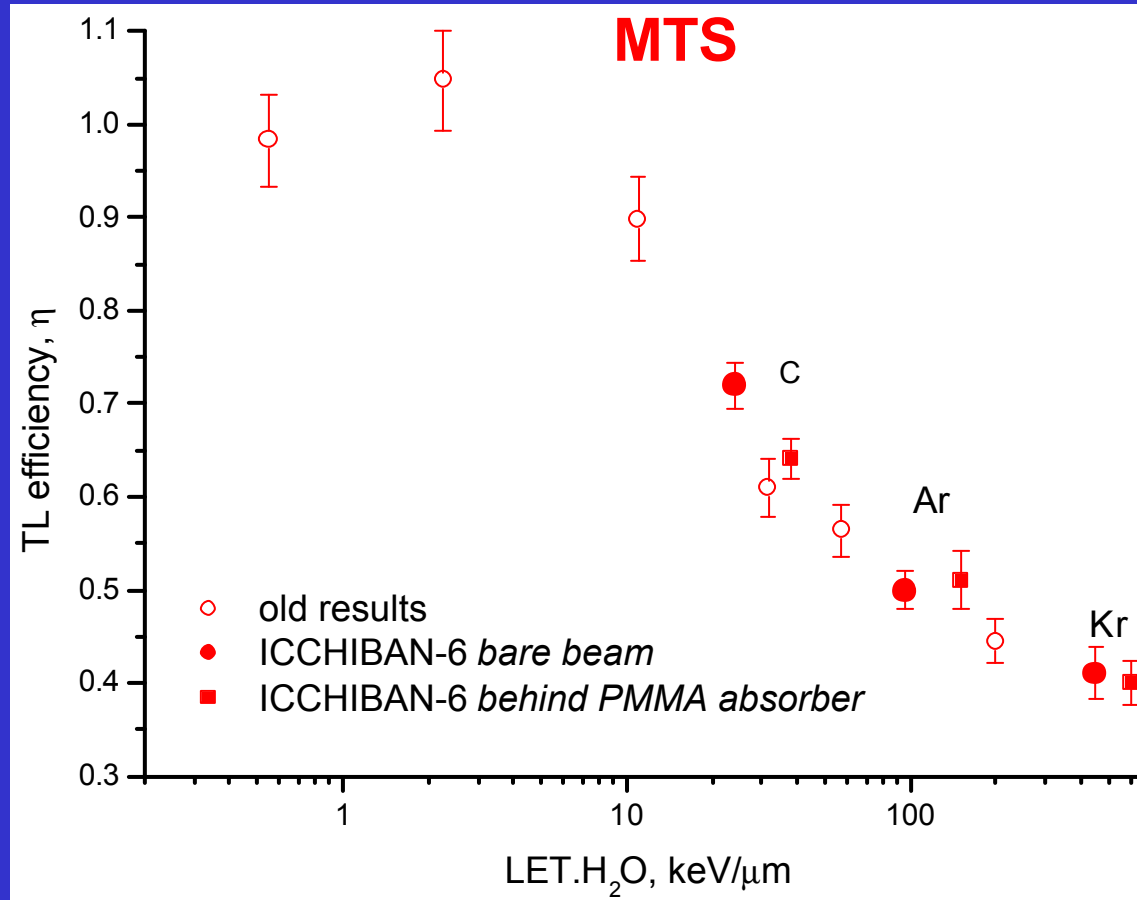


ICCHIBAN - 6

Ion	Energy, MeV/n	LET, keV/ μm
^{12}C	110	24.1
$^{12}\text{C} + \text{PMMA}$	61.5	37.9
^{40}Ar	459.3	95.8
$^{40}\text{Ar} + \text{PMMA}$	201	151
^{84}Kr	313.1	448.4
$^{84}\text{Kr} + \text{PMMA}$	193	595.7

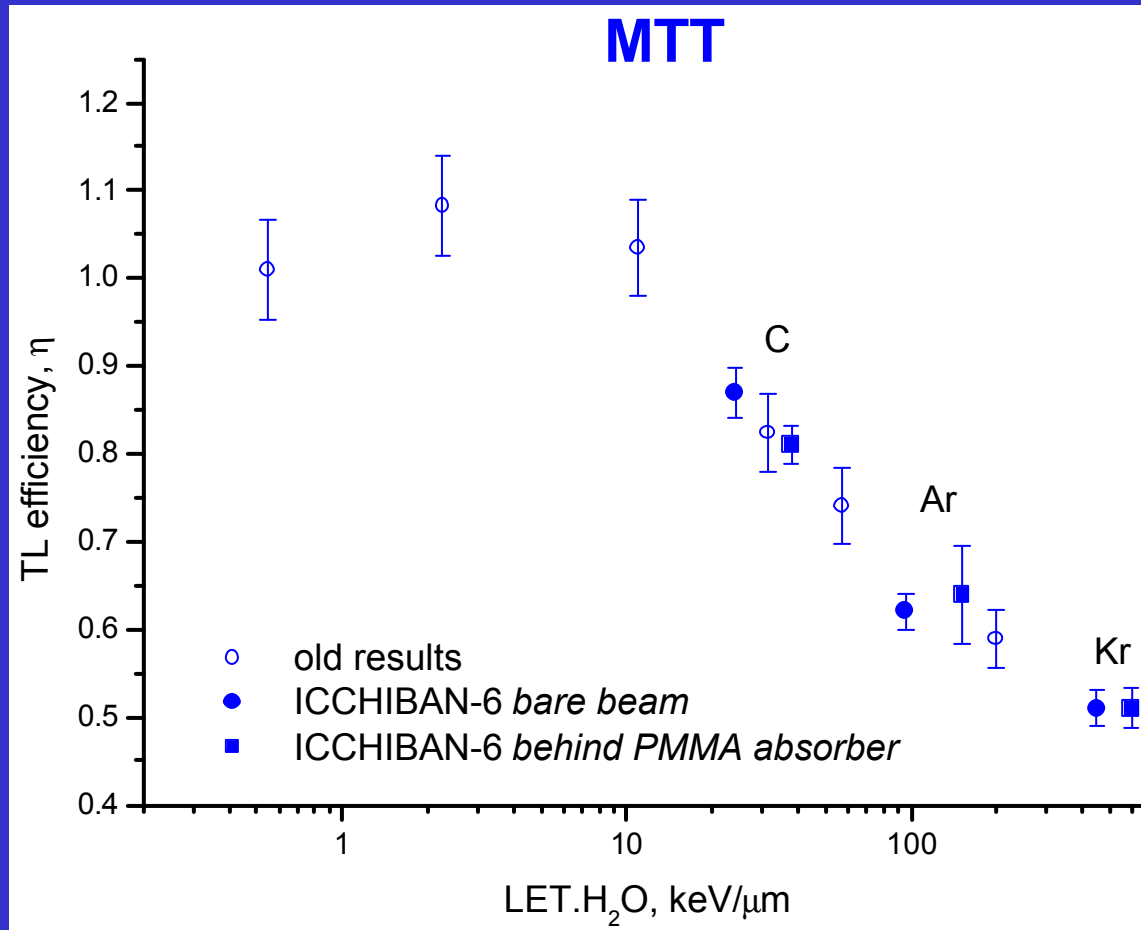
ICCHIBAN - 6

TLD RELATIVE EFFICIENCY



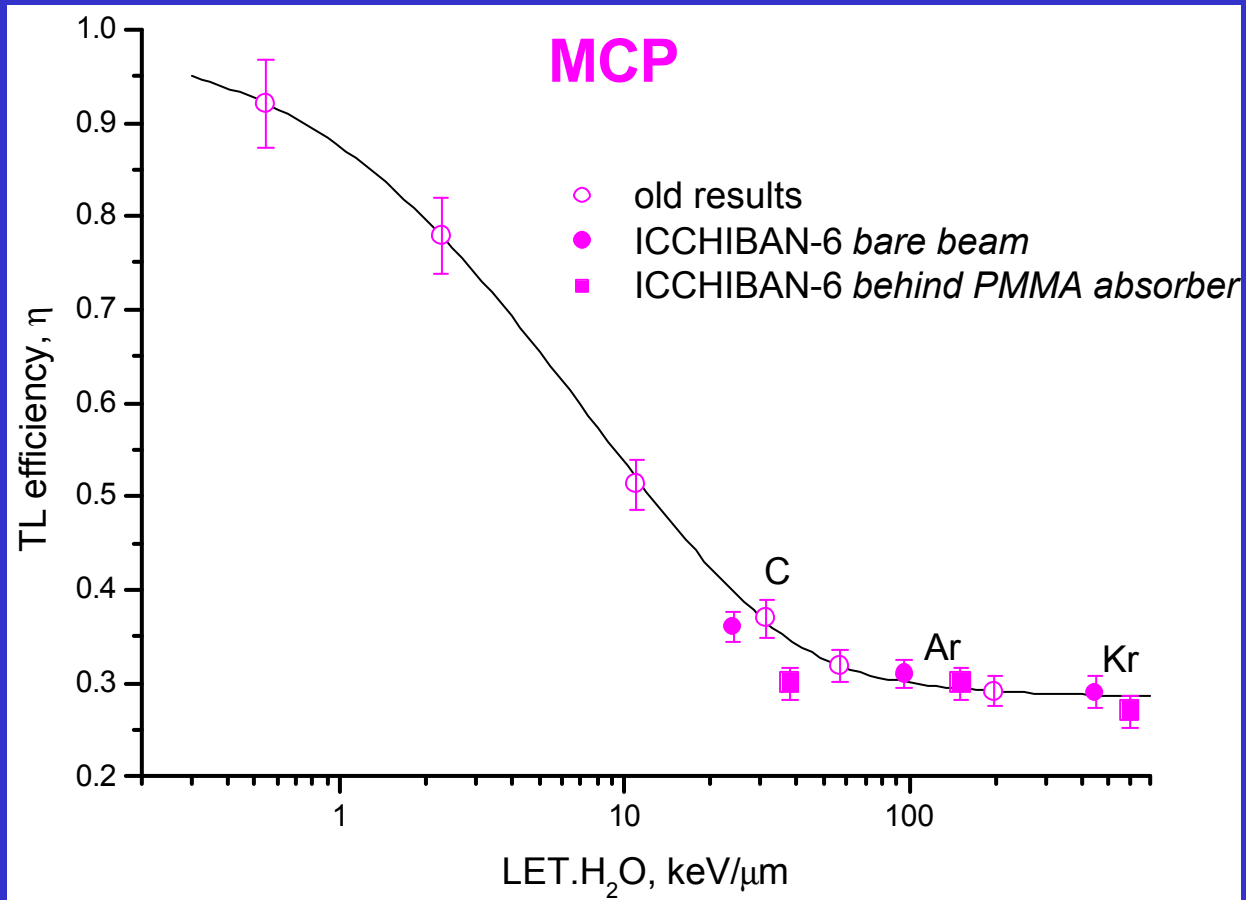
ICCHIBAN - 6

TLD RELATIVE EFFICIENCY



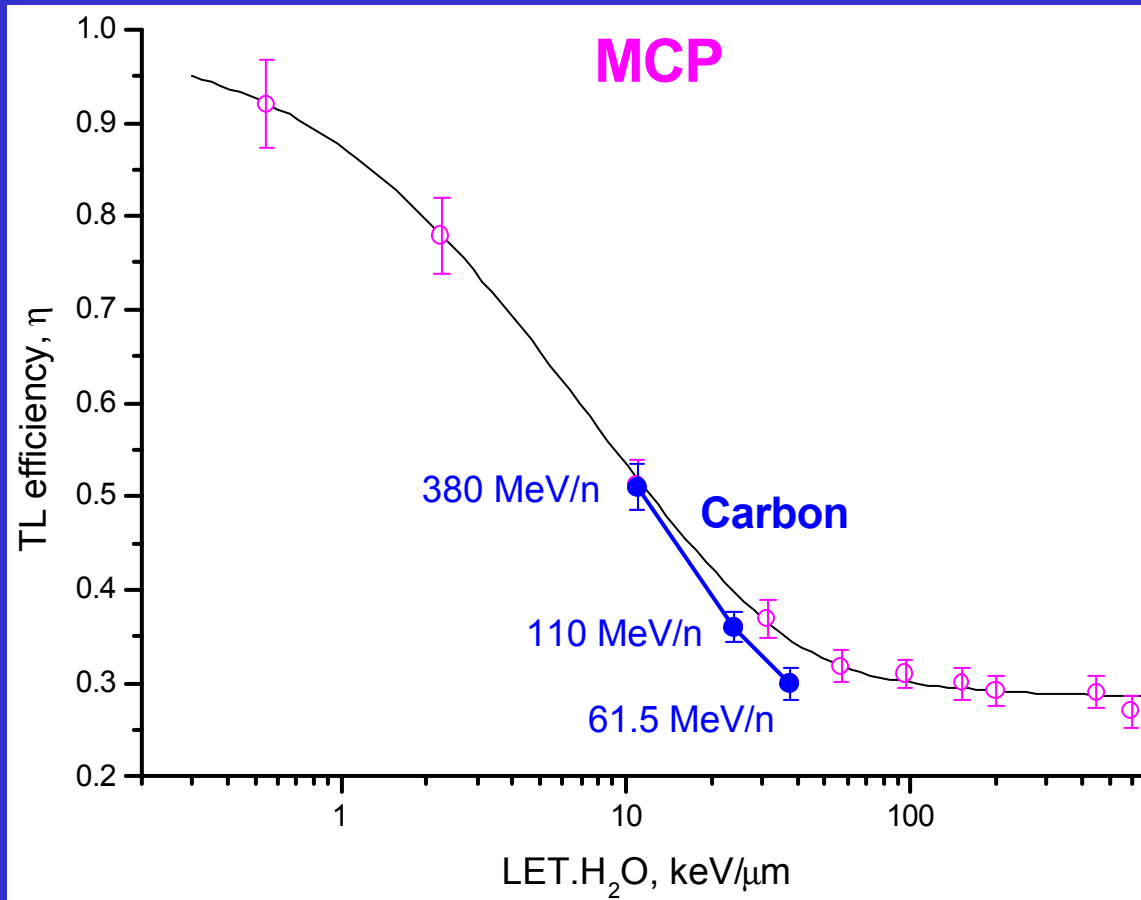
ICCHIBAN - 6

TLD RELATIVE EFFICIENCY



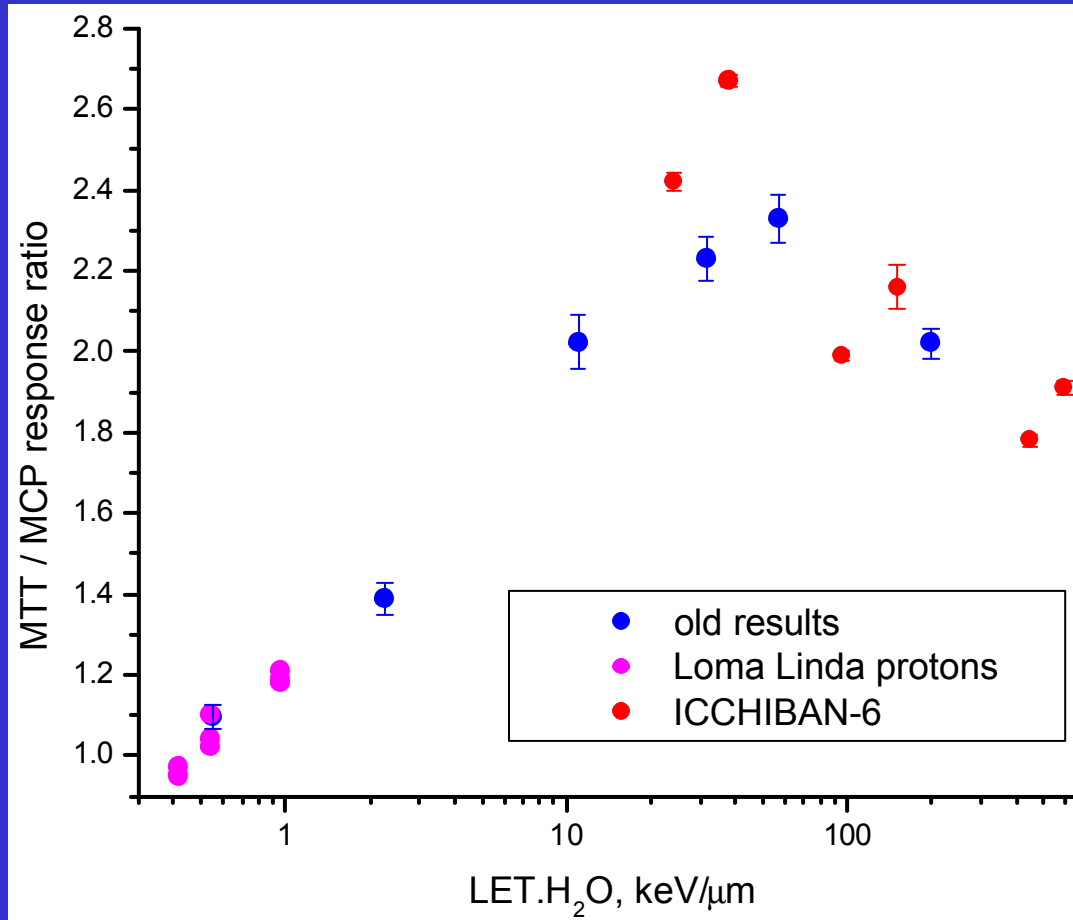
ICCHIBAN - 6

TLD RELATIVE EFFICIENCY



ICCHIBAN - 6

TLD RESPONSE RATIO



ICCHIBAN - 6

Blind exposures

results without any corrections

	MTS-7	MTT-7	MCP-7
blind 1	96.1	98.4	104.3
blind 2	94.3	96.6	100.4
blind 3	98.0	99.4	105.0
blind 4	86.5	91.8	80.0
blind 5	99.4	99.8	105.6
blind 6	159.4	158.2	136.7