



5th ICAMST 2017

The 5th International Conference
on Advanced Materials Science
and Technology 2017

Dear Eko Hadi Sujiono
(Universitas Negeri Makassar, Makassar 90224. Indonesia),

It is our pleasure to inform you that your paper #1-065 entitled "The Effect of Calcination Temperature Variation on Crystal Structure and Morphology of NdFeO₃ Oxide Materials Synthesized by Solid Reaction Method" for The International Conference on Advanced Materials Science and Technology 2017 (ICAMST2017) has been ACCEPTED for ORAL PRESENTATION on the conference.

Please be reminded, the full paper must be submitted through our system at <http://kosatem.org/epaper/> by 2017-09-08, following the template [here](#). The length of full paper must be 5 pages. It is also noted that there will be no presentation without full paper submission.

Thank you very much for contributing to the ICAMST2017. We are looking forward to welcoming you to the conference on September 19th – 20th, 2017 in Makassar.

For more information please contact us at email: icamst2017@kosatem.org. or WA number 085728152871

Kind regards,
The Conference Chairman



Prof. Dr. Eko Hadi Sujiono, M.Si.

Secretariat:

Laboratory of Material Physics
Department of Physics
Faculty of Mathematics and Sciences
Universitas Negeri Makassar
5th Floor, Science Square, Room 522
Makassar, Indonesia

Website : <http://kosatem.org/icamst>
Email : icamst2017@kosatem.org
Mobile Phone : +6281 342 345 680
+6281 341 735 386
+6281 342 210 736



The 5th International Conference on Advanced Materials Science and Technology **2017**

BOOK OF ABSTRACTS

September 19-20, 2017

Makassar, Indonesia

Abstract Book

The 5th International Conference on Advanced Materials Science and Technology (ICAMST) 2017

**September 19-20, 2017
Makassar, Indonesia**

Konsorsium Sains Teknologi Material

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Preface

The Consortium of Materials Science and Technology (KoSaTeM) and Materials Research Society of Indonesia (MRS-Id) in collaboration with HFI and HKI proudly present The 5th International Conference on Advanced Materials Science and Technology (ICAMST) on 19th-20th September 2017 at the Grand Clarion Hotel & Convention Centre, Makassar, Indonesia.

Reflecting back on the four previous ICAMST 2013-2016, which has annually been held in UGM, UNS, UNNES, and UM, and had been attended by about 300 participants. Now in 5th ICAMST, the total participants are 250, 265 authors with 108 papers. The 5th ICAMST 2017 will address among the many important issues and topics in materials sciences and technology. The topics are: **Nano Science and Technology, Minerals and Complex Materials, Functional Materials, Synthesis and Characterization Techniques, Theoretical and Analysis in Materials, Low-Temperature Physics, and Exotic Materials**, which all the submitted abstract collected in this booklet.

In this 5th ICAMST 2017 involved high level scientists as plenary speakers. They are: Prof. Dr. Seiichi Miyazaki (Nagoya University, Japan), Assoc. Prof. Dr. Ariando (National University of Singapore, Singapore), Prof. Dr. Mohamad Deraman (Universiti Kebangsaan Malaysia, Malaysia) and Assoc. Prof. Dr. Risa Suryana (Sebelas Maret University, Indonesia). **The 5th International Conference on Advanced Materials Science and Technology (ICAMST)** included invited presentations, and contributed presentations. The conference aims to help participants to develop a more in-depth understanding of recent developments in the materials sciences and technology while providing a forum for analysis and formulation of policy recommendations, it is also expected that from this conference can conduct a good collaboration research among the participants who come from all over the universities around the globe.

In the end, upon the implementation of this conference and the publication of this booklet, on behalf of the committee, our gratitude is sent to plenary speakers, speakers, participants, who have given their kind contribution in order to support this conference. Thank you and have a marvelous stay in Makassar, The City of Anging Mamiri.

5th ICAMST Chairman

Prof. Eko Hadi Sujiono

Parallel Session

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[5-065]

The Effect of Calcination Temperature Variation on Crystal Structure and Morphology of NdFeO₃ Oxide Materials Synthesized by Solid Reaction Method

M. Yusriadi Dahlan and E. H. Sujiono^{*)}

Laboratory of Materials Physics, Department of Physics, *Universitas Negeri Makassar*, Makassar 90224, Indonesia.

^{*)} Corresponding author: e.h.sujiono@unm.ac.id

Abstract. NdFeO₃ is one of oxide alloys that can be used as a raw material for gas sensor application. In this study, Nd₂O₃ (99.99%-*Strem Chemicals*) and Fe₂O₃ (99.99%-*Sigma Aldrich*) were used as precursors to synthesize NdFeO₃ using solid state reaction method by varying calcination temperature of 750°C, 850°C, and 950°C, respectively for 6 hours. All of NdFeO samples were characterized using scanning electron microscope (SEM) and x-ray diffraction (XRD) to identify morphology and phase that contains. The results show that all of the samples formed major phase is NdFeO₃ and minor phase of Nd₂O₃ and have homogenous morphology with estimating grain size value is 0.2 μm. The value of FWHM and the crystal size of NdFeO orthorhombic phase was obtained for each sample are 0.22° and 372 nm. The dominant peak of *hkl* (121) is an indicating that material has potential application as a gas sensor as has reported elsewhere.

Keywords : FWHM, NdFeO, Orthorhombic Phase, Solid state reaction, SEM, XRD

Authors

No	Nama	email
1	A. Yusmar	ade.yusmar@mail.ugm.ac.id
2	A. K. Agustina	ayu.kurnia.a@mail.ugm.ac.id
3	A.D.C. Putri	alfadinarcallista02@gmail.com
4	A.P. Bayuseno	apbayuseno@gmail.com
5	Abdulloh Fuad	abdulloh.fuad.fmipa@um.ac.id
6	Aditya Rianjanu	aditya.rianjanu@mail.ugm.ac.id
7	Agung Imaduddin	agung@gmail.com
8	Ahmad Fauzi	fwzy89@gmail.com
9	Ahmad Kusumaatmaja	ahmad_k@ugm.ac.id
10	Ahmad Marzuki	amarzuki@mipa.uns.ac.id
11	Ahmad taufik	ahmad.taufik@um.ac.id
12	Ahmad Taufiq	ahmad.taufiq.fmipa@um.ac.id
13	Ahzab Sandi	sandyunm@gmail.com
14	Akfiny Hasdi Aimon	Fini.Aimon@gmail.com
15	akmal zulfi	akmal.zulfi@yahoo.com
16	Alimin	alkimi_unhalu@yahoo.com
17	Allif Rosyidy Hilmi	allif.hilmi@gmail.com
18	Anawati Anawati	anawati@sci.ui.ac.id
19	Andi Aladin	addin@pascaumi.ac.id
20	Andi Indra Wulan Sari Ramadani	wulanramadhan.physics@yahoo.com
21	andika widya pramono	andika_pram@yahoo.com
22	Anggreta Damayanti	anggreanggretadamay@gmail.com
23	Ari Handono Ramelan	aramelan@mipa.uns.ac.id
24	Arie Listyarini	me.aurora.2646@gmail.com
25	Arif Hidayat	arif.hidayat.fmipa@um.ac.id
26	Arni Al Hikmah Putri	arniaputri13@gmail.com
27	Arum Patriati	
28	Askar Triwiyanto	askartri@president.ac.id
29	Asria	asriachemis@gmail.com
30	Asti Sawitri	sawitriasti@gmail.com
31	Azwar Manaf	azwar@ui.ac.id
32	Baharuddin Hamzah	hamzahhb@yahoo.com
33	Banu Nursanni	bnursanni@ymail.com
34	Bebah W. Nuryadin	bebehwahid102@uinsgd.ac.id
35	bintoro siswayanti	bintoro.siswayanti@gmail.com
36	Brian Yulianto	brian@tf.itb.ac.id
37	Budhy Kurniawan	bkuru@fisika.ui.ac.id
38	Budi Harianto	budi.alhabsy@gmail.com

39	Budi Mulyanti	bmulyanti@upi.edu
40	Bunda Amalia	bundy.amalia@gmail.com
41	Candra Kurniawan	
42	Cuk Imawan	cuk.imawan@sci.ui.ac.id
43	D Fasquelle	
44	D. R. Munazat	dicky.rezki@sci.ui.ac.id
45	D.J. Djoko Herry Santjojo	dsantjojo@ub.ac.id
46	Dani Gustaman Syarif	danigus@batan.go.id
47	Darmawati Darwis	darmadarwis@yahoo.com
48	Darsikin	darsikinfis@gmail.com
49	Daud Sabilur Razaq	cakalang.99@gmail.com
50	Dedi Simbolon	
51	dedy Farhamza	
52	Dewi Sartika	dewi.sartika@unsulbar.ac.id
53	Dhewa Edikresnha	dhewa.edikresnha@gmail.com
54	Diah Ayu Ermawati	diahae017@gmail.com
55	Dian Ayu Setyorini	dianayusetyorini@mail.chem.itb.ac.id
56	Dicky Rezky Munazat	dicky.rezky@sci.ui.ac.id
57	Djoko Hartanto	djokohar@its.ac.id
58	Djoko Hartanto	djokohar023@gmail.com
59	Djuhana	
60	Dwika Andjani	dwikaandjani93@gmail.com
61	Dwipayogo Wibowo	dwipayogowibowo@yahoo.com
62	E. Jobiliong	eric.jobiliong@uph.edu
63	E. Suharyadi	esuharyadi@ugm.ac.id
64	Edy Giri Rachman Putra	
65	Eko Agus Suyono	eko_suyono@ugm.ac.id
66	Eko Arief Setiadi	eko.arief.setiadi@lipi.go.id
67	Eko Arif Setiadi	
68	Eko Hadi Sujiono	e.h.sujiono@unm.ac.id
69	Elisa Sesa	
70	Eny Latifah	eny.latifah.fmipa@um.ac.id
71	Erna Erviana	ernaerviana89@yahoo.co.id
72	Euis Sustini	euis@fi.itb.ac.id
73	Ezra Nabila	
74	F Nurosyid	
75	Fardiman Ruli	fardi2020@gmail.com
76	Fatimah Arofiati Noor	fatimah@fi.itb.ac.id
77	Febrilian Dwi Laksono	febrilian.dwi.l@mail.ugm.ac.id
78	Fera Nopviana	feranopviana@gmail.com
79	Ferry Iskandar	ferry@fi.itb.ac.id

80	Fitri Nur Aini	fitrinurai@gmail.com
81	Fitri Suryani Arsyad	fsarsyad90@gmail.com
82	Fitri Syamsiyah	fitrisyamsiyahbiounesa@gmail.com
83	Franciska Pramuji Lestari	franciskapramuji@gmail.com
84	Frida Ulfah Ermawati	frida.ermawati@unesa.ac.id
85	G. Aristatil	arisamutha@gmail.com
86	G. Elsandika	g.elsandika@gmail.com
87	Ghorby Al Fauzan	ghorby.al.f@mail.ugm.ac.id
88	Goib Wiranto	gwiranto@gmail.com
89	H. Husain	husain.physics@unm.ac.id
90	Hamzah Fansuri	h.fansuri@chem.its.ac.id
91	Hari Wisodo	hari.wisodo.fmipa@um.ac.id
92	hariyati	hariyati@mat-eng.its.ac.id
93	Harry Ramza	ramza.harry@gmail.com
94	Hartatiek	hartatiek.fmipa@um.ac.id
95	Hasniah Aliah	hasniahaliah@uinsgd.ac.id
96	hendrik	hend027@lipi.go.id
97	Herdianto	herdianto15@ymail.com
98	Heri Kiswanto	h.kiswanto@mail.ugm.ac.id
99	heri nugraha	nugraha321@gmail.com
100	Heru Susanto	heru.susanto@undip.ac.id
101	Hikmah Hifdziyah	hikmah1501@gmail.com
102	Husni Mubarak	husnimubarak254@gmail.com
103	I Dewa Putu Hermida	idewaputu@gmail.com
104	I Wayan Dasna	idasna@um.ac.id
105	Ida Bagus Putu Wijawan	idabagus.pw@gmail.com
106	Ida Hamidah	idahamidah@upi.edu
107	Ida Sriyanti	ida_sriyanti@yahoo.com
108	Ida Sriyanti	idaunsri@gmail.com
109	Idalia	
110	Idha Royani	royaniidha@yahoo.co.id
111	Indra Noviandri	innov@chem.itb.ac.id
112	Iqbal	
113	Iqbal Aziz Romadhon	iqbalazis16@gmail.com
114	J. Jamari	J.Jamari@gmail.com
115	J. Utomo	joko.utomo@mail.ugm.ac.id
116	Januaris Pane	
117	Jojo Hidayat	jojo.hidayat@gmail.com
118	Kamaruddin Kamaruddin	kamaphisika09@gmail.com
119	Kamsul Abraha	kamsul@ugm.ac.id
120	Khairurrijal	krijal@fi.itb.ac.id

121	Kiagus Dahlan	kiagusdahlan@gmail.com
122	Kusuma Wardhani Mas'udah	masudahkusuma@gmail.com
123	Kusumandari	kndari@gmail.com
124	Kuwat Triyana	triyana@gmail.com
125	Kuwat Triyana	triyana@ugm.ac.id
126	L. Armitasari	linda.armitasari@mail.ugm.ac.id
127	L. Cahyadi	lina.cahyadi@uph.edu
128	La Agus	la_agusu@yahoo.com
129	La Ode Agus Salim	agus.123742@gmail.com
130	La Ode Ahmad	la.ode.ahmad@gmail.com
131	La Ode Kadidae	lkadidae@gmail.com
132	La Ode Ngkoimani	laodem@yahoo.com
133	Lia Harmelia	lia.harme@gmail.com
134	Lia Muliani Pranoto	liamuliani@gmail.com
135	LOAN Ramadhan	ramadhan305@gmail.
136	Lukman Noerochim	lukman@mat-eng.its.ac.id
137	lusiana	lusianand@yahoo.com
138	Lydia Anggraini	lydia.anggra@president.ac.id
139	Lydia Rohmawati, S.Si., M.Si.	lydiarohmawati@gmail.com
140	M Yuniarto	
141	M. Arief Rahmat R.	muhammad.arief15@yahoo.com
142	M. P. Izaak	maya.izaak@uph.edu
143	Mada Sanjaya WS	madasws@gmail.com
144	Madi	madi@ugm.ac.id
145	Margareta Dita Permatasari	
146	Maria Christina Prihatiningsih	
147	MARKUS DIANTORO	markus.diantoro.fmipa@um.ac.id
148	Mas Ayu Elita Hafizah	kemasayu@yahoo.com
149	Mashuri	mash@physics.its.ac.id
150	Maslihatur Rosyidah	mashliha.arrosyid@rocketmail.com
151	Maulana Soehada S	
152	Maulidiyah Maulidiyah	maulid06@yahoo.com
153	Mimin Nurul Kholifah	olifmimin@gmail.com
154	Moch. Wisnu Arif Sektiono	wisnu.affandi017@gmail.com
155	Mohammad Sulthonul Adhim	sulthonuladhim@yahoo.com
156	Muhammad Miftahul Munir	miftah@fi.itb.ac.id
157	Muhammad Miftahul Munir	mmmunir.itb@gmail.com
158	Muhammad Nurdin	mnurdin06@yahoo.com
159	Muhammad Rifqi Al Fauzan	alfauzan.rifqi@ugm.ac.id
160	Muhammad Yunus	
161	Mukhayyarotin N. R. Jauhariyah	

162	Munasir	munasir_physics@unesa.ac.id
163	Muslimin	muslimin@gmail.com
164	Musyarofah	musyarofah.wongfisika@gmail.com
165	Mutya Sandei Sahasrikirana	mutyasandeis@gmail.com
166	Mutya Sandey Sahasrikirana	mutya13@mhs.chem.its.ac.id
167	Muzammil	muzammilmtsnj@gmail.com
168	N. B. Sahara	nabilaaisyah_sahara@yahoo.com
169	N. Mani	mani@ingsman.com
170	Naila Mubarak	naila_mubarak@yahoo.com
171	Nandang Mufti	nandang.mufti.fmipa@um.ac.id
172	Nasikhudin	nasikhudin.fmipa@um.ac.id
173	Natalita Maulani Nursam	natalita.mn@gmail.com
174	Nike F. Khusnah	nike.fk@gmail.com
175	Niken Siwi Pamungkas	
176	Nonong Isdayanti	nonongkimia013@gmail.
177	Novita Wahyuni	novita.wahyuni95@gmail.com
178	Nugraha	nugraha@tf.itb.ac.id
179	Nugroho Adi	nugroho.adi.fmipa@um.ac.id
180	Nur Aini Fauziyah	aini.zierra@gmail.com
181	Nur Aisyah Humairah	nuraisyah.humairah@unsulbar.ac.id
182	Nur Aisyah Nuzulia	aisyahnuzulia@yahoo.com
183	Nur Atiyah Hafid	nuratiyah.h@gmail.com
184	Nur Azizah Putrisetya	
185	Nurdiani Zamhari	znurdiani@unimas.my
186	Nurlina	nurlina@chemistry.untan.ac.id
187	Nurnadiyah syuhada	nurnadiyahsyuhada.ns@gmail.com
188	Nurul Amalia Triyuliana	triyuliana40@gmail.com
189	Nurul Hidayat	nurul.hidayat.fmipa@um.ac.id
190	Perdamean Sebayang	sebayang.perdamean@gmail.com
191	Pina Pitriana	pina.pitriana@gmail.com
192	pius sebleku	piussebleku@yahoo.co.id
193	Prantasi Harmi Tjahjanti	prantasiharmi@umsida.ac.id
194	Prasiwi Handari Jati	prasiwihandari@gmail.com
195	Putri Luthfiana Sari	Putriluthfianasari@gmail.com
196	Putri Nur Anggraini	putr014@lipi.go.id
197	Putri Puspita Sari	putripus13@gmail.com
198	Putri Rahmawati	putri.rahma0396@gmail.com
199	Qonita Awliya Hanif	qonitaawliya@gmail.com
200	R. Aam Hamdani	hamdani_raam@yahoo.com
201	Rajab	rajab_rian@yahoo.co.id
202	Rani Deliana Panggabean	rani.d@mail.ugm.ac.id

203	Ratna Wati	ratnaqube@gmail.com
204	Rendy Muhamad Iqbal	rendiqbale@gmail.com
205	Rendy Muhamad Iqbal	rendy15@mhs.chem.its.ac.id
206	Retno Rahmawati	enorahma1982@yahoo.com
207	Rhesti Nurlina Suhanto	rhestinsuhanto@gmail.com
208	Ridha N.Ikhsani	ridha.fisika@gmail.com
209	Rieke Elviraa	rikeelvira9@gmail.com
210	Rina Kamila	rinakamila14@gmail.com
211	Risa Suryana	rsuryana@staff.uns.ac.id
212	Robeth Viktoria Manurung	rvmanurung@gmail.com
213	Roer Eka Pawinanto	roer.eka@gmail.com
214	Roza Rezeki Zulwita	
215	Rusliana Fatayati	rusliana.fatayati@mail.ugm.ac.id
216	Ryan Nur Iman	ryanfisuin14sgd@gmail.com
217	Ryfky Syariati	ryfky.syariati@gmail.com
218	S Wahyuningsih	
219	S. Hadi Suryo	sumarhs.undip@gmail.com
220	S. Karthikeyan	karthisrivi@gmail.com
221	S. Pratapa	suminar_pratapa@physics.its.ac.id
222	S. S. Silaban	sanny.silaban@uph.edu
223	S. Suasmero	suasm@its.ac.id
224	Sahrul Saehana	sahrulsaehana@gmail.com
225	Samsul Hidayat	
226	Santi Dewi Rosanti	sanderosdr@gmail.com
227	satrio herbirowo	satrio.herbirowo@gmail.com
228	Sayekti Wahyuningsih	sayekti@mipa.uns.ac.id
229	Setyawan P. Sakti	sakti@ub.ac.id
230	Shidiq Nur Hidayat	shidiq.nurhidayat@mail.ugm.ac.id
231	Sholihun	sholihun@ugm.ac.id
232	sigit dwi yudanto	sd.yudanto@gmail.com
233	Silvana Dwi Nurherdiana	silvana.dwi.n@gmail.com
234	Silvana Dwi Nurherdiana	silvana11@mhs.chem.its.ac.id
235	Silviana Simbolon	simbolonsilvi@gmail.com
236	Soerya Dewi Marlina	moerya@staff.uns.ac.id
237	Subakti	
238	subandi	subandi.fmipa@um.ac.id
239	Suci Khairani	suciagustciakhirani@gmail.com
240	Sulardjaka	sulardjaka@gmail.com
241	Suminar Pratapa	suminar.pratapa@gmail.com
242	Sunaryono	sunaryono.fmipa@um.ac.id
243	Supardianningsih	supardianningsih@mail.ugm.ac.id

244	Sutikno	smadnasri@yahoo.com
245	Suyanta	
246	Suyatman	yatman@tf.itb.ac.id
247	Syaiful Ichsan	syaiful.ichsan95@gmail.com
248	Tatas H.P Brotosudarmo	tatas.brotosudarmo@machung.ac.id
249	Tesya Komala	tesyakomala@gmail.com
250	Teuku Andi Fadly	t.andifadly82@gmail.com
251	Thamrin Azis	thamrin_azis62@yahoo.com
252	Thomas Huabert	thomas.huebert@bam.de
253	Trisna Julian	trisna.julian@mail.ugm.ac.id
254	Ulrich Banach	ulrich.banach@bam.de
255	umi nuraini	uminuraini36@gmail.com
256	Uni Novianti	uni.nofianti@mail.ugm.ac.id
257	W. A. Adi	dwisnuaa@batan.go.id
258	W. A. Adi	dwisnuaa@gmail.com
259	Wafa Sholihah	wafaslh@gmail.com
260	Wahyu Prasetyo Utomo	wahyu.pras89@gmail.com
261	Wahyu Prasetyo Utomo	wp.utomo@chem.its.ac.id
262	Wahyu Sasongko Putro	wsphidjo2gmail.com
263	Wijayanti Dwi Astuti	wijayanti.dwi.a@ugm.ac.id
264	Windri Handayani	windri.h@sci.ui.ac.id
265	Y Iriani	
266	Y. E. Gunanto	yohanes.gunanto@uph.edu
267	Yosef Rio Kristiawan	kristiawan.rio95@gmail.com
268	Yudyanto	yudyanto.fmipa@um.ac.id
269	Yulianto Agung Rezeki	yuliantoagungruns@gmail.com
270	Yusril Yusuf	yusril@ugm.ac.id
271	ZA Imam Supardi	zainularifin@unesa.ac.id
272	Zahrotul Jannah	zjannah14@gmail.com
273	Zulkarnain Jalil	zjalil@unsyiah.ac.id
274	Zuriah Sitorus	

Secretariat

Laboratory of Materials Physics, Department of Physics,
Faculty of Mathematics and Natural Sciences
Universitas Negeri Makassar
Science Square, 5th Floor, Room 522

web : <http://kosatem.org/icomst>
email : icomst2017@kosatem.org



MRS^{id}