Experiment Title:

Magnetic field measuarement on the magnets

Prefix. Experiment Code:

MgFd.TII

Researcher(s):

Mabel Juliana Noguera Contreras	JN
Diego Felipe Martinez	DM

Starting Date: lunes, 29 de abril de 2019
Finish Date: lunes, 29 de abril de 2019

Goal and Observations:
Estimate the magnetic field of the available neodymium magnets with a teslameter from the phisics lab.

Follow up of the experimentation:

Experiment Code	Description	Starting Date	Finish Date	Location	Result
MgFd.TII-JN-Exp-1	Magnetic fields measurement of the magnets	29/04/2019	30/04/2019	Phisics Laboratory	Good

Sample numbering/codification:

Prefix. Code	Description	Units	Location
1/4Mag	Magnetic field measurement of the Magnets 1/4	mT	Lab Book
2/4Mag	Magnetic field measurement of the Magnets 2/4	mT	Lab Book
3/4Mag	Magnetic field measurement of the Magnets 3/4	mT	Lab Book
4/4Mag	Magnetic field measurement of the Magnets 4/4	mT	Lab Book

List of Reagents and/or materials:

CAS N°	Name of Reagent or material	Provider	Lot number	Qty.	Units	Location

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Laboratory Data:
Phisics Laboratory

Description of the experiment:
Magnetic fields measurement of the magnets 1/4, 2/4, 3/4 and 4/4 with a Teslameter (Teslameter Error: 0,0010 mT | Tare: 0,0712 mT).

Samples generated:

Sample Code	Description	Qty.	Units	Location
1/4Mag-1	Magnetic field measurement of the Magnets 1/4 at 1 mT	1,00	mT	
1/4Mag-2	Magnetic field measurement of the Magnets 1/4 at 2 mT	2,00	mT	
1/4Mag-3	Magnetic field measurement of the Magnets 1/4 at 3 mT	3,00	mT	
1/4Mag-4	Magnetic field measurement of the Magnets 1/4 at 4 mT	4,00	mT	
2/4Mag-5	Magnetic field measurement of the Magnets 2/4 at 5 mT	5,00	mT	
2/4Mag-1	Magnetic field measurement of the Magnets 2/4 at 1 mT	1,00	mT	
2/4Mag-2	Magnetic field measurement of the Magnets 2/4 at 2 mT	2,00	mT	
2/4Mag-3	Magnetic field measurement of the Magnets 2/4 at 3 mT	3,00	mT	
2/4Mag-4	Magnetic field measurement of the Magnets 2/4 at 4 mT	4,00	mT	
3/4Mag-1	Magnetic field measurement of the Magnets 3/4 at 1 mT	1,00	mT	
3/4Mag-2	Magnetic field measurement of the Magnets 3/4 at 2 mT	2,00	mT	
4/4Mag-1A	Magnetic field measurement of the Magnets 4/4 at 1 mT side A	1,00	mT	
4/4Mag-2A	Magnetic field measurement of the Magnets 4/4 at 2 mT side A	2,00	mT	
4/4Mag-1B	Magnetic field measurement of the Magnets 4/4 at 1 mT side B	1,00	mT	
4/4Mag-2B	Magnetic field measurement of the Magnets 4/4 at 2 mT side B	2,00	mT	

Measurement:

Date	Type	Sample	Replica 1	Replica 2	Replica 3	Replica 4	Replica 5	Average	Units
29/04/2019	Magnetic Field - Teslameter	1/4Mag-1	255,26	261,28	263,67	261,87	262,02	260,82	mT
29/04/2019	Magnetic Field - Teslameter	1/4Mag-2	265,04	269,01	270,25	269,57	270,98	268,97	mT
29/04/2019	Magnetic Field - Teslameter	1/4Mag-3	257,52	259,22	259,67	259,12	260,64	259,234	mT

29/04/2019	Magnetic Field - Teslameter	1/4Mag-4	262,56	254,51	274,67	280,65	286,12	271,702	mT
29/04/2019	Magnetic Field - Teslameter	2/4Mag-5	212,85	211,06	212,56	210,56	208,4	211,086	mT
29/04/2019	Magnetic Field - Teslameter	2/4Mag-1	352,09	352,24	352,39	347,22	348,34	350,456	mT
29/04/2019	Magnetic Field - Teslameter	2/4Mag-2	264,88	278,65	256,94	295,89	285,67	276,406	mT
29/04/2019	Magnetic Field - Teslameter	2/4Mag-3	285,7	277,56	278,36	281,56	277,64	280,164	mT
29/04/2019	Magnetic Field - Teslameter	2/4Mag-4	281,83	283,25	280,62	282,89	275,34	280,786	mT
29/04/2019	Magnetic Field - Teslameter	3/4Mag-1	363,43	362,41	363,48	365,75	364,56	363,926	mT
29/04/2019	Magnetic Field - Teslameter	3/4Mag-2	379,42	379,63	379,66	379,64	380,02	379,674	mT
29/04/2019	Magnetic Field - Teslameter	4/4Mag-1A	352,47	351,72	345,79	344,22	343,13	347,466	mT
29/04/2019	Magnetic Field - Teslameter	4/4Mag-2A	359,24	358,82	359,14	358,70	357,76	358,732	mT
29/04/2019	Magnetic Field - Teslameter	4/4Mag-1B	328,52	357,74	345,72	349,26	342,27	344,702	mT
29/04/2019	Magnetic Field - Teslameter	4/4Mag-2B	346,67	345,95	347,16	349,13	345,28	346,838	mT

Summary of results:

The 4/4 Magnets have the exact geometric size of the microreactors manufactured, this is why this magnets were chosen (Average mT: 349,43)

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Description of data analysis:
Magnetic field data analysis for the 4/4 magnet chosen for the treatments.

Calculation and/or formula:

Date	Sample	Replica 1	Replica 2	Replica 3	Replica 4	Replica 5	Average	Min. error	Max. Error	Units
29/04/2019	4/4Mag-1A	352,47	351,72	345,79	344,22	343,13	347,47	4,34	5,00	mT
29/04/2019	4/4Mag-2A	359,24	358,82	359,14	358,70	357,76	358,73	0,97	0,51	mT
29/04/2019	4/4Mag-1B	328,52	357,74	345,72	349,26	342,27	344,70	16,18	13,04	mT
29/04/2019	4/4Mag-2B	346,67	345,95	347,16	349,13	345,28	346,84	1,56	2,29	mT
	4/4Mag-Final						349,43	5,76	5,21	mT
	4/4Mag-Desv.Final						6,31			