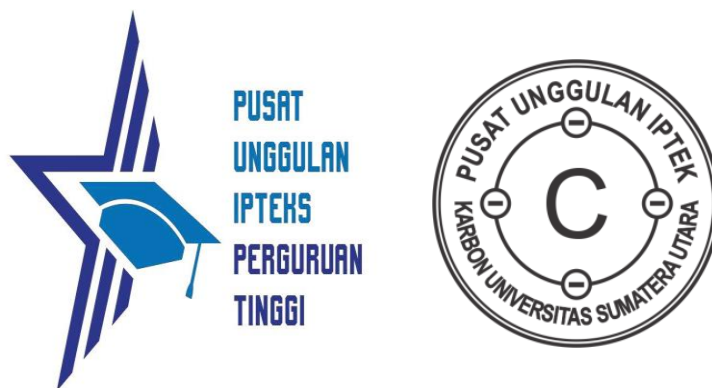


Borang Pengembangan Pusat Unggulan Ipteks

Perguruan Tinggi

(Form Asesmen Mutu dan Isian Penilaian Kinerja)



**PUSAT UNGGULAN IPTEKS KARBON
UNIVERSITAS SUMATERA UTARA
MEDAN
2020**

Form Asesmen Mutu Standar 1 (Sumber Daya)

Standar 1 Sumber Daya			
No.	Komponen Mutu	Deskripsi PUI-PT	Bukti
1.1.	PUI-PT memiliki jumlah tenaga peneliti dan tenaga penunjang yang memadai untuk melakukan keseluruhan aktivitas penelitian dan pengembangan keilmuan yang sesuai dengan fokus riset di lembaga PUI-PT.	1. PUI-PT Karbon Universitas Sumatera Utara (USU) berdiri pada 1 Oktober 2019 dengan SK Rektor USU.Tim pengelola PUI-PT Karbon terdiri dari 25 orang (13 orang Tenaga Peneliti dan 12 orang Tenaga Penunjang. Deskripsi singkat Tim Peneliti PUI Karbon:	Keputusan Rektor Universitas Sumatera Utara Nomor: 3386/UN5.1.R/SK/KPM/2019, Tanggal 2 Desember 2019. (Lampiran B-S1-1)
		<p>a. Ketua (1 orang): Guru Besar Doktor Fisika, Bidang Fungsional Material Sumber daya alam lokal.</p> <p>Keahlian: Material Sciences; Chemistry; Energy.</p> <p>Publikasi:</p> <p>Scopus: 42 documents; h-index: 5; sitasi: 75 (https://www.scopus.com/authid/detail.uri?authorId=5532518000)</p> <p>Google Scholars: sitasi 130; h-index: 6 (https://scholar.google.co.id/citations?hl=id&user=bkj5HD4AAAAJ).</p> <p>Sinta (http://sinta.ristekbrin.go.id/authors/detail?id=6017777&view=overview)</p> <p>Research Output Scopus: Artikel: 8; Konferensi: 20; Quartil Scopus: Q1=1; Q2=2; Q3=13; Q4=1.</p> <p>Web of Science: 2 dokumen.</p>	Lampiran B-S1-2
		<p>b. Wakil Ketua (1 orang): Lektor Kepala Doktor Kimia, Bidang Anorganik Material (Karbon, Sorbitol dan Bentonit).</p> <p>Keahlian: Multidisiplin; Chemistry; Kimia Lingkungan.</p> <p>Publikasi:</p> <p>Scopus: 8 documents; h-index: 2; sitasi: 24 (https://www.scopus.com/authid/detail.uri?authorId=57193572041)</p>	Lampiran B-S1-3

		<p>Google Scholars: sitasi 57; h-index: 3 (https://scholar.google.co.id/citations?hl=id&user=gMUwBMAAAAJ).</p> <p>Sinta (http://sinta.ristekbrin.go.id/authors/detail?id=6019731&view=overview)</p> <p>Research Output Scopus: Artikel: 6; Konferensi: 2; Quartil Scopus: Q1=1; Q2=1; Q3=2; Q4=4.</p> <p>Web of Science: 1 dokumen.</p>	
		<p>c. Sekretaris (1 orang): Lektor Kepala Doktor Kimia, Bidang Karbon (2D, 3D: Sintesis dan Aplikasi), Baterai dan Sel Bahan Bakar.</p> <p>Keahlian: Multidisiplin; Chemistry; Kimia Lingkungan; Material Science.</p> <p>Publikasi: Scopus: 21 documents; h-index: 5; sitasi: 149 (https://www.scopus.com/authid/detail.uri?authorId=55440436000)</p> <p>Google Scholars: 47 dokumen; sitasi 188; h-index: 6 (https://scholar.google.co.id/citations?hl=id&user=-cc2IUcAAAAJ).</p> <p>Sinta (http://sinta.ristekbrin.go.id/authors/detail?id=5973137&view=overview)</p> <p>Research Output Scopus: Artikel: 17; Konferensi: 3; Quartil Scopus: Q1=1; Q2=3; Q3=4; Q4=7.</p> <p>Web of Science: 3 dokumen.</p>	Lampiran B-S1-4
		<p>d. Wakil Sekretaris (1 orang): Lektor Doktor Kimia, Bidang Karbon Organik Bahan Alam.</p> <p>Keahlian: Natural Product; Chemistry; Kimia Lingkungan.</p> <p>Publikasi: Scopus: 5 documents; h-index: 2; sitasi: 28 (https://www.scopus.com/a</p>	Lampiran B-S1-5

		<p>uthid/detail.uri?authorId=57038878400)</p> <p>Google Scholars: 17 dokumen; sitasi 188; h-index: 3 (https://scholar.google.co.id/citations?hl=id&user=OTWlnzMAAAAJ).</p> <p>Sinta (http://sinta.ristekbrin.go.id/authors/detail?id=6016799&view=overview)</p> <p>Research Output Scopus: Artikel: 5; Konferensi: 0; Quartil Scopus: Q1=0; Q2=1; Q3=0; Q4=4.</p> <p>Web of Science: 0 dokumen.</p>	
		<p>e.Kelompok Riset Fundamental Sains Karbon (3 orang): Lektor Kepala Doktor Kimia Organik Karbon: Sintesis, Mekanisme dan Pengembangan.</p>	
		<p>e.1 Kordinator (1 orang) Lektor Kepala Doktor Kimia, Bidang Karbon Organik. Keahlian: Sintesis Organik; Chemistry; Chemical Engineering; Medicine. Publikasi: Scopus: 17 documents; h-index: 4; sitasi: 51 (https://www.scopus.com/authorid/detail.uri?authorId=57203957095) Google Scholars: 99 dokumen; sitasi 147; h-index: 7 (https://scholar.google.co.id/citations?hl=id&user=Ozm9HLYAAAAJ).</p> <p>Sinta (sinta.ristekbrin.go.id/authors/detail?id=6019735&view=overview)</p> <p>Research Output Scopus: Artikel: 6; Konferensi: 12; Quartil Scopus: Q1=3; Q2=0; Q3=2; Q4=1.</p> <p>Web of Science: 0 dokumen.</p>	Lampiran B-S1-6
		<p>e.2 Anggota-1 Lektor Kepala Doktor Kimia, Bidang Karbon Organik. Keahlian: Sintesis Organik; Chemistry; Farmakologi;</p>	Lampiran B-S1-7

		<p>Medicine.</p> <p>Publikasi: Scopus: 8 documents; h-index: 2; sitasi: 9 (https://www.scopus.com/authid/detail.uri?authorId=57201850762) Google Scholars: 40 dokumen; sitasi 224; h-index: 2 (https://scholar.google.co.id/citations?hl=id&user=R0vq6QMAAAAJ). Sinta (http://sinta.ristekbrin.go.id/authors/detail?id=6033758&view=overview) Research Output Scopus: Artikel: 6; Konferensi: 2; Quartil Scopus: Q1=1; Q2=2; Q3=4; Q4=0. Web of Science: 0 dokumen.</p>	
		<p>e.3 Anggota-2 Lektor Kepala Magister Kimia, Bidang Karbon Organik. Keahlian: Sintesis Organik; Chemistry; Farmakologi; Medicine. Publikasi: Scopus: 3 documents; h-index: ?; sitasi: 0 (https://www.scopus.com/authid/detail.uri?authorId=57201401665) Google Scholars: 2 dokumen; sitasi 0; h-index: 0 (https://scholar.google.co.id/citations?hl=id&user=ISR7G5IAAAAJ). Sinta (http://sinta.ristekbrin.go.id/authors/detail?id=6098363&view=overview) Research Output Scopus: Artikel: 0; Konferensi: 0; Quartil Scopus: Q1=0; Q2=0; Q3=0; Q4=0. Web of Science: 0 dokumen.</p>	Lampiran B-S1-8
		<p>f. Kelompok Riset Renewable dan Sustainable Karbon (4 orang): Guru Besar Kimia Polimer (1 orang) dan Lektor Kepala Doktor Fisika (Instrumentasi), Biologi (Mikrobiologi) dan</p>	

		Biokimia (Sintesis dan Enzimatik) (3 orang).	
		<p>f.1 Kordinator (1 orang) Guru Besar Doktor Kimia, Kimia Fisika. Keahlian: Polimer; Chemistry; Chemical Engineering; Energi; Kimia Lingkungan. Publikasi: Scopus: 64 documents; h-index: 8; sitasi: 492 (https://www.scopus.com/authid/detail.uri?authorId=6505945437) Google Scholars: 81 dokumen; sitasi 780; h-index: 10 (https://scholar.google.co.id/citations?hl=id&user=CRthXSAAAAAJ). Sinta (http://sinta.ristekbrin.go.id/authors/detail?id=6016257&view=overview) Research Output Scopus: Artikel: 23; Konferensi: 38; Quartil Scopus: Q1=2; Q2=10; Q3=13; Q4=2. Web of Science: 3 dokumen.</p>	Lampiran B-S1-9
		<p>f.2 Anggota 1 Lektor Kepala Doktor Fisika, Fisika Material. Keahlian: Material Science; Chemistry; Chemical Engineering; Energi; Fisika. Publikasi: Scopus: 17 documents; h-index: 1; sitasi: 5 (https://www.scopus.com/authid/detail.uri?authorId=57204181322) Google Scholars: 31 dokumen; sitasi 14; h-index: 2 (https://scholar.google.co.id/citations?hl=id&user=dsFG5YUAAAAAJ). Sinta (http://sinta.ristekbrin.go.id/authors/detail?id=6017778&view=overview) Research Output Scopus: Artikel: 1; Konferensi: 8; Quartil Scopus: Q1=0; Q2=1; Q3=7; Q4=0.</p>	Lampiran B-S1-10

		Web of Science: 0 dokumen.	
		<p>f.3 Anggota 2 Lektor Kepala Doktor Biologi. Anatomi Taksonomi. Keahlian: Biokimia; Genetika dan Biologi Molekular; Kimia Lingkungan; Energi; Biologi. Publikasi: Scopus: 20 documents; h-index: 4; sitasi: 29 (https://www.scopus.com/authid/detail.uri?authorId=57191970870) Google Scholars: 58 dokumen; sitasi 77; h-index: 4 (https://scholar.google.co.id/citations?hl=id&user=AZQJ-5sAAAAJ). Sinta (http://sinta.ristekbrin.go.id/authors/detail?id=5978991&view=overview) Research Output Scopus: Artikel: 6; Konferensi: 14; Quartil Scopus: Q1=0; Q2=0; Q3=1; Q4=0. Web of Science: 1 dokumen.</p>	Lampiran B-S1-11
		<p>f.4 Anggota 3 Lektor Kepala Doktor Biokimia. Keahlian: Biokimia; Genetika dan Biologi Molekular; Kimia Lingkungan; Energi; Biologi. Publikasi: Scopus: 4 documents; h-index: 1; sitasi: 3 (https://www.scopus.com/authid/detail.uri?authorId=57193562783) Google Scholars: 28 dokumen; sitasi 102; h-index: 6 (https://scholar.google.co.id/citations?hl=id&user=Vr_AG3QAAAAJ). Sinta (http://sinta.ristekbrin.go.id/authors/detail?id=6035819&view=overview) Research Output Scopus: Artikel: 3; Konferensi: 1; Quartil Scopus: Q1=1; Q2=0; Q3=1; Q4=1.</p>	Lampiran B-S1-12

		Web of Science: 0 dokumen.	
		g. Kerjasama dan Kelengkapan (3 orang): Lektor (Alumni S3 Australia), Lektor Kepala (WD3 dan Alumni S3 Inggris) serta Kepala Biro Kerjasama (Birokrat mumpuni dibidang kerjasama).	
		g.1 Kordinator Lektor Doktor Biokimia. Keahlian: Material Science; Environmental Science; Chemical Engineering; Energi; Chemistry. Publikasi: Scopus: 5 documents; h-index: 3; sitasi: 18 (https://www.scopus.com/authid/detail.uri?authorId=57202848835) Google Scholars: 7 dokumen; sitasi 18; h-index: 3 (https://scholar.google.co.id/citations?hl=id&user=N_GlyAEAAAAJ). Sinta (http://sinta.ristekbrin.go.id/authors/detail?id=6708740&view=overview) Research Output Scopus: Artikel: 5; Konferensi: 0; Quartil Scopus: Q1=5; Q2=0; Q3=9; Q4=0. Web of Science: 0 dokumen.	Lampiran B-S1-13
		g.2 Anggota Lektor Doktor Kimia. Keahlian: Material Science; Environmental Science; Chemical Engineering; Energi; Chemistry; Biokimia. Publikasi: Scopus: 39 documents; h-index: 8; sitasi: 431 (https://www.scopus.com/authid/detail.uri?authorId=23004491900) Google Scholars: 86 dokumen; sitasi 536; h-index: 7 (https://scholar.google.co.id/citations?hl=id&user=XgCAXREAAAAJ). Sinta	Lampiran B-S1-14

		<p>(http://sinta.ristekbrin.go.id/authors/detail?id=5978243&view=overview)</p> <p>Research Output Scopus: Artikel: 17; Konferensi: 22; Quartil Scopus: Q1=0; Q2=2; Q3=2; Q4=3. Web of Science: 2 dokumen.</p>	
		<p>h. Sekretariat: Keuangan (2 orang) berasal dari Biro Keuangan USU; Pengolahan Data (2 orang) berasal dari Biro Kerjasama dan Informasi USU; Administrasi (3 orang): Mahasiswa S3, S2 dan Laboran dan Publikasi (2 orang) berasal dari Biro Publikasi USU.</p>	Lampiran B-S1-14
		<p>2. Dukungan Rektor untuk memilih, menetapkan dan menugaskan Tim Personalia PUI Karbon untuk: membangun komposit/senyawa karbon baru dan mengembangkan aplikasi baru yang bertujuan untuk membangun lembaga penelitian berbasis karbon skala nasional dan nasional.</p>	<p>Keputusan Rektor Universitas Sumatera Utara Nomor: 734/UN5.1.R/SK/KPM/2019, Tanggal 23 Maret 2020. (Lampiran B-S1-15)</p>
1.2.	<p>PUI-PT memiliki rencana pengembangan SDM serta penguatan kemampuan SDM di lingkungannya.</p>	<p>PUI Karbon USU sebagai PUI termuda dilingkungan USU dalam tata kelola administrasi dan pencapaian Visi, Misi, Tujuan dan Strategi serta Program-program kerjanya selalu mengacu pada Naskah Akademik. Rencana pengembangan dan penguatan SDM di lingkungan PUI Karbon telah diatur dalam naskah akademik PUI Karbon yaitu: a. Sasaran dan Strategi Pencapaian PUI Karbon (Naskah Akademik PUI Karbon, yaitu 1.2 Pengembangan Kompetensi SDM PUI Karbon, melalui <i>capacity building</i> fokus unggulan PUI Karbon. .</p>	<p>Naskah Akademik PUI Karbon Bab 2 Desain PUI Karbon USU Tabel 2.1, Halaman 23</p>
		<p>b. Indikator Kinerja PUI Karbon 1. Indikator Kinerja Kapasitas Sumber Daya Input: Pengembangan</p>	<p>Naskah Akademik PUI Karbon Bab 2 Desain PUI Karbon USU Tabel 2.2, Halaman 25</p>

		Kompetensi SDM	
		2. Indikator Kinerja Kapasitas Penelitian dan Pengembangan Proses: Penguatan Fokus Riset, yaitu Implementasi Penguatan Kapasitas dan Kapabilitas SDM dalam pelaksanaan Riset	Naskah Akademik PUI Karbon Bab 2 Desain PUI Karbon USU Tabel 2.2, Halaman 26
		c. Arah kebijakan PUI Karbon 3. Meningkatkan kualitas SDM.	Naskah Akademik PUI Karbon Bab 4 Strategi, Program Kerja, dan Kebijakan PUI Karbon USU Tabel 4.1, Halaman 47
		d. Strategi ke-10 PUI Karbon yaitu meningkatkan kualitas SDM	Naskah Akademik PUI Karbon Bab 4 Strategi, Program Kerja, dan Kebijakan PUI Karbon USU Halaman 48
		e. Program-program kerja PUI Karbon 2020-2024: 11.Meningkatkan kemampuan peneliti dan kualitas penelitian melalui pelatihan dan kunjungan lembaga-lembaga nasional dan internasional yang mumpuni dibidang karbon dan material. 16. Menginisiasi dan meningkatkan kompetensi PUI Karbon berskala internasional, dan merintis menuju <i>joint</i> dan <i>double degree</i> .	Naskah Akademik PUI Karbon Bab 4 Strategi, Program Kerja, dan Kebijakan PUI Karbon USU Tabel 4.2, Halaman 50.
		20. Mewajibkan semua dosen dan mahasiswa Tim PUI Karbon menjadi anggota asosiasi profesi internasional khususnya dibidang Karbon dan serumpun dengannya.	Naskah Akademik PUI Karbon Bab 4 Strategi, Program Kerja, dan Kebijakan PUI Karbon USU Tabel 4.2, Halaman 51.
		32.Menguatkan kompetensi SDM PUI Karbon melalui kunjungan ke PUI-PUI, Laboratoium dan seminar-seminar nasional dan internasional sebagai undangan pembicara. 33. Merekrut SDM PUI Karbon berkualitas dari tingkat nasional hingga internasional.	Naskah Akademik PUI Karbon Bab 4 Strategi, Program Kerja, dan Kebijakan PUI Karbon USU Tabel 4.2, Halaman 53.
		f. Indikator-indikator capaian PUI Karbon	Naskah Akademik PUI Karbon

		<p>76. Jumlah dosen Tim PUI Karbon bersertifikat keahlian bertaraf internasional dibidang Karbon.</p> <p>77. Persentase dosen Tim PUI Karbon mengikuti kegiatan mobilitas internasional.</p> <p>78. Persentase Tendik Tim PUI Karbon bersertifikat keahlian.</p> <p>79. Persentase dosen Tim PUI Karbon mengikuti magang/pelatihan.</p> <p>80. Persentase tendik Tim PUI Karbon mengikuti magang/pelatihan.</p> <p>82. Persentase mahasiswa bersertifikat kompetensi dan profesi.</p> <p>83. Persentase Tim PUI Karbon anggota organisasi profesi bidang karbon dan sejenisnya.</p>	<p>Bab 4 Strategi, Program Kerja, dan Kebijakan PUI Karbon USU Tabel 4.3, Halaman 58.</p>
1.3.	<p>PUI-PT memiliki fasilitas yang mendukung dengan standar yang baik dan memadai untuk mendukung aktivitas serta kegiatan PUI-PT untuk mencapai kriteria sebagai PUI-PT.</p>	<p>PUI Karbon berdiri 2 Desember 2019 dengan 13 orang tim peneliti yang bergabung dengan fokus riset Karbon. Seluruh tim peneliti tersebut memiliki sarana dan prasarana Laboratorium mandiri dan kelompok sesuai dengan bidangnya. Universitas memberikan ruang sekretariat pada Laboratorium Riset FMIPA USU sekaligus Laboratorium riset PUI Karbon. Oleh karena itu Rektor USU memberikan anggaran dalam pengembangan PUI Karbon tiap tahunnya dalam rangka operasional manajemen dan pembenahan Sarana dan Prasarana pendukung riset PUI Karbon secara bertahap sesuai dengan kemampuan anggaran USU yang dipagukan ke PUI Karbon. Selain itu, seluruh fasilitas riset USU juga dapat digunakan oleh PUI Karbon dalam mendukung fokus risetnya.</p>	<p>Naskah Akademik PUI Karbon Bab 1 Pendahuluan Halaman 12</p>
		<p>Fasilitas-fasilitas penunjang kegiatan-kegiatan riset dan</p>	<p>Naskah Akademik Bab 3 Analisis Situasi</p>

	<p>akademik PUI Karbon mengacu pada Naskah Akademik PUI Karbon yaitu seluruh fasilitas USU dapat digunakan misalnya Laboratorium Ilmu Dasar (LIDA) dan laboratorium penelitian di berbagai fakultas khususnya MIPA, karena Tim Peneliti PUI Karbon saat ini didominasi oleh dosen-dosen MIPA.. Berbagai laboratorium yang dapat digunakan seluruh fasilitasnya sebagai penunjang penelitian adalah:</p> <ol style="list-style-type: none"> 1. Lab. Fisika Inti; 2. Lab. Elektronika Dasar; 3. Lab. Elektronika Lanjutan; 4. Lab. Kristalografi; 5. Lab. Zat Padat/Solar Energi; 6. Lab. Instrumen Digital; 7. Lab. Fisika Gelombang; 8. Lab. Kimia Analitik; 9. Lab. Kimia Anorganik; 10. Lab. Kimia Organik; 11. Lab. Kimia Fisika; 12. Lab. Kimia Bahan Alam hayati; 13. Lab. Kimia Polimer; 14. Lab. Biokimia; 15. Lab. Mikrobiologi; 16. Lab. Genetika/Bio Molekuler; 17. Lab. Fisiologi Hewan; 18. Lab. Struktur Hewan; 19. Lab. Taksonomi Hewan; 20. Lab. Struktur Tumbuhan; 21. Lab. Fisiologi Tumbuhan dan Kultur Jaringan; 22. Lab. Taksonomi Tumbuhan; 23. Lab. Ekologi; 24. Lab. Pengelolaan Sumber Daya Alam dan Lingkungan; 25. Lab. Statistika; 26. Lab. Komputer; 27. Lab. Fisika Atom; 28. Lab. Rekayasa Perangkat Lunak; 29. Lab. Pemograman Dan Multimedia; 30. Lab. Program Dan Multimedia; 31. Lab. Networking. 	<p>Halaman 37 dan website fmipa: https://drive.google.com/file/d/1ltmb8Oq3kReZ8a8ss_rew6gxLKEl6l7O/view</p>
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Form Asesmen Mutu Standar 2 (Tata Kelola)

Standar 2 Tata Kelola			
No.	Komponen Mutu	Deskripsi PUI-PT	Bukti
2.1.	PUI-PT memiliki peta jalan yang jelas untuk menuju <i>Science and Technology Campus</i> .	PUI Karbon direncanakan dengan baik dan terprogram dalam Naskah Akademik termasuk didalamnya Renstra PUI Karbon. Dalam mencapai Visinya, PUI Karbon memiliki Peta Jalan yang bertahap dan periode waktu tertentu (Gambar 2.1) dengan target akhir adalah “Berkontribusi Nyata Bagi Universitas sebagai Science and Technology Campus (STC), Pembangunan Lokal, Nasional dan Global Melalui PUI Karbon”.	Naskah Akademik PUI Karbon Bab 2 Desain PUI Karbon USU. Gambar 2.1 Peta Jalan. Halaman: 20
2.2.	PUI-PT memiliki peta jalan penelitian yang diimplementasikan serta target-target yang terukur.	PUI Karbon memiliki peta jalan dalam bidang penelitian. Hal itu terlihat jelas dalam Peta Jalannya: Tahap-1: 2.1 Penguatan fokus riset dan 2.2 Keberlanjutan pemanfaatan produk riset; Tahap-2: 2.1 Penguatan produktivitas; Tahap-3: 2.1 Komersialisasi Produktivitas Riset;	Naskah Akademik PUI Karbon Bab 2 Desain PUI Karbon USU. Gambar 2.1 Peta Jalan. Halaman: 20.
		Implementasi peta jalan penelitian PUI Karbon dinyatakan dalam a. program-program kerja: 11. Meningkatkan kemampuan peneliti dan kualitas penelitian melalui pelatihan dan kunjungan lembaga-lembaga nasional dan internasional yang mumpuni dibidang karbon dan material. 13. Memperkuat penelitian kerjasama internasional dibidang unggulan PUI Karbon melalui kolaborasi riset nasional dan internasional. 14. Menghilirkan hasil penelitian untuk menghasilkan produk unggulan (Grafit, Grafena, N-Grafena, turunan grafitik karbon, elektroda katalis	Naskah Akademik PUI Karbon Bab 4 Strategi, Program Kerja dan Kebijakan PUI Karbon USU. Tabel 4.2 Halaman: 50-54.

		<p>baterai dan sel bahan bakar serta katalis dan biokatalis oleokimia) PUI Karbon.</p> <p>25. Mengembangkan sarana dan prasarana berstandar internasional dalam menunjang riset unggulan bidang karbon.</p> <p>34. Menginisiasi kolaborasi riset dan sumberdaya secara nasional dan internasional.</p> <p>36. Memberikan insentif riset bagi mahasiswa S1, S2 dan S3.</p>	
		<p>b. Indikator-indikator capaian PUI Karbon</p> <p>13. Persentase penelitian melibatkan mahasiswa.</p> <p>14. Jumlah jurnal bereputasi terakreditasi nasional (Sinta 2).</p> <p>15. Jumlah jurnal bereputasi terindeks global (Scopus dan WoS).</p> <p>16. Jumlah mahasiswa yang terlibat dalam penelitian dosen.</p> <p>20. Jumlah kekayaan intelektual yang didaftarkan.</p> <p>39. Jumlah judul publikasi nasional buku/book chapter.</p> <p>40. Jumlah judul publikasi internasional buku/book chapter.</p> <p>68. Persentase penelitian PUI Karbon yang hasilnya diintegrasikan kedalam bahan ajar.</p>	<p>Naskah Akademik PUI Karbon</p> <p>Bab 4 Strategi, Program Kerja dan Kebijakan PUI Karbon USU. Tabel 4.3 Halaman: 54-58.</p>
2.3.	<p>PUI-PT memiliki keterbukaan informasi aktivitas yang dapat diakses secara <i>online</i> dan senantiasa memiliki informasi terbaru terkait dengan aktivitas PUI-PT.</p>	<p>PUI Karbon memiliki website dalam upaya keterbukaan informasi aktivitas yang dapat diakses secara <i>online</i> dan tempat untuk memutakhirkan informasi dan mensharing serta menyebarkan informasi-informasi yang penting dan berguna mengenai seluruh aktivitas PUI Karbon (https://puikarbon.usu.ac.id/)</p>	<p>Official website PUI Karbon: https://puikarbon.usu.ac.id/</p>
2.4.	<p>PUI-PT memiliki prosedur pelaksanaan aktivitas yang terdokumentasi serta terstandardisasi.</p>	<p>PUI Karbon diusianya yang masih efektif muda \pm 3 bulan sedang membenahi manajemen sekretariat dan konsolidasi internal Tim. Oleh karena itu, aktivitas PUI</p>	

		<p>Karbon saat ini dalam melaksanakan aktivitasnya mengacu pada standar yang telah diatur oleh pimpinan universitas dan segera menyusun standar pelaksanaan aktivitas pada PUI Karbon, yaitu:</p> <p>1. Tata cara penyusunan dan format dokumen sistem penjaminan mutu internal (SPMI) non akademik</p>	<p>https://umm.usu.ac.id/wp-content/uploads/2018/11/Tata-Cara-Isi-Dokumen-Non-Akademik-2018-OK.pdf</p>
		<p>2. Tata cara penyusunan dan format dokumen sistem manajemen mutu (SMM) akademik</p>	<p>https://umm.usu.ac.id/news/tata-cara-format-dokumen-mutu/ https://drive.google.com/file/d/0B9Boo5jKB3UCR05QLTZOOGLoVEk/view</p>
		<p>3. Manual mutu: Kebijakan Mutu; Sistem Manajemen Mutu; Tanggung Jawab Manajemen; Sumber Daya dan Manajemen Proses.</p>	<p>https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=2ahUKEwj3sq2v7XpAhUXeysKHQWRCrIQFjABegQIAhAB&url=http%3A%2F%2Ffsirenbang.usu.ac.id%2Findex.php%2Funduh%3Fdownload%3D5%3Amanual-mutu-sistem-informasi&usg=AOvVaw27tnbd9fvimoUcSHAi85cM</p>
		<p>4. Dokumen Sistem Manajemen Mutu: a. Dokumen akademik: Kebijakan akademik, Standar akademik; Peraturan akademik; b. Dokumen mutu: A. Manual mutu; B. 21 Manual Prosedur Wajib.</p>	<p>https://umm.usu.ac.id/smm/daftar-dokumen-smm/</p>
		<p>5. Prosedur Mutu Pengendalian Record</p>	<p>http://arsip.usu.ac.id/images/MANUAL_PROSEDUR/03_PROSEDUR_MUTU_PENGENDALIAN_RECORD.pdf</p>
2.5.	<p>PUI-PT memiliki prosedur untuk pemakaian fasilitas penelitian bersama yang bersifat lintas lembaga penelitian lainnya.</p>	<p>PUI Karbon mengadopsi prosedur pemakaian fasilitas penelitian bersifat lintas lembaga penelitian yang ditetapkan Fakultas Farmasi USU: SOP Peminjaman Alat dan SOP Laboratorium Operasi Teknik kimia.</p>	<p>Panduan Sistem Manajemen Laboratorium Fakultas Farmasi USU Lampiran 2. Halaman 52 http://ffar.usu.ac.id/images/farmasi/Panduan-Sistem-Manajemen-oke.pdf dan http://teknikkimia.usu.ac.id/images/PDF/LABORATORIUM/OTK/30860_STA</p>

			NDAR-OPERASIONAL-PROSEDUR.pdf
2.6.	PUI-PT memiliki prosedur untuk magang bersertifikat untuk mahasiswa (bersama mitra industri), kerja riset mahasiswa S1, S2 dan S3	PUI Karbon mengadopsi prosedur magang untuk mahasiswa dari: a. Departemen Trknik Kimia USU.	http://teknikkimia.usu.ac.id/images/FOLDER2/6-17-Prosedur-Kerja-Praktek.pdf
		b. Pasal 12, Peraturan Rektor Universitas Sumatera Utara Nomor 03 Tahun 2017 tentang peraturan akademik program sarjana Universitas Sumatera Utara	http://teknikkimia.usu.ac.id/images/PDF/Peraturan_Akademik_S1.pdf
		c. Pasal 13, Peraturan Rektor Universitas Sumatera Utara Nomor 06 Tahun 2017 Tentang Peraturan Akademik Program Magister dan Program Doktor Universitas Sumatera Utara.	https://www.usu.ac.id/images/pengumuman/Peraturan Akademik S2 dan S3.pdf

Form Asesmen Mutu Standar 3 (Unggul Akademik)

Standar 3 Unggul Akademik			
No.	Komponen Mutu	Deskripsi PUI-PT	Bukti
3.1.	PUI-PT menghasilkan luaran berupa karya-karya ilmiah yang bersifat nasional dan internasional di jurnal-jurnal bermutu.	PUI Karbon secara resmi ada sejak Desember 2019 dan dilanjutkan mulai Maret 2020 dengan SK Rektor. Luaran-luaran yang dihasilkan oleh Tim PUI Karbon terbagi dalam dua kelompok waktu:	
		a. Desember 2019-Desember 2020	
		i) Jurnal Internasional bereputasi:	
		1. Q1-Scopus Properties of Mg/graphite and Mg/graphene as cathode electrode on primary cell battery, Heliyon 6 (2020) e03118. DOI: 10.1016/j.heliyon.2019.e03118.	https://www.cell.com/heliyon/pdf/S2405-8440(19)36777-5.pdf?returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS2405844019367775%3Fshoal%3Dtrue
		2. Q1-Scopus New route: Conversion of coconut shell to be graphite and graphene nano sheets, Journal of King Saud University – Science, 32, 1, 2020, 189-190. https://doi.org/10.1016/j.jksus.2018.04.016	https://www.sciencedirect.com/science/article/pii/S1018364718300971?via%3Dihub
		3. Q1-Scopus Self-healing composite hydrogel with antibacterial and reversible restorability conductive properties. RSC Adv., 2020,10, 5050-5057. https://doi.org/10.1039/D0RA00089B	https://pubs.rsc.org/en/content/articleanding/2020/ra/d0ra00089b#divAbstract
		4. Q1 Scopus A simple one-pot fabrication of silver loaded semi-interpenetrating polymer network (IPN) hydrogels with self-healing and bactericidal abilities. RSC Adv., 2019,9, 39515-39522. https://doi.org/10.1039/C9RA07906H	https://pubs.rsc.org/en/content/articleanding/2019/ra/c9ra07906h#divAbstract
		5. Q2 Scopus Physicochemical properties of <i>Arenga pinnata</i> Merr.	http://www.japtr.org/article.asp?issn=2231-

		endosperm and its antidiabetic activity for nutraceutical application. Journal of Advanced Pharmaceutical Technology & Research. 11(1), 2020, 1-5. DOI: 10.4103/japtr.JAPTR_91_19.	4040;year=2020;volume=11;issue=1;spage=1;epage=5;aulast=Tarigan;type=0
		6. Q1 Scopus Microencapsulation of ginger-based essential oil (Zingiber cassumunar roxb) with chitosan and oil palm trunk waste fiber prepared by spray-drying method. Case studies in thermal engineering. 18, 2020. https://doi.org/10.1016/j.csite.2020.100606	https://www.sciencedirect.com/science/article/pii/S2214157X20300447
		7. Q2 Scopus Improving quality and yield production of coconut shell charcoal through a modified pyrolysis reactor with tar scrubber to reduce smoke pollution. Polish Journal of Environmental Studies 29(2) - January 2020. DOI: 10.15244/pjoes/110582	https://www.researchgate.net/publication/338776437_Improving_Quality_and_Yield_Production_of_Coconut_Shell_Charcoal_Through_a_Modified_Pyrolysis_Reactor_with_Tar_Scrubber_to_Reduce_Smoke_Pollution
		8. Q2 Scopus The physical, mechanical, and sound absorption properties of sandwich particleboard (SPb). J. Korean Wood Sci. Technol. 2020, 48(1): 32~40. https://doi.org/10.5658/WOOD.2020.48.1.32 .	http://210.101.116.28/W_files/kiss6/06806491_pv.pdf
		9. Q2 Scopus Characteristic and catalytic performance of Co and Co-Mo metal impregnated in sarulla natural zeolite catalyst for hydrocracking of MEFA rubber seed oil into biogasoline fraction. Catalysts 2020, 10(1), 121; https://doi.org/10.3390/catal10010121 .	https://www.mdpi.com/2073-4344/10/1/121/html
		ii) Buku	
		1. APLIKASI GRAFENA SEBAGAI ELEKTRODA BATERAI. ISBN: 978-623-91531-75. Pilar, 2019	https://puikarbon.uu.ac.id/index.php/e-book
		iii) Konferensi Internasional:	

		1. The impact of marine sand mining on sea water quality in Pantai Labu, Deli Serdang Regency, Indonesia. IOP Conf. Series: Earth and Environmental Science 454 (2020) 012086. doi:10.1088/1755-1315/454/1/012086.	https://iopscience.iop.org/article/10.1088/1755-1315/454/1/012086/pdf
		2. Effect of the mass and volume shrinkage of porous ceramics on Sinabung volcanic ash, 2020, AIP Conference Proceedings 2221(1):110029. DOI: 10.1063/5.0003208	https://www.researchgate.net/publication/340348175_Effect_of_the_mass_and_volume_shrinkage_of_porous_ceramics_on_Sinabung_volcanic_ash
		3. Effect of dopant on superconductor Bi _{1.6} Pb _{0.4} Sr ₂ Ca _{2-x} M _x Cu ₃ O _y (M = Ce, Na, Mg) phase 2223 by solid method. AIP Conference Proceedings 2221(1):110011 · March 2020. DOI: 10.1063/5.0003934	https://www.researchgate.net/publication/340345716_Effect_of_dopant_on_superconductor_Bi16Pb04Sr2Ca2-x_MxCu3Oy_M_Ce_Na_Mg_phase_2223_by_solid_method
		4. A real-time phytoplankton growth monitoring using TCS-3200 color sensor. AIP Conference Proceedings 2221(1):100003 · March 2020. DOI: 10.1063/5.0003249 .	https://www.researchgate.net/publication/340346957_A_real-time_phytoplankton_growth_monitoring_using_TCS-3200_color_sensor
		5. Study of thermal conductivity of Fe ₃ O ₄ nanoparticles coated with TEOS. AIP Conf. Proc. 2221, 110015-1–110015-5; https://doi.org/10.1063/5.0003795	https://aip.scitation.org/doi/pdf/10.1063/5.0003795
		6. Study of physical and magnetic properties of barium hexaferrite substituted by Nd ₂ O ₃ . AIP Conference Proceedings 2221(1):110025 · March 2020 DOI: 10.1063/5.0005256	https://www.researchgate.net/publication/340347134_Study_of_physical_and_magnetic_properties_of_barium_hexaferrite_substituted_by_Nd2O3
		7. The effect of the calcination atmosphere in the formation of mineral sodium titanate. March 2020 AIP Conference Proceedings	https://www.researchgate.net/publication/340348198_The_effect_of_the_calcination_atmosph

		2221(1):110027 DOI: 10.1063/5.0003184	ere in the formation of mineral sodium titanate
		8. Improvement of carbon steel resistance against high temperature oxidation and corrosion by flame sprayed FeCrAlTiY-30 mass% CoNiCrAlY coating using N ₂ pressure. AIP Conference Proceedings 2221(1):110019 · March 2020. DOI: 10.1063/5.0003155.	https://www.researchgate.net/publication/340345503 Improvement of carbon steel resistance against high temperature oxidation and corrosion by flame sprayed FeCrAlTiY-30 mass CoNiCrAlY coating using N2 pressure
		9. The effect of Mg, Na, and Ce addition on the superconducting properties of Bi _{1.6} Pb _{0.4} Sr ₂ Ca _{2-x} MxCu ₃ O _y prepared sol-gel method. AIP Conference Proceedings 2221(1):110006 · March 2020. DOI: 10.1063/5.0004299	https://www.researchgate.net/publication/340348167 The effect of Mg Na and Ce addition on the superconducting properties of Bi_{1.6}Pb_{0.4}Sr₂Ca_{2-x}MxCu₃O_y prepared sol-gel method
		10. High temperature oxidation and corrosion of spark plasma sintered FeCrAlTiY-10 mass% MoSi ₂ coating on low carbon steel. AIP Conference Proceedings 2221(1):110024 · March 2020. DOI: 10.1063/5.0003163.	https://www.researchgate.net/publication/340348196 High temperature oxidation and corrosion of spark plasma sintered FeCrAlTiY-10 mass MoSi₂ coating on low carbon steel
		11. Effect of Acetic Acid and Acetic Anhydride Ratio to Physical and Mechanical Properties of Particleboard. IOP Conference Series Earth and Environmental Science 454:012042 · April 2020 with 9 Reads DOI: 10.1088/1755-1315/454/1/012042	https://www.researchgate.net/publication/340659066 Effect of Acetic Acid and Acetic Anhydride Ratio to Physical and Mechanical Properties of Particleboard
		12. Vegetation Structure and Composition in Taman Wisata Alam (TWA) Sicike-cike as Ritual Site for Local Community. IOP Conf. Series: Journal of Physics: Conf. Series 1462 (2020) 012050. doi:10.1088/1742-	https://iopscience.iop.org/article/10.1088/1742-6596/1462/1/012050

		6596/1462/1/012050	
		13. Lejeuneaceae (Marchantiophyta) of Taman Eden 100 Natural Park North Sumatera Indonesia. IOP Conf. Series: Journal of Physics: Conf. Series1462 (2020) 012059. doi:10.1088/1742-6596/1462/1/012059	https://iopscience.iop.org/article/10.1088/1742-6596/1462/1/012059
		14. Wavelet based machine learning approach for spectral seismic signal analysis: A case study North Tapanuli earthquake. AIP Conference Proceedings 2221, 060001 (2020); https://doi.org/10.1063/5.0003129	https://aip.scitation.org/doi/10.1063/5.0003129
		15. Integrated high voltage generator with ATmega 328 microcontroller using flyback transformer. AIP Conference Proceedings 2221, 100004 (2020); https://doi.org/10.1063/5.0003127	https://aip.scitation.org/doi/10.1063/5.0003127
		16. Effect of capacitance of graphene coated electrodes on supercapacitor by charging and discharging method. 2020 AIP Conference Proceedings 2221(1):110031 DOI: 10.1063/5.0003130	https://www.researchgate.net/publication/340348180_Effect_of_capacitance_of_graphene_coated_electrodes_on_supercapacitor_by_charging_and_discharging_method
		17. Machine learning approach for turbulence forecasting using support vector machine. OP Conf. Series: Materials Science and Engineering725 (2020) 012087. doi:10.1088/1757-899X/725/1/012087	https://iopscience.iop.org/article/10.1088/1757-899X/725/1/012087
		18. High voltage designed and pulsed electric field circuit using standard sphere-gap method. 2020. IOP Conference Series Materials Science and Engineering 725:012059	https://www.researchgate.net/publication/338718653_High_voltage_designed_and_pulsed_electric_field_circuit_using_standard_sphere-gap_method
		19. An Automatic and Realtime Control of Ammonia Concentration in Catfish Pond	https://iopscience.iop.org/article/10.1088/1742-

		Water Based on MQ137 Sensor. Journal of Physics: Conference Series1428 (2020) 012054. doi:10.1088/1742-6596/1428/1/012054	6596/1428/1/012054
		20. Automatic and Realtime Control of pH Level in Water Catfish Cultivation. Journal of Physics: Conference Series1428 (2020) 012055. doi:10.1088/1742-6596/1428/1/012055	https://iopscience.iop.org/article/10.1088/1742-6596/1428/1/012055
		21. Influence of Impulse-Electric Field on Dielectric Properties of Nerve Membranes. Journal of Physics: Conference Series1428 (2020) 012012. doi:10.1088/1742-6596/1428/1/012012	https://iopscience.iop.org/article/10.1088/1742-6596/1428/1/012012
		b. Sebelum Desember 2019-Maret 2020	
		2019: Jurnal Internasional	
		1. Q3 Scopus Analysis of Nitrosamines in Processed Meat Products in Medan City by Liquid Chromatography-Mass Spectrometry, Open Access Maced J Med Sci. 2019 Apr 30; 7(8): 1382–1387. doi: 10.3889/oamjms.2019.261	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6514351/
		2. Q2 Scopus Fungal contamination spices from Indonesia with emphasis on Aspergillus flavus. Czech Journal of Food Sciences, 37, 2019 (5): 338–344. https://doi.org/10.17221/18/2019-CJFS .	https://www.agriculturejournals.cz/publicFiles/18_2019-CJFS.pdf
		3. Q3 Scopus Preparation of in situ cross-linked N-maleoyl chitosan-oxidized sodium alginate hydrogels for drug delivery applications. Open Access Macedonian Journal of Medical Sciences. 7(21), 2017 DOI: https://doi.org/10.3889/oamjms.2019.850	https://www.idpress.eu/mjms/article/view/oamjms.2019.850
		4. Q1 Scopus Direct biodiesel production from wet spent coffee grounds. RSC Adv., 2019,9,	https://pubs.rsc.org/en/content/articleanding/2019/ra/c9ra08038d#ldivAbstr

		35109-35116. https://doi.org/10.1039/C9RA08038D .	act
		5. Q4 Scopus Use of silica gel from volcanic ash as chitosan composite membrane's filler. Asian Journal of Chemistry 31(10):2303-2305. 2019 DOI:10.14233/ajchem.2019.21714.	https://www.researchgate.net/publication/335504719_Use_of_Silica_Gel_from_Volcanic_Ash_as_Chitosan_Composite_Membrane's_Filler
		6. Q3 Scopus Preparation of chitosan PCL/PLA nanocomposite blended with bentonite from Aceh, Indonesia. Rasayan Journal of Chemistry 12(04):1935-1941 · January 2019 with 10 Reads DOI: 10.31788/RJC.2019.1245282	https://www.researchgate.net/publication/337712831_PREPARATION_OF_CHITOSAN_PCL_PLA_NANOCOMPOSITE_BLENDED_WITH_BENTONITE_FROM_ACEH_INDONESIA
		7. Q3 Scopus Antibacterial properties of biofilm schiff base derived from dialdehyde cellulose and chitosan. Indones. J. Chem., 2019, 19(2), 405-412. https://doi.org/10.22146/ijc.34721	https://jurnal.ugm.ac.id/ijc/article/view/34721/22840
		8. Q3 Scopus Conversion of methyl ester fatty acid from rice bran oil into fuel fraction via hydrocracking reaction over zeolite catalyst supported of Ni, Co and Mo metals. 2019 Rasayan Journal of Chemistry 12 (2019): 205-213 DOI: 0.31788/RJC.2019.1215036	https://www.researchgate.net/publication/331560928_Conversion_of_methyl_ester_fatty_acid_from_rice_bran_oil_into_fuel_fraction_via_hydrocracking_reaction_over_zeolite_catalyst_supported_of_Ni_Co_and_Mo_metals
		2019: Konferensi Internasional	
		1. Proximate and Amino Acid Composition of Dengke Naniura Prepared from Carp (Cyprinus carpio) of Lake Toba Indonesia IOP Conf. Series: Journal of Physics: Conf. Series 1232 (2019) 012013 doi:10.1088/1742-6596/1232/1/012013	https://iopscience.iop.org/article/10.1088/1742-6596/1232/1/012013
		2. Improvements in the degree of filler dispersion and tensile properties of N550 and N220 carbon blacks-filled natural	https://iopscience.iop.org/article/10.1088/1757-899X/505/1/01212

		rubber composites using alkanolamide. IOP Conf. Series: Materials Science and Engineering 505 (2019) 012124. doi:10.1088/1757-899X/505/1/012124	4/meta
		3. Mechanical properties improvement in silica-filled natural rubber composites using stearyl alcohol. OP Conf. Series: Materials Science and Engineering 509 (2019) 012054. doi:10.1088/1757-899X/509/1/012054	https://iopscience.iop.org/article/10.1088/1757-899X/509/1/012054
		4. Compatibility and Thermal Properties of Maleic Anhydride-grafted-Polystyrene Containing Microcrystal cellulose (Avicel) as Raw Material for Soil Binder. 2019 IOP Conference Series Materials Science and Engineering 578:012070 DOI: 10.1088/1757-899X/578/1/012070	https://www.researchgate.net/publication/336264388_Compatibility_and_Thermal_Properties_of_Maleic_Anhydride-grafted-Polystyrene_Containing_Microcrystal_cellulose_Avicel_as_Raw_Material_for_Soil_Binder
		5. Extraction and characterization of cellulose fiber of durian rinds from north sumatera as the raw material for textile fiber. IOP Conf. Series: Journal of Physics: Conf. Series 1232 (2019) 012017. doi:10.1088/1742-6596/1232/1/012017	https://iopscience.iop.org/article/10.1088/1742-6596/1232/1/012017
		6. Phytochemical Screening and Chemical Analysis of Ethanol Extract of Kari Leaves (Murayya koeginii) Using GC-MS Method. IOP Conf. Series: Journal of Physics: Conf. Series 1232 (2019) 012012. doi:10.1088/1742-6596/1232/1/012012.	https://iopscience.iop.org/article/10.1088/1742-6596/1232/1/012012
		7. Extraction and Characterization of Cellulose from Abaca Pseudo Stem (Musa textile). OP Conf. Series: Journal of Physics: Conf. Series 1232 (2019) 012018. doi:10.1088/1742-6596/1232/1/012018	https://iopscience.iop.org/article/10.1088/1742-6596/1232/1/012018
		8. The liverworts family Plagiochilaceae of Taman	https://iopscience.iop.org/article/10.1

		Eden 100 Natural Park, North Sumatra Indonesia. IOP Conf. Series: Earth and Environmental Science374 (2019) 012020. doi:10.1088/1755-1315/374/1/012020	088/1755-1315/374/1/012020
		9. The Liverwort, Genus Bazzania of Mount Sibuatan, North-Sumatera, Indonesia. OP Conf. Series: Earth and Environmental Science305 (2019) 012088. doi:10.1088/1755-1315/305/1/012088	https://iopscience.iop.org/article/10.1088/1755-1315/305/1/012088
		10. Ethnobotanical Study of Fodder Plant Species used by the Batak Parmalim Communities in Toba Samosir, Indonesia. IOP Conf. Series: Earth and Environmental Science305 (2019) 012089. doi:10.1088/1755-1315/305/1/012089	https://iopscience.iop.org/article/10.1088/1755-1315/305/1/012089
		11. Lepidoziaceae (Marchantiophyta) in Taman Eden 100 Natural Park, North Sumatra Indonesia OP Conf. Series: Earth and Environmental Science305 (2019) 012013IOP Publishingdoi:10.1088/1755-1315/305/1/012013	https://iopscience.iop.org/article/10.1088/1755-1315/305/1/012013
		12. Free Species Diversity, Richness and Similarity in Disturbed and Undisturbed Forest of Ketambe Research Station, Southeast Aceh regency. IOP Conf. Series: Earth and Environmental Science305 (2019) 012094. doi:10.1088/1755-1315/305/1/012094	https://iopscience.iop.org/article/10.1088/1755-1315/305/1/012094
		13. Characterization Membrane Composition of PVA-Enzyme Coating PVC-KTpCIPB As Urea Sensor with UV-VIS, SEM-EDX and XRD. IOP Conf. Series: Journal of Physics: Conf. Series1317 (2019) 012042IOP Publishingdoi:10.1088/1742-6596/1317/1/012042	https://iopscience.iop.org/article/10.1088/1742-6596/1317/1/012042/meta
		14. Fluorescence Spectra Measurement of Essential	https://iopscience.iop.org/article/10.1

		Oils. IOP Conf. Series: Journal of Physics: Conf. Series1230 (2019) 012035. doi:10.1088/1742-6596/1230/1/012035	088/1742-6596/1230/1/012035
		15. Enhancing the efficiency of ethanol production from molasses using immobilized commercial Saccharomyces cerevisiae in two layer alginate-chitosan beads. IOP Conf. Series: Earth and Environmental Science305 (2019) 012014IOP Publishingdoi:10.1088/1755-1315/305/1/012014..	https://iopscience.iop.org/article/10.1088/1755-1315/305/1/012014
		16. The use of nanofibrils cellulose of sugarcane bagasse as precursor in synthesizing carbon nanodots by hydrothermal method. Journal of Physics: Conference Series1321 (2019) 022021IOP Publishingdoi:10.1088/1742-6596/1321/2/022021.	https://iopscience.iop.org/article/10.1088/1742-6596/1321/2/022021
		17. Preparation of polyvinyl alcohol/cellulose nano fiber nanocomposite isolated from empty oil palm fruit bunches. OP Conf. Series: Materials Science and Engineering553 (2019) 012041. doi:10.1088/1757-899X/553/1/012041	https://iopscience.iop.org/article/10.1088/1757-899X/553/1/012041
		18. The use of bentonite of Bener Meriah Aceh to improve the mechanical properties of Polypropylene-Montmorillonite Nanocomposite. IOP Conf. Series: Materials Science and Engineering523 (2019) 012023. doi:10.1088/1757-899X/523/1/012023.	https://iopscience.iop.org/article/10.1088/1757-899X/523/1/012023
		2018: Jurnal Internasional:	
		1. Q3 Scopus Synthesis and application of silica gel base on mount sinabung's fly ash for Cd(ii) removal with fixed bed column. Rasayan J. Chem., 11(2), 819-827(2018) http://dx.doi.org/10.31788/RJC.2018.1122091	http://rasayanjournal.co.in/admin/php/upload/415_pdf.pdf
		2. Q1 Scopus The influence of storage	https://www.researchgate.net/publicat

		condition on nitrite, nitrate and vitamin C levels in vegetables. F1000 Research 7:1899. DOI: 10.12688/f1000research.16853.1	ion/329459575_The_influence_of_storage_condition_on_nitrite_nitrate_and_vitamin_C_levels_in_vegetables
		3. Q3 Scopus The performance of graphite/n-graphene and graphene/n-graphene as electrode in primary cell batteries. Rasayan Journal of Chemistry 11(4):1649-1656. DOI: 10.31788/RJC.2018.1145007	https://www.researchgate.net/publication/330029767_The_performance_of_graphite-n-graphene_and_graphene-n-graphene_as_electrode_in_primary_cell_batteries
		4. Q3 Scopus The influence of fertilizer on nitrate, nitrite and Vitamin C contents in vegetables. Oriental Journal of Chemistry 34(5):2614-2621. DOI: 10.13005/ojc/340552.	https://www.researchgate.net/publication/328454646_The_influence_of_fertilizer_on_nitrate_nitrite_and_vitamin_c_contents_in_vegetables
		5. Q3 Scopus. Facile method to synthesize N-graphene nano sheets. DOI : http://dx.doi.org/10.13005/ojc/3404035 . Oriental J. Chem. 34(4) 2018	http://www.orientjchem.org/vol34no4/facile-method-to-synthesize-of-n-graphene-nano-sheets/
		6. Q3 Scopus New route to synthesize of graphene nano sheets. DOI : http://dx.doi.org/10.13005/ojc/340120 . Oriental J. Chem. 34(1) 2018	http://www.orientjchem.org/vol34no1/new-route-to-synthesize-of-graphene-nano-sheets/
		7. Q3 Scopus The physiochemical and antibacterial properties of galactomannan edible film of arenga pinnata incorporated with zingiber officinale essential oil. Asian Journal of Pharmaceutical and Clinical Research 11(12):138-142 . 2018. DOI: 10.22159/ajpcr.2018.v11i12.28061.	https://www.researchgate.net/publication/329385709_The_physiochemical_and_antibacterial_properties_of_galactomannan_edible_film_of_arenga_pinnata_incorporated_with_zingiber_officinale_essential_oil
		8. Q3 Scopus Incorporation of vitamin e onto cross-linked galactomannan phosphate matrix and in vitro study. Asian Journal of Pharmaceutical and Clinical Research 11(5):355, 2018 DOI:10.22159/ajpcr.2018.v11i	https://www.researchgate.net/publication/324875850_Incorporation_of_vitamin_e_onto_cross-linked_galactomannan_phosphate_matrix_and_in_vitro

		5.24645.	study
		9. Q3 Scopus Modified extraction and purity test of Arenga pinnata gum. Asian Journal of Pharmaceutical and Clinical Research 11(13):148, 2018. DOI:10.22159/ajpcr.2018.v11s1.26593.	https://www.researchgate.net/publication/324799945_Modified_extraction_and_purity_test_of_Arenga_pinnata_gum
		10. Q3 Scopus Sulfation of palm seed (Arenga pinnata merr.) galactomannan: Antimicrobial activity and toxicity test. Rasayan J. Chem., 11(1), 294-299(2018) http://dx.doi.org/10.7324/RJC.2018.1112039 .	http://rasayanjournal.co.in/admin/php/upload/347_pdf.pdf
		2018: Konferensi Internasional	
		1. Acetylation of breadfruit utarch by Using Acetic Anhydride. OP Conf. Series: Journal of Physics: Conf. Series1116 (2018) 042047. Doi:10.1088/1742-6596/1116/4/042047	https://iopscience.iop.org/article/10.1088/1742-6596/1116/4/042047/meta
		2. Synthesis and properties of new hydrogel from cross-linked galactomannan boric. OP Conf. Series: Journal of Physics: Conf. Series1116 (2018) 042041. Doi:10.1088/1742-6596/1116/4/042041	https://iopscience.iop.org/article/10.1088/1742-6596/1116/4/042041
		3. Microencapsulation of Vitamin E from palm fatty acid distillate with galactomannan and gum acacia using spray drying method. IOP Conf. Series: Materials Science and Engineering 309 (2018) 012095 doi:10.1088/1757-899X/309/1/012095.	https://iopscience.iop.org/article/10.1088/1757-899X/309/1/012095
		4. Stand structure and carbon stock of tree vegetation in Deleng Macik Taman Hutan Raya Bukit Barisan Karo District, North Sumatra, Indonesia. OP Conf. Series: Journal of Physics: Conf. Series1116 (2018) 052009. doi:10.1088/1742-6596/1116/5/052009	https://iopscience.iop.org/article/10.1088/1742-6596/1116/5/052009
		5. Study of Ficus in West Block Batang Toru Forest Region, North Tapanuli	https://iopscience.iop.org/article/10.1088/1742-

		District, Indonesia. IOP Conf. Series: Journal of Physics: Conf. Series 1116 (2018) 052049. doi:10.1088/1742-6596/1116/5/052049	6596/1116/5/052049
		6. The preparation and characterization of bentonite nanoparticle from Bener Meriah, Indonesia. Journal of Physics Conference Series 1116(4):042011, 2018. DOI: 10.1088/1742-6596/1116/4/042011	https://www.researchgate.net/publication/329890386_The_preparation_and_characterization_of_bentonite_nanoparticle_from_Bener_Meriah_Indonesia
		7. Preliminary study on the fabrication of cellulose nanocomposite film from oil palm empty fruit bunches partially solved into licl/dmac with the variation of dissolution time. IOP Conf. Series: Journal of Physics: Conf. Series 1116 (2018) 042012. doi:10.1088/1742-6596/1116/4/042012	https://iopscience.iop.org/article/10.1088/1742-6596/1116/4/042012
		8. Characterization of composite boards made of oil palm trunk flour/maleic anhydride grafted polypropylene. Journal of Physics Conference Series 1116(4):042045, 2018. DOI: 10.1088/1742-6596/1116/4/042045	https://www.researchgate.net/publication/329890651_Characterization_of_composite_boards_made_of_oil_palm_trunk_flourmaleic_anhydride_grafted_polypropylene
		9. Activity assays of calcinated sarulla natural zeolite (snz-cal) in catalytic hydrocracking rubber seed oil. IOP Conf. Series: Journal of Physics: Conf. Series 1116 (2018) 042035. doi:10.1088/1742-6596/1116/4/042035	https://iopscience.iop.org/article/10.1088/1742-6596/1116/4/042035/meta
		2017: Jurnal Internasional	
		1. Q2 Scopus Effect of N-Doped Graphene for Properties of Pt/N-Doped Graphene Catalyst. Chemistry Select. 2(3) 1188 https://doi.org/10.1002/slct.201601561 , 2017	https://chemistry-europe.onlinelibrary.wiley.com/doi/abs/10.1002/slct.201601561
		2. Q3 Scopus Effect of platinum loading on graphene nano sheets at cathode. Orient. J. Chem. 33(1). DOI : http://dx.doi.org/10.13005/ojc/	http://www.orientjchem.org/vol33no1/effect-of-platinum-loading-on-graphenenano-sheets-at-cathode/

		330114	
		3. Q4 Scopus Isolation and characterization of flavonoids isolated from leaves of Benalu Jeruk (<i>Scurrula fusca</i> G. Don) as antioxidant. Asian Journal of Chemistry 29(8):1743-1745 . January 2017 with 100 Reads DOI: 10.14233/ajchem.2017.20604 C.	https://www.researchgate.net/publication/317556601_Isolation_and_Characterization_of_Flavonoids_Isolated_from_Leaves_of_Benalu_Jeruk_Scurrula_fusca_G_Don_as_Antioxidant
		4. Q3 Scopus Synthesis of CMC from palm midrib cellulose as stabilizer and thickening agent in food. Oriental J. Chem. 33(1). DOI : http://dx.doi.org/10.13005/ojc/330162	http://www.orientjchem.org/vol33no1/synthesis-of-cmc-from-palm-midrib-cellulose-as-stabilizer-and-thickening-agent-in-food/
		2017: Konferensi Internasional	
		1. Synthesis of Ni supported by CaO from Ni(0)L complexes (L=dihydrazine, bisethylenediamine). AIP Conference Proceedings 1803, 020050 (2017); https://doi.org/10.1063/1.4973177 .	https://aip.scitation.org/doi/abs/10.1063/1.4973177
		2015: Jurnal Internasional	
		1. Q4 Scopus Antioxidant and antibacterial activity of some leaves extracts (Methanol, ethyl acetate and N-Hexane) of <i>scurrula fusca</i> G.Don. International Journal of PharmTech Research	
		2018: Konferensi Internasional	
		1. Role of TiO ₂ pillared bentonite-Co catalyst Ni to convert glucose hydrogenation to be sorbitol Journal of Physics: Conf. Series 1116 (2018) 042038. doi:10.1088/1742-6596/1116/4/042038	https://iopscience.iop.org/article/10.1088/1742-6596/1116/4/042038/pdf
		2. Performance of graphite and graphene as electrodes in primary cell battery. Journal of Physics: Conference Series, Volume 1116, Issue 4. doi:10.1088/1742-6596/1116/4/042034	https://iopscience.iop.org/article/10.1088/1742-6596/1116/4/042034/pdf
		3. Modification of	https://aip.scitation

		PLA/PCL/Aceh's bentonite nanocomposites as biomedical materials AIP Conference Proceedings 2049, 020008 (2018); https://doi.org/10.1063/1.5082413	.org/doi/pdf/10.1063/1.5082413
3.2.	PUI-PT menghasilkan karya-karya berbasis sumber daya lokal yang dapat diaplikasikan untuk kepentingan penguatan produk, komunitas, dan pemerintah.	PUI Karbon memiliki produk unggulan diantaranya grafit dan grafena. Grafit saat ini diperoleh dari bahan tambang mineral (http://psdg.bgl.esdm.go.id/index.php?option=com_content&view=article&id=1207&Itemid=610) artinya merupakan SDA yang tidak dapat diperbaharui. Pada bagian lain, grafena diproduksi dengan menggunakan bahan baku grafit. Sehingga, tanpa grafit tidak dapat diproduksi grafena (Metode Kimia). Oleh karena itu sejak 2020, PUI Karbon berhasil mensintesis grafit dan grafena dari kelapa. a. New route: Conversion of coconut shell to be graphite and graphene nanosheets. Journal of King Saud University – Science 32 (2020) 189–190. https://doi.org/10.1016/j.jksus.2018.04.016 .	https://reader.elsevier.com/reader/sd/pii/S1018364718300971?token=1FA5A2AFA7F23BB847665C8E415C8EA3C2C9ACD9FCE4AB83D174DC5127816FD913C4F3D9A73E2601470C10B35333C55A
		b. Permohonan Paten Sederhana. Judul Inovasi :PROSES PEMBUATAN GRAFIT DARI KELAPA. BERITA RESMI PATEN SEDERHANA SERI-A No.BRP594/S/VII/2018 DIUMUMKAN TANGGAL 20 JULI 2018 s/d 20 SEPTEMBER 2018.	https://dgip.go.id/images/ki-images/pdf-files/publikasi/publikasi_paten/2018/brps594.pdf
3.3.	PUI-PT mengelola kegiatan diseminasi berskala internasional serta jurnal yang terakreditasi.	Tim PUI Karbon dipercaya sebagai: 1. Rikson Siburian-Editor pada Probe-Chemistry (Jurnal Internasional	http://probe.usp-pl.com/index.php/CHE/about/editorialTeam
		2. Rikson Siburian- Speaker pada Global Congress and Expo on Battery and Fuel Cell Technology, 7-8 September 2020, Canada.	https://www.scientificfederation.com/battery-fuelcell-2020/speakers.php

		3. Editor dari Journal of Chemical Natural Resources: Saharman Gea, PhD dan Prof. Dr. Basuki Wirjosentono, MS	https://talenta.usu.ac.id/JCNaR/about/editorialTeam
		4. Dewan Pengarah Steering Board pada MAJALAH POLIMER INDONESIA Indonesian Polymer Journal: Prof. Basuki Wirjosentono, PhD.	https://simdos.unud.ac.id/uploads/file_penelitian_1_dir/46bb6b4ef109db6b7ae2025c74942ecb.PDF
		5. Editor tim dari Journal of Technomaterials Physics: Prof. Dr. Kerista Sebayang.	https://talenta.usu.ac.id/JoTP/about/editorialTeam
3.4.	PUI-PT memiliki rancangan serta menghasilkan tenaga-tenaga profesional sesuai bidangnya untuk jenjang S-3 guna mendukung penguatan SDM nasional.	Penguatan SDM PUI Karbon diatur dalam Naskah Akademik PUI Karbon yaitu:	
		a. Visi PUI Karbon. Tim PUI Karbon memiliki keunggulan dibidang Karbon	Naskah Akadik PUI Karbon, Halaman 16.
		b. Tahapan capaian PUI Karbon yang salah satu fokus SDMnya adalah kompetensi dibidang Karbon, berstandar nasional maupun internasional, mampu memproduksi dan mengkomersialisasinua.	Naskah Akadik PUI Karbon, Halaman 18.
		c. Sasaran dan Strategi Pencapaian PUI Karbon Prioritas Utamanya: 1. Kapasitas SDM (Peningkatn, Pengembangan, Dukungan Sarana-Prasarana, Anggaran, Jaminan Mutu, Pengembangan Jaringan, informasi dan Jejaring)	Naskah Akadik PUI Karbon, Halaman 23-24.
		d. Indikator Kinerja PUI Karbon: i) Rasio SDM berdasarkan tingkat pendidikan dan kompetensi. ii) Publikasi dijurnal nasional dan internasional. iii) Lulusan S3 yang dihasilkan sesuai tema riset unggulan PUI Karbon. iv) Perolehan paten dan HaKi. v) Kerjasama riset dan non-riset. vi) Hilirisasi Produk Unggulan PUI Karbon. vii) Perolehan Economic	Naskah Akadik PUI Karbon, Halaman 25-27.

		Benefit dan Social Impact bagi masyarakat.	
		e. Arah kebijakan PUI Karbon: 3. Meningkatkan kualitas SDM	Naskah Akadik PUI Karbon, Halaman 47.
		f. Program kerja PUI Karbon: 11. Meningkatkan kemampuan peneliti dan kualitas penelitian melalui pelatihan dan kunjungan kelembaga- lembaga nasional dan internasional yang mumpuni dibidang karbon dan material. 14. Menghilirkan hasil penelitian untuk menghasilkan produk unggulan (Grafit, Grafena, N-Grafena, turunan grafitik karbon, elektroda katalis baterai dan sel bahan bakar serta katalis dan biokatalis oleokimia) PUI Karbon. 16. Menginisiasi dan meningkatkan kompetensi PUI Karbon berskala internasional, dan merintis menuju joint dan double degree. 21. Mengembangkan kemitraan strategis di bidang unggulan PUI Karbon sehingga menjadi rujukan PUI nasional maupun internasional. 30. Meningkatkan kemitraan strategis PUI Karbon bersama Pemerintah, Pelaku Usaha, Masyarakat Industri dan Lembaga-lembaga Riset dan Pengembangan nasional dan internasional untuk mencapai masyarakat mandiri. 33. Merekrut SDM PUI Karbon berkualitas dari tingkat nasional hingga internasional. 34. Menginisiasi kolaborasi riset dan sumberdaya secara nasional dan internasional. 36. Memberikan insentif riset bagi mahasiswa S1, S2 dan S3.	Naskah Akadik PUI Karbon, Halaman 50.

Form Asesmen Mutu Standar 4 (Unggul Dampak Luaran)

Standar 4 Unggul Dampak Luaran			
No.	Komponen Mutu	Deskripsi PUI-PT	Bukti
4.1.	PUI-PT melakukan diseminasi keilmuan serta layanan kepekarannya untuk masyarakat melalui kegiatan pelatihan serta aktivitas lain yang bersifat edukasi ke lingkungan yang lebih luas.	<p>Tim PUI Karbon aktif dalam melaksanakan diseminasi keilmuannya melalui kegiatan-kegiatan Pengabdian Kepada Masyarakat, yaitu:</p> <ol style="list-style-type: none"> 1. Rikson AsmanFertiles Siburian: <ol style="list-style-type: none"> a. Entrepreneur Berbasis Ilmu Kimia dalam Pemanfaatan Limbah Rumah Tangga di SMP Eka Hudda & Madrasah Aliyah Muhammadiyah 09 Sidomulyo Kuala Madu b, Pemanfaatan limbah tempurung kelapa sebagai elektroda pada baterai primer 2. Kerista Sebayang: Peningkatan Efisiensi Pengeringan Ampas Kelapa dengan MetodePengeringan Paksa pada UMKM MASTAKALAPA dan Santan Prima. 3. Saharman Gea: Peningkatan Kualitas Asap Cair melalui Penyediaan Tar Scrubber pada UMKM Santan COCO dan Santan COPRO 4. Basuki Wirjosentono: IbM: PENINGKATAN TEKNOLOGI PENGOLAHAN SAMPAH PLASTIK DAN LIMBAH KAYU MENJADI PAPAN PARTIKEL BAGI KELOMPOK MASYARAKAT DI KECAMATAN TANJUNG MORAWA KABUPATEN DELI SERDANG 5. Helmina Br Sembiring: Penggunaan peralatan penggiling kotoran kambing sebagai pupuk yang dicampur dengan dolomit didesa Persadanta Kecamatan Barusjahe, Kabupaten Karo. 6. Kerista Tarigan: Pembelajaran dan Pelatihan Elektronika serta Pembuatan Power Supply pada Lab Fisika di YPK Masehi Berastagi. 	<p>https://simabdimas.usu.ac.id/files/upload/announces/b0d3a1fd3a72e869c47e957d20e238dc.pdf dan https://simabdimas.usu.ac.id/files/upload/announces/0d6b3976f93a842d585524e0bcb8b308.pdf</p>

		7. Minto Supeno: Aplikasi Batok Kelapa untuk Pembuatan Antena TV di Madrasah Aliyah Muhammadiyah 09 Kwala Madu. 8. Juliati Br Tarigan: Pelatihan Pembuatan Salad Dressing	
		9. Narasumber pada disiminasi hasil riset BPOM	Lamp. B-S4
4.2.	PUI-PT melakukan kerja sama riset sesuai kepekarannya baik berskala nasional maupun internasional.	Tim PUI Karbon aktif melakukan kerjasama secara nasional dan internasional yaitu dengan:	
		1. Institut sel fuel, UKM Malaysia	Lamp.B-S4-1
		2. Kyoto University-Graduate School of Asian and African Area Studies	Lamp.B-S4-2
		3. Kementerian PU dan SETA Spanyol	Lamp. B-S4-3
		4. SACSEM-University of Tsukuba, Tsukuba, Japan	Lamp. B-S4-4
		5. UiTM, Mara, Malaysia	Lamp. B-S4-5
		6. Pembimbingan bersama S2 dan S3 dengan UiTM, Mara Malaysia	Lamp. B-S4-6
4.3.	PUI-PT memfasilitasi dan menjadi wahana, media bagi pembinaan UMKM, startup, magang mahasiswa bersertifikat, rintisan industri (<i>startup</i>) yang berdampak nyata ke masyarakat.	PUI Karbon telah memprogramkan pendirian startup pada indikator-indikator capaian PUI Karbon:	
		48. Jumlah perusahaan rintisan (<i>start up</i>) dibidang Karbon.	Naskah Akademik PUI Karbon Halaman 57
		49. Jumlah perusahaan rintisan (<i>start up</i>) yang sukses.	Naskah Akademik PUI Karbon Halaman 57
		79. Persentase dosen Tim PUI Karbon mengikuti magang/pelatihan	Naskah Akademik PUI Karbon Halaman 58
		82. Persentase mahasiswa bersertifikat kompetensi dan profesi	Naskah Akademik PUI Karbon Halaman 58
		82. Persentase mahasiswa bersertifikat kompetensi dan profesi	Naskah Akademik PUI Karbon Halaman 58
		87. Jumlah mahasiswa berwirausaha dibidang Karbon.	Naskah Akademik PUI Karbon Halaman 58

Form Isian Penilaian Kinerja PUI-PTOS–*Academic Excellence*

A1 Daftar sebagai pembicara undangan dalam konferensi internasional

No.	Nama Pembicara	Nama <i>Event</i> Internasional	Tanggal (dd/mm/yy)	Tempat
1.	Prof. Dr. Kerista Sebayang	International Conference on Natural and Environmenttal Sciences ICONES 2019	26-27 July 2019	Banda Aceh

A2 Daftar sebagai pemakalah undangan internasional

No.	Nama Pembicara	Nama <i>Event</i> Internasional	Tanggal (dd/mm/yy)	Tempat

A3 Daftar kunjungan lembaga internasional ke PUI-PT

No.	Nama Lembaga Internasional	Nama <i>Grup Leader</i>	Tanggal (dd/mm/yy)	Tempat

A4 Daftar publikasi ilmiah per tahun dalam jurnal ilmiah nasional terakreditasi

No .	Nama <i>Author(s)</i>	Nama Jurnal Nasional	Judul Makalah	Volume/Tahun Terbit
1.	Toto Sudiro, Perdamean Sebayang, Didik Aryanto, April Imeldia Juita Hia, Kerista Sebayang.	Jurnal Teknologi Indonesia,	Structure and Hardness Characteristics of 50 Cr-50Al Coating Prepared by A Mechanical Alloying Technique:Effects of Heat Treatment Temperature,	Vol. 38, No. 3, 2015, ISSN: 0126-1533, Terakreditasi LIPI No. 590/AU3/P2M I- LIPI/03/2015, p 156-162, 2015
2.	Ahmad Maulana Soehada, Kerista Sebayang, Toto Sudiro, Candra Kurniawan, Perdamean Sebayang.	Jurnal Sains Materi Indonesia	Effect of Mn-Ti Ions Doping and Sintering Temperature of Properties BariumHexaferrite,	Vol. 15, No. 4, Juli 2014, ISSN:1411-1098, Terakreditasi LIPI No. 401/Au3/P2M I- LIPI/03/2012, 2014
3.	Evi Suriani Can Aritonang, Kerista Sebayang, Timbangan Sembiring	Jurnal Material Teknologi,	Pembuatan dan karakterisasi Genteng Komposit Polimer Berbasis Polipropilen (PP) dengan Menambahkan Aspal, Pasir serta Fiberglass sebagai	Vol. 1 Oktober 2013, ISSN:2338-6444, 2013

			Bahan Penguat	
4.	Irma Afrianti Simanjuntak, Timbangan Sembiring, Kerista Sebayang,	Jurnal Material Teknologi,	Pembuatan dan karakterisasi Genteng Komposit Polimer Berbasis HDPE dengan Penambahan Serat Pendek Tandan Kosong Kelapa Sawit serta Aspal dan Pasir,	Vol. 1 Oktober 2013, ISSN:2338-6444, 2013
5.	Siti Nurhabibah H, Kerista Sebayang, Perdinan Sinuhaji,	Jurnal Material Teknologi,	Pembuatan dan karakterisasi Papan Gypsum Plafon yang Dibuat dari Serat Enceng Gondok Gypsum-Castable,	Vol. 2 Oktober 2013, ISSN:2338-6444, 2013
6.	Roy Tenno Siburian, Nasruddin, Kerista Sebayang, ,	Jurnal Al-Ulum,	Analisis Karakteristik Struktur Mikro Bead pada bahan Penghantar Listrik tembaga Akibat Hubungan Singkat Listrik, beban Berlebih dan Panas Kebakaran	Vol. III, Desember 2015, No. 2, ISSN:2338-5391, 2015
7.	Saharman Gea, Kerista Sebayang, T. Alif Aththorick,	Jurnal Abdimas Talenta	Peningkatan Kualitas Produksi Santan Kelapa Sebagai Bahan Baku Industri Kuliner di Kota Medan,	I (1) 2016:92-96, e-ISSN:2549-418X, p-ISSN:2549-4341, 2016
8.	Hilda Ayu Marlina, Agung Imaduddin, Kerista Sebayang, Pius Sebleku	Journal of Aceh Physics Society	Pengaruh Proses Penarikan (Rolling) Terhadap Suhu Kritis (Tc) dalam pembuatan Kawat Superkonduktor Ag/Bi _{1,6} Pb _{0,4} Sr ₂ Ca ₂ Cu ₃ O ₁₀ dengan Penambahan CNT	online ISSN 2355-8229, Vol. 7, No. 2 pp.31-38, 2018, 2017
9.	Slamet Priyono, Mia Aulia Dhika, Kerista Sebayang, Ahmad Subhan, Bambang Prihandoko,	Jurnal Sains Materi Indonesia (JUSAMI)/Indonesian Journal of Materials Science,	Pembuatan Anoda Li ₄ Ti ₅ O ₁₂ dan Studi Pengaruh Ketebalan Elektroda Terhadap Performa Elektrokimia Baterai Ion Lithium,	Vol. 17, No. 4, Juli 2016
10	MS Sihotang, DAA Puteh, K Sebayang, L Hakim	Journal of Technomaterials Physics	Model Program Processing of Fishbone Waste Transfer for the Application of Drinking Water Products and Test Characterization	Vol 1 (1), 38-44, 2020
11	P Sinuhaji, K Sebayang, S Humaidi, S Susilawati, A Warman	Jurnal Penelitian Sains	Analisis Sistem Kristal dan Unsur serta Topografi Permukaan Batu Api dengan Metode XRD dan SEM-EDS	19 (2), 62-65, 2019

12	K Sebayang, H Ginting, A Andriyani, AS Harahap ABDIMAS TALENTA:	Jurnal Pengabdian Kepada Masyarakat	The Construction of oven designed by heat exchanger in drying porang at SME Coco Prima	4 (2), 119- 124, 2019
13	H Sembiring	Journal of Chemical Natural Resources	Antibacterial Activities of Rough Lemon (Citrus jambhiri Lush) Rind Essential Oil	1 (1), 12-18, 2019
14	HB Sembiring	Chimica et Natura Acta	Aktivitas Antibakteri dan Antioksidan Minyak Atsiri Daun Asam Jungga (Citrus jambhiri Lush)	6 (1), 19-24, 2018
15	HB Sembiring, S Lenny, L Marpaung	Chimica et Natura Acta	Aktivitas antioksidan senyawa flavonoida dari daun benalu kakao (Dendrophthoe pentandra (L.) miq.)	4 (3), 117- 122, 2016
16	J Ginting, A Warman, JB Tarigan	Jurnal Abdimas TALENTA	The roasting coffee equipment with automatic temperature control and steam/hot air disposal to accelerate cooling process of supply results in village fruit of regency karo	3 (1), 59-62, 2018
17	R Zulmi, J Kaban, J Tarigan	Jurnal Kimia Mulawarman	Incorporation vitamin e from pfad in matrix of mixed galaktomanan kolang-kaling (arenga pinnata) and gum acasia	15 (2), 87-93, 2018
18	J Ginting, JB Tarigan	Jurnal Abdimas TALENTA	Penggunaan peralatan pengupas kulit manis kopi di desa buah raya kabupaten karo	2 (2), 196- 199, 2017
19	S Perangin- angin	Journal of Chemical Natural Resources	Synthesis Of 4-Alil-6- (Hydroxymethyl)-2-Methoxy Phenol Compounds from Eugenol Through Mannich Reaction Followed Methylation with Methyl Iodide and Substitution Using NaOH	1 (1), 75-85, 2019
20	AH Iswanto, YS Siregar, A Susilowati, A Darwis, R Hartono, B. Wirjosentono. ...	Biodiversitas Journal of Biological Diversity	Variation in chemical constituent of Styrox sumatrana wood growing at different cultivation site in North Sumatra, Indonesia	20 (2), 448- 452, 2019
21	Z Telaumbanua, B Wirjosentono, E Eddyanto	Jurnal Teknologi Kimia Unimal	Pemanfaatan Asap Cair Dari Tempurung Kelapa Sebagai Koagulan Komersial Karet Alam Nias Utara	2 (2), 55-67, 2107

22	H Agusnar, B Wirjosentono, T Rihayat, Z Salisah	Journal of Physics: Conference Series	Synthesis and characterization of poly (lactic acid)/chitosan nanocomposites based on renewable resources as biobased-material	953 (1), 012015, 2018
23	R Mirdayanti, B Wirjosentono, E Marlianto	Jurnal Serambi Engineering	Analisis Edible Film dari Campuran Keratin dan Pati Jagung	3 (2), 2018
24	Z Nasution, H Agusnar, Z Alfian, B Wirjosentono	Jurnal Teknologi Kimia Unimal	Pengaruh viskositas kitosan dari berbagai berat molekul terhadap pembuatan kitosan nanopartikel menggunakan Ultrasonic Bath	2 (2), 68-79, 2017
25	BC Sitanggang, B Wirjosentono, M Ginting	Jurnal Pendidikan Kimia	Preparation of Fe-chitosan schiff base complex	8 (3), 203-206, 2016
26	F Sitorus, A Ginting, B Wirjosentono	Jurnal Inotera	Penyelidikan Karakteristik Lapisan Diamond Film Pahat Karbida Terhadap Pembebanan Mekanik Pada Pembubutan Kering	1 (1), 32-45, 2016
27	M Iqbal, HM Siregar, I Isranuri, B Wirjosentono	Jurnal Teknik dan Teknologi	Uji performa serat batang pinang raja menjadi kotak speaker tipe single reflex bandpass dengan matrik poliuretan dan gipsum	11 (22), 20-25, 2016
28	I Isranuri, B Wirjosentono	Jurnal Teknik dan Teknologi	Kajian karakteristik absorpsi suara material peredam suara dari serat batang pinang raja dengan menggunakan poliuretan dan gipsum sebagai matrik	11 (22), 32-39, 2016
29	DKB Rumondang Bulan, Firman Sebayang	PROSIDING SEMIRATA 2017 BIDANG MIPA BKS - PTN WILAYAH BARAT	Pengaruh waktu hidrolisis terhadap kadar glukosa dari selulosa ampas tebu menggunakan enzim selulase dari pankreas keong mas (pomacea caniculata)	1594, 2017
30				

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A5 Daftar publikasi ilmiah per tahun dalam jurnal ilmiah internasional

N o.	Nama Author(s)	Nama Jurnal	Judul Makalah	Volume/Tahun Terbit
1	B Suryanto, TI Nasution, K Sebayang, S Khanifah	IOP Conferenc e Series: Materials Science	Utilization of sensor TGS 821 as hydrogen detection of result water electrolysis process in real time with DAQ on PC	725 (1), 012055, 2020

			and Engineering		
2	Z Noer, Sembiring, Sebayang , Septawendar, Sunendar	T K R B	AIP Conference Proceedings	The effect of the calcination atmosphere in the formation of mineral sodium titanate	2221 (1), 110027, 2020
3	J Siregar, Sebayang , Yuliarto, Humaidi	K B S	AIP Conference Proceedings	XRD characterization of Fe ₃ O ₄ -ZnO nanocomposite material by the hydrothermal method	2221 (1), 110008, 2020
4	PP Sari, Nasution, Sebayang , Banurea	TI K R	AIP Conference Proceedings	A real-time phytoplankton growth monitoring using TCS-3200 color sensor	2221 (1), 100003, 2020
5	J Pane, Simbolon, Hermanto, Sebayang , Situmorang, Sudiro	DH B K M T	AIP Conference Proceedings	High temperature oxidation and corrosion of spark plasma sintered FeCrAlTiY-10 mass% MoSi ₂ coating on low carbon steel	2221 (1), 110024, 2020
6	I Dayana, Sembiring, Tetuko, Sembiring, Sebayang , Marbun	T AP K K J	AIP Conference Proceedings	Study of thermal conductivity of Fe ₃ O ₄ nanoparticles coated with TEOS	2221 (1), 110015, 2020
7	MZ Afdlan, Sembiring, Darsono, Imaduddin, Lubis, Sebayang .	T N A H K	AIP Conference Proceedings	The effect of Mg, Na, and Ce addition on the superconducting properties of Bi _{1.6} Pb _{0.4} Sr ₂ Ca _{2-x} M _x Cu ₃ O _y prepared sol-gel method	2221 (1), 110006, 2020
8	WA Ritonga, Sembiring, Afdlan, Sebayang , Susilawati, Lubis.	T MZ K H	AIP Conference Proceedings	Effect of dopant on superconductor Bi _{1.6} Pb _{0.4} Sr ₂ Ca _{2-x} M _x Cu ₃ O _y (M = Ce, Na, Mg) phase 2223 by solid method	2221 (1), 110011, 2020
9	M Hasanah, Sembiring, Sebayang , Humaidi	T K S	AIP Conference Proceedings	Effect of the mass and volume shrinkage of porous ceramics on Sinabung volcanic ash	2221 (1), 110029, 2020
10	T Sembiring, Sasniati, Muljadi, Sinuhaji, Sebayang	P P K	AIP Conference Proceedings	Study of physical and magnetic properties of barium hexaferrite substituted by Nd ₂ O ₃	2221 (1), 110025, 2020
11	DH Simbolon, J	J	AIP	Improvement of carbon	2221 (1), 110019, 2020

	Pane, Hermanto, Situmorang, Sebayang , Sudiro	B M K T	Conferenc e Proceeding s	steel resistance against high temperature oxidation and corrosion by flame sprayed FeCrAlTiY-30 mass% CoNiCrAlY coating using N2 pressure	
12	DH Simbolon, Pane, Hermanto, Afandi, Sebayang , Situmorang	J B A K M	Protection of Metals and Physical Chemistry of Surfaces	High Temperature Oxidation Resistance of FeCrAlTiY-MCrAlY (M= Co and Ni) Coatings On Carbon Steel Prepared By Flame Spray Technique	56, 169-179, 2020
13	AS Purba, Nasution, Sebayang , Khanifah	TI K S	Journal of Physics: Conference Series	Improving zeolite power of paha natural adsorption as the hydrogen filter with the addition of blood clams (Anadara Granosa) as the filler	1185 (1), 012005, 2019
14	N Noor, Sebayang , Setiawan	K A	IOP Conference Series: Earth and Environmental Science	Experimental investigation of a cold storage box with Aceh locally produced hydrated salt as phase change materials: effect of salt treatment	364 (1), 012019, 2019
15	T Sembiring, Sitepu, Rianna, Warman, Sinuhaji, Sebayang	E M A P K	Functional materials	Fabrication and characterization of palm sugar tree (Arenga pinnata) fiber composites reinforced by polyester resin	26(1), 2019, 121-126
16	EC Sitepu, Sembiring, Sebayang , Sumirat, Rianna, Marlianto	T K I M E	Case Studies in Thermal Engineering	A study of the use of palm fiber and palm shell as a thermal neutron radiation shielding material	14, 100468, 2019
17	K Sebayang , Aryanto, Simbolon, Kurniawan, Hulu, T Sudiro.	D S C SF	IOP Conference Series: Materials Science and Engineering	Effect of sintering temperature on the microstructure, electrical and magnetic properties of Zn _{0.98} Mn _{0.02} O material	309 (1), 012119, 2019
18	P Sardjono, Sebayang	K	Journal of Physics: Conference Series	Influence Composition of Fe ₂ O ₃ Isotropic Magnet BaFe ₁₂ O ₁₉ on Microstructure and Magnetic Properties.	1091 (1), 012025, 2018
19	HA Marlina, Imaduddin, Sebayang ,	A K P	Journal of Physics: Conference	Fabrication of SS316-Sheathed BPSCCO Superconducting Wire	1120 (1), 012034, 2018

	Sebleku, Herbirowo	S	e Series	with the Addition of Carbon Nanotubes	
20	T Sembiring, A Imaduddin, WA Ritonga, MZ Afdlan, K Sebayang .		Journal of Physics: Conference Series	Characterization of Physical and Electrical Properties of Bi _{1-x} Pb _x 0.4Sr ₂ Ca _{2-x} M _x Cu ₃ O _y (M= Na, Mg, Ce) Superconductor	1120 (1), 012099, 2018
21	EC Sitepu, T Sembiring, K Sebayang , Sumirat		Journal of Physics: Conference Series	The analysis of palm fiber and palm fiber-b ₄ c potential as a shielding for thermal neutron radiation	1120 (1), 012100, 2018
22	K Sebayang, R Siburian, M Supeno		Oriental Journal of Chemistry	Graphene Nanosheets Effect to Improve CO-Tolerance of Pt/Graphene Nanosheets Catalyst	34(6):2814-2818, 2018
23	K Sebayang , A Imaduddin, HA Marlina, P Sebleku, S Herbirowo		Journal of Physics: Conference Series	The effects of carbon nanotubes (CNT) on fabrication of Ag/Bi _{1-x} Pb _x 0.4Sn ₂ Ca ₂ Cu ₃ O ₁₀ wire	1116 (3), 032029, 2018
24	DA Barus, K Sebayang , J Ginting, RT Ginting		Journal of Physics: Conference Series	Fabrication of Solution-Processed Methylammonium Lead Iodide Perovskite Solar Cells and Photodetector	1116 (3), 032005, 2018
25	MN Nasruddin, T Khairuman, P Sebayang, K Sebayang , YA Ginting.		Journal of Physics: Conference Series	Study of Particle Size and Affix Fe in Permanent Magnet Materials BaFe ₁₂ O ₁₉ against Their Physical Properties	1116 (3), 032021, 2018
26	T Sembiring, K Sebayang , P Sinuhaji		Journal of Physics: Conference Series	Characterization of Biocomposite Materials based on the Durian Fiber (Durio Zibethinus Murr) Reinforced using Polyester Resin	1116 (3), 032031, 2018
27	S Gea , KM Pasaribu, K Sebayang , E Julianti, SA Amaturahim, SU Rahayu, ...		AIP Conference Proceedings	Enhancing the quality of nata de coco starter by channeling the oxygen into the bioreactor through agitation method	2049 (1), 020064, 2018
28	S Gea , DA Barus, YS Sibarani, JN Panindia, K Sari, Sebayang , ...		Journal of Physics: Conference Series	The study on physical and mechanical properties of latex/graphene oxide composite film	1120 (1), 012052, 2018
29	DA Barus, K		Journal of	Effect of Chemical	1116 (3), 032006, 208,

	Sebayang, J Ginting, RT Ginting	Physics: Conferenc e Series	Treatment on Conducting Polymer for Flexible Smart Window Application	2018
30	M Ginting, S Taslina, K Sebayang, D Aryanto, T Sudiro, P Sebayang	AIP Conferenc e Proceeding s	Preparation and characterization of zinc oxide doped with ferrite and chromium	1862 (1), 030062, 2017
31	R Siburian, K Sebayang, M Supeno, H Marpaung	Chemistry Select	Effect of N-Doped Graphene for Properties of Pt/N-Doped Graphene Catalyst	2 (3), 1188-1195, 2017
32	G Gultom, B Wirjosentono, M Ginting, K Sebayang	IOP Conferenc e Series: Materials Science and Engineerin g	Effects of natural zeolite and ferric oxide to electromagnetic and reflection loss properties of polyurethane nanocomposite	223 (1), 012031, 2017
33	R Siburian, K Sebayang, M Supeno, H Marpaung	Oriental Journal of Chemistry	Effect of Platinum loading on Graphene Nano Sheets at Cathode	33(1):134-140, 2017
34	C Kurniawan, MM Nainggolan, K Sebayang, M Ginting, P Sebayang	Journal of Physics: Conferenc e Series	Preparation and characterization of Fe-Mn- doped Barium Hexaferrite permanent magnet	817 (1), 012057, 2017
35	K Sebayang, M Sigiro	IOP Conferenc e Series: Materials Science and Engineerin g	Piezoreflectance study of Nb-doped MoS ₂ single crystals	237 (1), 012041, 2017
36	M Ginting, D Aryanto, C Kurniawan, AY Sari, A Subhan, T Sudiro, K. Sebayang, ...	IOP Conferenc e Series: Materials Science and Engineerin g	Effects of Sintering Holding Time on the Structural, Electrical and Magnetic Properties of Zn _{0.95} Ni _{0.05} O	202 (1), 012033, 2017
37	P Sebayang, AY Sari, D Ginting, Y Allan, K Sebayang	AIP Conferenc e Proceeding s	Characteristics of B ₂ O ₃ and Fe added into BaFe ₁₂ O ₁₉ permanent magnets prepared at different milling time and sintering temperature	1711 (1), 020004, 2016
38	G Gultom, B Wirjosentono,	Procedia Chemistry	Preparation and Characterization of	19, 441-446, 2016

	K Sebayang, M Ginting		Microwave-absorption of Sarulla North Sumatra Zeolite and Ferric Oxide-filled Polyurethane Nanocomposites	
39	AIJ Hia, T Sudiro, D Aryanto, K Sebayang	Journal of Physics: Conference Series	Cr-Al coatings on low carbon steel prepared by a mechanical alloying technique	739 (1), 012131, 2016
40	S Sembiring, W Simanjuntak, R Situmeang, A Riyanto, K Sebayang	Ceramics International	Preparation of refractory cordierite using amorphous rice husk silica for thermal insulation purposes	42 (7), 8431-8437, 2016
41	Minto Supeno, Rikson Siburian	Journal of King Saud University - Science	New Route: Conversion of Coconut Shell to Graphite and Graphene Nano Sheets	32(1), 2018
42	R Siburian, H Sihotang, SL Raja, M Supeno, C Simanjuntak	Oriental Journal of Chemistry	New Route to Synthesize of Graphene Nano Sheets	34 (1), 182-187, 2018
43	M Supeno, N Pasaribu, R Siburian	Oriental Journal of Chemistry	Role of TiO ₂ Pillared Bentonit and Catalyst Nickel for Hydrogenation Glucose to Generate Sorbitol	34 (6), 2819-2825, 2018
44	R Siburian, S Perangin-Angin, H Sembiring, H Sihotang, LR Saur, M. Supeno...	Oriental Journal of Chemistry	Facile Method to Synthesize of N-Graphene Nano Sheets	34 (4), 1978, 2018
45	R Siburian, DR Sari, J Gultom, H Sihotang, SL Raja, M Supeno	Journal of Physics: Conference Series	Performance of graphite and graphene as electrodes in primary cell battery	1116 (4), 042034, 2018
46	Rikson Siburian, Kerista Sebayang, Minto Supeno and Harlem Marpaung	Orient J Chem	Effect of Platinum loading on Graphene Nano Sheets at Cathode	2017;33(1), 2017.
47	Simanjuntak C, Siburian R, Marpaung H, Tamrin.	Heliyon	Properties of Mg/graphite and Mg/graphene as cathode electrode on primary cell battery.	6(1): e03118. 2020 doi: 10.1016/j.heliyon.2019.e03118. eCollection
48	Henni Cintya, Jansen	Open Access	Analysis of Nitrosamines in Processed Meat	7(8): 1382–1387. 2019 doi:10.3889/oamjms.20

	Silalahi, Effendy De Lux Putra, and Rikson Siburian	Maced J Med Sci.	Products in Medan City by Liquid Chromatography-Mass Spectrometry	19.261
49	R Siburian , D R Sari, J Gultom, H Sihotang, S L Raja, J Gultom and M Supeno	Journal of Physics: Conference Series,	Performance of graphite and graphene as electrodes in primary cell battery	1116, 4, 2018
50	Ridwan, Basuki Wirjosentono , Tamrin, R. Siburian , Teuku Rihayat, and Nurhanifa	AIP Conference Proceedings	Modification of PLA/PCL/Aceh's bentonite nanocomposites as biomedical materials	2049, 020008 (2018); https://doi.org/10.1063/1.5082413
51	L. Simatupang, Rikson Siburian , P. Sitanggang, Maryati Doloksaribu	Rasayan Journal of Chemistry	Synthesis and application of silica gel base on mount Sinabung's fly ash for Cd(II) removal with fixed bed column Article	11(2): 819-827, 2018 DOI: 10.7324/RJC.2018.1122091
52	Cintya H, Silalahi J, De Lux Putra E, Siburian R	F1000 Research	The influence of storage condition on nitrite, nitrate and vitamin C levels in vegetables	DOI: 10.12688/f1000research.16853.1, 2018
53	Ratih, D., Siburian, R. , Andriayani	Rasayan Journal of Chemistry	The performance of graphite/n-graphene and graphene/n-graphene as electrode in primary cell batteries	11(4):1649-1656, 2018 DOI: 10.31788/RJC.2018.1145007
54	Cintya, H., Silalahi, J., De Lux Putra, E., Siburian, R.	Oriental Journal of Chemistry	The Influence of Fertilizer on Nitrate, Nitrite and Vitamin C Contents in Vegetables	34(5): 2614-2621, 2018 DOI: 10.13005/ojc/340552
55	Nurtjahja, K., Zuhra, C.F., Sembiring, H. , (...), Gultom, B.N.L., Sartini, S	Czech Journal of Food Sciences,	Fungal contamination spices from Indonesia with emphasis on Aspergillus flavus	37, (5): 338–344, 2019
56	F Sebayang, H Sembiring	Oriental Journal of Chemistry	Synthesis of CMC from palm midrib cellulose as stabilizer and thickening agent in food	33 (1), 519, 2017
57	Sembiring, H.B. , Barus, T., Marpaung, L., Simanjuntak, P.	Asian Journal of Chemistry	Isolation and characterization of flavonoids isolated from leaves of Benalu Jeruk (<i>Scurrula fusca</i> G. Don) as antioxidant	29(8):1743-1745, 2017
58	J Ginting, N Bangun, HB Sembiring , NK	Journal of Physics: Conference	The effect of thermal and organic additive in morphology of ceramic	817 (1), 012023, 2017

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59	M Ginting , SP Pasaribu, I Masmur, J Kaban	RSC Advances	Self-healing composite hydrogel with antibacterial and reversible restorability conductive properties	10 (9), 5050-5057, 2020
60	M Ginting , I Masmur, SP Pasaribu	RSC Advances	A simple one-pot fabrication of silver loaded semi-interpenetrating polymer network (IPN) hydrogels with self-healing and bactericidal abilities	9 (67), 39515-39522, 2019
61	I Surya, M Ginting , V Purwandari	IOP Conferenc e Series: Materials Science and Engineerin g	Mechanical properties improvement in silica-filled natural rubber composites using stearyl alcohol	509 (1), 012054, 2019
62	Maria Manik, Jamaran Kaban, Jansen Silalahi and Mimpin Ginting	Journal of Physics: Conferenc e Series,	Proximate and Amino Acid Composition of Dengke Naniura Prepared from Carp (Cyprinus carpio) of Lake Toba Indonesia	1232, International Conference on Education, Science and Technology (ICON-EST 2018) 17–18 October 2018, Banda Aceh, Aceh, Indonesia, 2019
63	I Surya, Marpongahtun and M Ginting	IOP Conferenc e Series: Materials Science and Engineerin g,	Improvements in the degree of filler dispersion and tensile properties of N550 and N220 carbon blacks-filled natural rubber composites using alkanolamide	505, 1st International Conference on Industrial and Manufacturing Engineering 16 October 2018, Medan City North Sumatera, Indonesia, 2019
64	Pasaribu, S.P., Kaban, J., Ginting , M., Silalahi, J.	Open Access Macedonia n Journal of Medical Sciences	Preparation of in situ cross-linked N-maleoyl chitosan-oxidized sodium alginate hydrogels for drug delivery applications	7(21), 2019
65	Tarigan , J.B., Ginting , M., Mubarokah, S.N., (...), Ginting, J., Sitepu , E.K.	RSC Advances	Direct biodiesel production from wet spent coffee grounds	9(60):35109-35116, 2019 DOI: 10.1039/C9RA08038D
66	C F Zuhra, S Gea , M Ginting , Marpongahtun and S Lenny	Journal of Physics: Conferenc e Series,	Acetylation of breadfruit utarch by Using Acetic Anhydride	1116, 4, 2018
67	J Br Tarigan , M. Ginting and F M Nainggolan	Journal of Physics: Conferenc	Synthesis and properties of new hydrogel from cross-linked	1116, 4, 2018

		e Series	galactomannan boric	
68	I Surya, M Ginting, H Ismail	Materials Science and Engineering	The effects of the addition of alkanolamide on carbon blacks filled natural rubber compounds	IOP Conference Series: 223 (1), 012006, 2017
69	JB Tarigan, DA Barus, A Dalimunthe, S Perangin- angin, TT Nguyen	Journal of Advanced Pharmaceutical Technology & Research	Physicochemical properties of Arenga pinnata Merr. endosperm and its antidiabetic activity for nutraceutical application	11 (1), 1 – 5, 2020
70	J Tarigan, Juliati Br., Nainggolan, Irwana, Kaban	Asian Journal of Pharmaceutical and Clinical Research	The physiochemical and antibacterial properties of galactomannan edible film of arenga pinnata incorporated with zingiber officinale essential oil	11 (12), 138-142, 2018
71	JB Tarigan, D Purba, CF Zuhra	Asian Journal of Pharmaceutical and Clinical Research	Incorporation of Vitamin E onto Cross-linked Galactomannan Phosphate Matrix and In Vitro Study	11 (5), 355-358, 2018
72	J Kaban, J Reveny, J Tarigan, NF Zebua	Rasayan Journal of Chemistry	Sulfation Of Palm Seed (Arenga Pinnata Merr.) Galactomannan: Antimicrobial Activity and Toxicity Test	11 (1), 294-299, 2018
73	JB Tarigan, HT Prakoso, D Siahaan, J Kaban	International Journal of Applied Chemistry	Rapid Biodiesel Production From Palm Kernel Through In Situ Transesterification Reaction Using CaO as Catalyst	13 (3), 631-646, 2017
74	JB Tarigan, J Kaban, R Zulmi ...	IOP Conference Series: Materials Science and Engineering, Volume 309, TALENTA - Conference on Engineering, Science and Technology Utara, Indonesia	Microencapsulation of Vitamin E from Palm Fatty Acid Distillate with Galactomannan and Gum Acacia using Spray Drying Method	309, 2017, 7–8 September 2017
75	S Perangin-	AIP	Synthesis of Ni supported	1803 (1), 020050, 2017

	angin, Bangun, Ginting, Putri	N A NK	Conferenc e Proceeding s	by CaO from Ni (0) L complexes (L= dihydrazine, bisethylenediamine)	
76	B Wirjosentono, L Marpaung		Case Studies in Thermal Engineerin g	Microencapsulation of ginger-based essential oil (Zingiber cassumunar roxb) with chitosan and oil palm trunk waste fiber prepared by spray-drying method	18, 100606, 2020
77	AH Iswanto, AR Hakim, I Azhar, B Wirjosentono, DS Prabuningrum		Journal of the Korean Wood Science and Technolog y	The Physical, Mechanical, and Sound Absorption Properties of Sandwich Particleboard (SPb)	48 (1), 32-40, 2020
78	RM Sari, S Gea, B Wirjosentono, S Hendrana, YA Hutapea		Polish Journal of Environme ntal Studies	Improving quality and yield production of coconut shell charcoal through a modified pyrolysis reactor with tar scrubber to reduce smoke pollution	29 (2), 2020
79	JL Sihombing, AN Pulungan, H Herlinawati, M Yusuf, S Gea, H Agusnar, B. Wirjosentono...		Catalysts	Characteristic and Catalytic Performance of Co and Co-Mo Metal Impregnated in Sarulla Natural Zeolite Catalyst for Hydrocracking of MEFA Rubber Seed Oil into Biogasoline Fraction	10 (1), 121. 2020
80	IP Mahendra, B Wirjosentono, I Tamrin, JA Méndez González		Rasayan Journal of Chemistry	Oil palm-based nanocrystalline cellulose in the emulsion system of cyclic natural rubber	12, 2, p. 635-640, 2019
81	IP Mahendra, B Wirjosentono, H Ismail, JA Mendez		Open Chemistry	Thermal and Morphology Properties of Cellulose Nanofiber from TEMPO- oxidized Lower part of Empty Fruit Bunches (LEFB)	17 (1), 526-536, 2019
82	J Julinawati, S Gea, E Eddiyanto, B Wirjosentono, I Ichwana		IOP Conferenc e Series: Materials Science and Engineerin g	The use of bentonite of Bener Meriah Aceh to improve the mechanical properties of Polypropylene- Montmorillonite Nanocomposite	523 (1), 012023, 2019
83	H Agusnar, B Wirjosentono, T Rihayat		IOP Conferenc e Series:	Development of Poly Lactic Acid/Kitosan Elastomer with Essential	536 (1), 012087, 2019

		Materials Science and Engineering	Oil Addition to Improved Performance Antibacterial Materials	
84	B Wirjosentono, T Rihayat	IOP Conference Series: Materials Science and Engineering	Mechanical Properties, Morphology and Thermal Degradation of PCL (Poly ϵ -Caprolactone) Biodegradable Polymer Blended Nanocomposites with Aceh Bentonite as Filler	536 (1), 012040, 2019
85	B Wirjosentono, L Marpaung	Journal of Physics: Conference Series	Phytochemical Screening and Chemical Analysis of Ethanol Extract of Kari Leaves (<i>Murayya koeginii</i>) Using GC-MS Method	1232 (1), 012012, 2019
86	SW Saragih, B Wirjosentono, Y Meliana	Journal of Physics: Conference Series	Extraction and Characterization of Cellulose from Abaca Pseudo Stem (<i>Musa textile</i>)	1232 (1), 012018, 2019
87	R Lubis, B Wirjosentono, A Septevani	Journal of Physics: Conference Series	Extraction and characterization of cellulose fiber of durian rinds from north sumatera as the raw material for textile fiber	1232 (1), 012017, 2019
88	B Wirjosentono, AH Siregar, DA Nasution	IOP Conference Series: Materials Science and Engineering	Compatibility and Thermal Properties of Maleic Anhydride-grafted-Polystyrene Containing Microcrystal cellulose (Avicel) as Raw Material for Soil Binder	578 (1), 012070, 2019
89	B Aritonang, B Wirjosentono	Oriental Journal of Chemistry	Grafting of Oleic Acid on Cyclic Natural Rubber (Resiprene-35) using Dicumyl Peroxide Initiator and Divinylbenzene Compatibilizers for Paint Binder in Polyamide Thermoplastics	35 (1), 173-179, 2019
90	IP Mahendra, A Huda, HM Ngoc, PT Nghia, T Tamrin, B Wirjosentono	Arab Journal of Basic and Applied Sciences	Investigation of TiO ₂ doped with nitrogen and vanadium using hydrothermal/Sol-Gel method and its application for dyes photodegradation	26 (1), 242-253, 2019
91	IP Mahendra, B Wirjosentono, H Ismail, JA Mendez, V Causin	Journal of Polymer Research	The influence of maleic anhydride-grafted polymers as compatibilizer on the properties of	26 (9), 215, 2019

			polypropylene and cyclic natural rubber blends	
92	T Rihayat, S Suryani, T Fauzi, H Agusnar, B Wirjosentono, PN Alam, ...	IOP Conferenc e Series: Materials Science and Engineerin g	Mechanical properties evaluation of single and hybrid composites polyester reinforced bamboo, PALF and coir fiber	334 (1), 012081,2018
93	F Gultom, B Wirjosentono, H Nainggolan	Procedia Chemistry	Preparation and characterization of North Sumatera natural zeolite polyurethane nanocomposite foams for light-weight engineering materials	19, 1007-1013, 2016
94	G Gultom, B Wirjosentono, K Sebayang, M Ginting	Procedia Chemistry	Preparation and Characterization of Microwave-absorption of Sarulla North Sumatra Zeolite and Ferric Oxide- filled Polyurethane Nanocomposites	19, 441-446, 2016
95	M Taufik, H Marpaung, J Kaban, B Wirjosentono	Journal of Biomedical and Life Sciences American	Analysis of User's Hair Cannabinoid of Narcotic Type of Marijuana (Cannabis Sativa L.) Using GCMS Technic	4 (1), 1, 2016
96	S Gea, S Tjandra, J Joshua, B Wirjosentono	IOP Conferenc e Series: Materials Science and Engineerin g	Morphological study of fluorescent carbon Nanoparticles (F-CNPs) from ground coffee waste soot oxidation by diluted acid	309 (1), 012037, 2018
97	H Agusnar, B Wirjosentono, T Rihayat	IOP Conferenc e Series: Materials Science and Engineerin g	Improving the quality of biopolymer (poly lactic acid) with the addition of bentonite as filler	222 (1), 012008, 2017
98	G Gultom, B Wirjosentono, M Ginting, K Sebayang	IOP Conferenc e Series: Materials Science and Engineerin g	Effects of natural zeolite and ferric oxide to electromagnetic and reflection loss properties of polyurethane nanocomposite	223 (1), 012031, 2017
99	B Wirjosentono	Oriental Journal of Chemistry	Synthesized Superabsorbent Based on Cellulose from Rice Straw	33 (4), 1905-1913, 2017

			for Controlled-Release of Urea	
100	V Purwandari, S Gea, B Wirjosentono, A Haryono	AIP Conferenc e Proceeding s	Synthesis of graphene oxide from the Sawahlunto-Sijunjung coal via modified hummers method	2049 (1), 020065, 2018
101	JL Sihombing, S Gea, AN Pulungan, H Agusnar, B Wirjosentono, ...	AIP Conferenc e Proceeding s	The characterization of Sarulla natural zeolite crystal and its morphological structure	2049 (1), 020062, 2018
102	SW Saragih, R Lubis, B Wirjosentono, Eddyanto	AIP Conferenc e Proceeding s	Characteristic of abaca (Musa textilis) fiber from Aceh Timur as bioplastic	2049 (1), 020058, 2018
103	REK Siregar, B Syam, B Wirjosentono, M Muttaqin	Journal of Physics: Conferenc e Series	Static simulation to horse shoes alternative materials based basic polymeric foam reinforced fiberglass with ANSYS software	1116 (4), 042036, 2018
104	B Wirjosentono, AH Siregar, TI Nasution, KZ Dalimunthe, DA Nasution	Journal of Physics: Conferenc e Series	Compatibilization of cyclic natural rubber (resiprene-35) with polypropylene in the presence of oleic acid and benzoyl peroxide	1116 (4), 042043, 2018
105	B Wirjosentono, IP Mahendra, DA Nasution, H Ismail, JA Mendez	Journal of Physics: Conferenc e Series	Compatibility and Wettability of Polypropylene-Cyclic Natural Rubber-NanocrystalCeluloseNano composites Containing Methacrylic Acid and Methylacrylateas Coagents	1120 (1), 012087, 2018
106	B Aritonang, T Tamrin, B Wirjosentono, E Eddiyanto	AIP Conferenc e Proceeding s	Functionalization of cyclic natural rubber (CNR) with oleic acid and divinylbenzene as compatibilizer in variation of dicumylperoxide	2049 (1), 020060, 2018
107	R Lubis, SW Saragih, B Wirjosentono, E Eddyanto	AIP Conferenc e Proceeding s	Characterization of durian rinds fiber (Durio zubinthinus, murr) from North Sumatera	2049 (1), 020069, 2018
108	J Jelita, B Wirjosentono, T Tamrin, L Marpaung	AIP Conferenc e Proceeding	Characterization of gelatin from scapula (Os scapula) from Aceh cattle	2049 (1), 020072, 2018

		s		
109	M Pandiangan, J Kaban, B Wirjosentono , J Silalahi	AIP Conference Proceedings	Identification of omega 3 and 6 positions on sn-2 triacylglycerol of hydrolysis mas fish oil by lipase from <i>Mucor miehei</i>	2049 (1), 030016, 2018
110	Suryani, H Agusnar, B Wirjosentono , T Rihayat, Nurhanifa	AIP Conference Proceedings	Thermal degradation of Aceh's bentonite reinforced poly lactic acid (PLA) based on renewable resources for packaging application	2049 (1), 020040, 2018
111	JL Sihombing, S Gea , A Kembaren, AN Pulungan, AA Wibowo, B. Wirjosentono...	Journal of Physics: Conference Series	Activity assays of calcinated sarulla natural zeolite (snz-cal) in catalytic hydrocracking rubber seed oil	1116 (4), 042035, 2018
112	B Wirjosentono , T Rihayat	Journal of Physics: Conference Series	Processing and characterization of bentonite North Aceh as filler blend with chitosan to increase specific properties of PCL (poly ϵ -caprolactone)	1116 (4), 042030, 2018
113	B Syam, B Wirjosentono , DS Dharma	Journal of Physics: Conference Series	Manufacture of polymeric foam and polyurethane composites with fiberglass boosters	1116 (4), 042021, 2018
114	H Agusnar, B Wirjosentono , S Salim, T Rihayat, T Fauzi	Journal of Physics: Conference Series	Synthesis and Characterization of Chitosan with Addition of Patchouli Oil to Improve Mechanical Properties Biofilm	1116 (4), 042001, 2018
115	S Salim, H Agusnar, B Wirjosentono , H Marpaung, T Rihayat	IOP Conference Series: Materials Science and Engineering	Synthesis and innovation of PLA/clay nanocomposite characterization againts to mechanical and thermal properties	334 (1), 012047, 2018
116	B Syam, B Wirjosentono	IOP Conference Series: Materials Science and Engineering	Design and fabrication hazard stakes golf course polymeric foam material empty bunch (EFB) fiber reinforced	308 (1), 012050, 2018
117	AIA Simbolon, M Pujiastuti, IK Jaya, K	SinkrOn	Machine Learning for Handoffs Classification Based on Effective	3 (2), 265-267, 2019

	Tarigan, M Sinambela		Communication History	
11 8	E Darnila, M Ula, K Tarigan, T Limbong, M Sinambela	IOP Conferenc e Series: Materials Science and Engineerin g	Waveform analysis of broadband seismic station using machine learning Python based on Morlet wavelet	420 (1), 012048, 2018
11 9	K Tarigan, M Sinambela, AT Simanullang, H Sunandar, SB Sinaga	Journal of Physics: Conferenc e Series	Characteristics Influence of The Seismic Signal Noise Using Spectral Analysis	1116 (3), 032041, 2018
12 0	K Tarigan, M Sinambela, M Panjaitan, P Simangunsong, HK Siburian	Journal of Physics: Conferenc e Series	Machine Learning for Waveform Spectral Analysis on Nuclear Explosion Signal and Performance of Broadband Vertical Component	1120 (1), 012083, 2018
12 1	K Tarigan, B Perangin-angin, K Brahmana, A Manalu, M Sinambela	Journal of Physics: Conferenc e Series	Simple Designed of High Voltage Pulsed Electric Field Generator Based on Fly-back Transformer	1230 (1), 012027, 2019
12 2	K Tarigan, S Humaidi, K Brahmana	AIP Conferenc e Proceeding s	Effect of capacitance of graphene coated electrodes on supercapacitor by charging and discharging method	2221 (1), 110031, 2020
12 3	MA Fahril, K Tarigan, S Humaidi, S Sitepu, M Sinambela	AIP Conferenc e Proceeding s	Integrated high voltage generator with ATmega 328 microcontroller using flyback transformer	2221 (1), 100004, 2020
12 4	M Sinambela, K Tarigan, S Humaidi, M Situmorang	AIP Conferenc e Proceeding s	Wavelet based machine learning approach for spectral seismic signal analysis: A case study North Tapanuli earthquake	2221 (1), 060001, 2020
12 5	TI Nasution, HW Ningsih, K Tarigan, IH Pulungan	Journal of Physics: Conferenc e Series	Automatic and Realtime Control of pH Level in Water Catfish Cultivation	1428 (1), 012055, 2020
12 6	IH Pulungan, TI Nasution, HW Ningsih, K Tarigan	Journal of Physics Conferenc e Series	An Automatic and Realtime Control of Ammonia Concentration in Catfish Pond Water Based on MQ137 Sensor	1428 (1), 012054, 2020

127	K Tarigan, B Perangin-Angin, T Tamba, A Manalu, FJ Purba, ...	IOP Conferenc e Series: Materials Science and Engineerin g	High voltage designed and pulsed electric field circuit using standard sphere-gap method	725 (1), 012059, 2020
128	D Anwar, K Sembiring, K Tarigan, M Sinambela, AR Abubar, D Hasibuan	IOP Conferenc e Series: Materials Science and Engineerin g	Machine learning approach for turbulence forecasting using support vector machine	725 (1), 012087, 2020
129	K Tarigan, T Sembiring, B Wirjosento, M Sinambela	Journal of Physics: Conferenc e Series	Influence of Impulse- Electric Field on Dielectric Properties of Nerve Membranes	1428 (1), 012012, 2020
130	B Perangin- angin, K Tarigan, T Tamba	Journal of Physics: Conferenc e Series	Fluorescence Spectra Measurement of Essential Oils	1230 (1), 012035, 2019
131	B Perangin- angin, K Tarigan, P Sihombing	Journal of Physics: Conferenc e Series	Time Resolved Spectroscopy Using Boxcar Integrator	1230 (1), 012034, 2019
132	MSNMN A. Hakim S, T. Sembiring, K. Tarigan, K. Sebayang	RAYASAN J. Chem.	Characterization of Membrane PVA_Enzyme Coated PVC-KTpCIPB as Urea Sensor with Potentiometric Method	http://rasayanjournal.co. in/current-issue.php 12 (RJC), 780-786, 2019
133	Abd Hakim S ., Krista Tarigan , Manihar Situmorang	Journal of Physics	Synthesis of Urea Sensors using Potentiometric Methods with Modification of Electrode Membranes Indicators of ISE from PVA- Enzymes Coating PVC- KTpCIPB TS	1120 (2018), 1-14
134	Abd Hakim. S., Krista Tarigan , Krista Sebayang , Timbangan Sembiring 9	Internation al Journal of Scientific & Engineerin g Research	The characteristics membrane pva-enzyme and coating pvcplasticizer with sem-edx ms	(2018), 1229-1236
135	Firman Sebayang ,Rum ondang Bulan	PROSIDIN G SEMIRATA 2017 BIDANG	THE EFECTOF ADDITION VOLUME CELLULASE ENZYME FROM PANCREAS GOLDEN SNAIL	2017

		MIPA BKS-PTN WILAYAH BARAT	(Pomacea caniculata) FOR BIODEINKING WASTE OLD NEWS PAPER HS	
136	F Sebayang	Journal of Chemical Natural Resources	The Utilization of Carboxymethyl Cellulose (Cmc) from Groundnut (Arachis Hypogaea L) Cellulose as Stabilizer for Cow Milk Yogurt	1 (2), 38-51, 2019
137	F Sebayang, R Bulan, Hartanto, Huda A A	IOP Conference Series: Earth and Environmental Science	Enhancing the efficiency of ethanol production from molasses using immobilized commercial Saccharomyces cerevisiae in two layer alginate-chitosan beads	305 (1), 012014, 2019
138	Pratama, A., Sebayang, F. , Nasution, R.B.	Indonesian Journal of Chemistry	Antibacterial properties of biofilm schiff base derived from dialdehyde cellulose and chitosan	19, 2, 2019
139	T Harsono, N Pasaribu , Fitmawati, Sobir SABRAO	Journal of Breeding & Genetics	Diversity of Gandaria (Bouea) based on morphological characters in Indonesia.	48 (4), 2016
140	N Pasaribu , ES Siregar, W Rahmi	IOP Conference Series: Earth and Environmental Science	Species of leafy liverworts in protected forest of simancik 1, regency of deli serdang, north sumatera	130 (1), 012051, 2018
141	ES Siregar, S Hannum, N Pasaribu	Taiwania	Lejeuneaceae (Marchantiophyta) of Sicike-cike Natural Park, North Sumatra Indonesia	62 (4), 356, 2017
142	T Bušina, N Pasaribu , Kouba M	Kukila	Ongoing illicit trade of Sumatran Laughingthrush Garrulax bicolor: one-year market monitoring in Medan, North Sumatra	21, 27-34, 2018
143	T Harsono, N Pasaribu , Prasetya E	Jurnal Biodiversitas	Phylogenetic analysis of Indonesian gandaria (Bouea) using molecular markers of cpDNA trnL-F intergenic spacer	18 (01), 51-57, 2017
144	ES Siregar, N Pasaribu	Journal of Physics: Conference Series	Species of Liverworts Family Plagiochilaceae of Mount Lubuk Raya North Sumatera Indonesia	1116 (5), 052062, 2018
145	TA Aththorick, N Pasaribu , Eyckman E	Journal of Physics: Conference Series	Stand structure and carbon stock of tree vegetation in Deleng Macik Taman Hutan Raya Bukit Barisan Karo District, North Sumatra,	1116 (5), 052009, 2018

			Indonesia	
14 6	T Harsono, N Pasaribu, E Prasetya	Sabrao Journal of Breeding and Genetics	Genetic variability and classification of gandaria (Bouea) in Indonesia based on inter simple sequence repeat (ISSR) markers	50 (02), 129-144, 2018
14 7	T Bušina, N Pasaribu, T Hlavsa, V Czerneková, M Kouba	Ornithologi cal Science	An experimental release of rehabilitated wild-caught Sumatran Laughingthrush Garrulax bicolor: assessment of post-release survival and dispersal via radio-telemetry, North ...	17 (2), 135-147, 2018
14 8	MK Huda, N Pasaribu, ES Syamsuardi, ES Siregar	Jornal of Physics: Conferenc e Series	Vegetation Structure and Composition in Taman Wisata Alam (TWA) Sicike-cike as Ritual Site for Local Community	1462, 012050, 2020
14 9	ES Siregar, N Pasaribu	IOP Conferenc e Series: Earth and Environme ntal Science	The liverworts family Plagiochilaceae of Taman Eden 100 Natural Park, North Sumatra Indonesia	374 (1), 012020, 2019
15 0	ES Siregar, N Pasaribu	IOP Conferenc e Series: Earth and Environme ntal Science	Lepidoziaceae (Marchantiophyta) in Taman Eden 100 Natural Park, North Sumatra Indonesia	305 (1), 012013, 2019
15 1	HMZN Amrul, N Pasaribu, RH Harahap, TA Aththorick	IOP Conferenc e Series: Earth and Environme ntal Science	Ethnobotanical Study of Fodder Plant Species used by the Batak Parmalim Communities in Toba Samosir, Indonesia	305 (1), 012089, 2019
15 2	H Akram, N Pasaribu, ES Siregar	IOP Conferenc e Series: Earth and Environme ntal Science	Tree Species Diversity, Richness and Similarity in Disturbed and Undisturbed Forest of Ketambe Research Station, Southeast Aceh regency	305 (1), 012094, 2019
15 3	F Susilo, N Pasaribu, ES Siregar	IOP Conferenc e Series: Earth and Environme ntal Science	The Liverwort, Genus Bazzania of Mount Sibuatan, North Sumatera, Indonesia	305 (1), 012088, 2019
15	N Pasaribu, TA	Journal of	Study of Ficus in West	1116 (5), 052049, 2018

4	Aththorick, Siswiyati	E	Physics: Conference Series	Block Batang Toru Forest Region, North Tapanuli District, Indonesia	
155	ES Siregar, N Pasaribu, IG Nababan	N IG	Journal of Physics: Conference Series	The liverworts family Lepidoziaceae in Aek Nauli Parapat natural forests, North Sumatra, Indonesia	1116 (5), 052063, 2018
156	M Sirait, S Gea, N Bukit, N Siregar, Sitorus	S N N C	Oriental Journal of Chemistry	Synthesis of Nanobentonite as Heavy Metal Adsorbent with Various Solvents	34 (4), 1854-1857, 2018
157	S Gea, N Azizah, Piliang, Siregar	N AF H	Journal of Physics: Conference Series	The Study of Liquid Smoke as Substitutions in Coagulating Latex to The Quality of Crumb Rubber	1120 (1), 012051, 2018
158	S Gea, M Firnsyah, Hidayat, Hutapea	M T YA	Journal of Physics: Conference Series	The preparation and characterization of bentonite nanoparticle from Bener Meriah, Indonesia	1116 (4), 042011, 2108
159	DY Nasution, S Gea	S	Journal of Physics: Conference Series	Characterization of composite boards made of oil palm trunk flour/maleic anhydride grafted polypropylene	1116 (4), 042045, 2018
160	S Gea, D Andita, S Rahayu, DY Nasution, SU Rahayu, AF Piliang	D S DY SU AF	Journal of Physics: Conference Series	Preliminary study on the fabrication of cellulose nanocomposite film from oil palm empty fruit bunches partially solved into licl/dmac with the variation of dissolution time	1116 (4), 042012, 2018
161	JL Sihombing, S Gea, A Kembaren, AN Pulungan, AA Wibowo, ...	S A AN AA	Journal of Physics: Conference Series	Activity assays of calcinated sarulla natural zeolite (snz-cal) in catalytic hydrocracking rubber seed oil	1116 (4), 042035, 2018
162	S Gea, D Nasution	D	Journal of Physics: Conference Series	Fabrication and characterization of natural rubber composite (sir 5)/organo-montmorillonite using cetil trimetil ammonium bromide as a surface modifier	1116 (4), 042040, 2018
163	S Gea, KM Pasaribu, K Sebayang, E Julianti, SA Amaturahim, SU Rahayu, ...	KM K E SA SU	AIP Conference Proceedings	Enhancing the quality of nata de coco starter by channeling the oxygen into the bioreactor through agitation method	2049 (1), 020064, 2018
164	S Gea, M Surga, S Rahayu,	M S	AIP Conference	The analysis of thermal and mechanical properties of	2049 (1), 020063, 2018

	Marpongahtun, YA Hutapea, AF Piliang	Proceedings	biocomposite polycaprolactone/cellulose nanofiber from oil palm empty fruit bunches	
165	M Sirait, KSD Saragih, S Gea	Latvian Journal of Physics and Technical Sciences	The Fabrication of Natural Zeolite Via Co-Precipitation Method as Cu, Pb and Zn Metal Absorbent	57 (3), 40-47, 2020
166	SA Amaturrahim, S Gea , DY Nasution, YA Hutapea	Asian Journal of Chemistry	Preparation of Graphene Oxide/Bacterial Cellulose Nanocomposite via in situ Process in Agitated Culture	30 (7), 1564-1568, 2018
167	M Sirait, S Gea , N Bukit, EM Ginting, RF Zega	Asian Journal of Chemistry	Fabrication of poly (vinyl alcohol)/bentonite nanocomposites using sol-gel method	30 (10), 2210-2214, 2018
168	S Gea , Y Muis, T Novita, AF Piliang	Journal of Physics: Conference Series	Synthesis of Carbon Nanodots from Cellulose Nanocrystals Oil Palm Empty Fruit by Pyrolysis Method	1120 (1), 012071, 2018
169	S Gea , RM Sari, AF Piliang, DP Indrawan, YA Hutapea	AIP Conference Proceedings	Study of bacterial cellulose as scaffold on cartilage tissue engineering	2049 (1), 020061, 2018
170	S Gea , N Panindia, AF Piliang, A Sembiring, YA Hutapea	Journal of Physics: Conference Series	All-cellulose composite isolated from oil palm empty fruit bunch	1116 (4), 042013, 2018
171	S Gea , JN Sari, R Bulan, A Piliang, SA Amaturrahim, YA Hutapea	Journal of Physics: Conference Series	Chitosan/graphene oxide biocomposite film from pencil rod	970 (1), 012006, 2018
172	MZE Sinaga, S Gea , N Panindia, YA Sihombing	Oriental Journal of Chemistry	The Preparation of All-Cellulose Nanocomposite Film from Isolated Cellulose of Corncobs as Food Packaging	34 (1), 562, 2018
173	S Gea , Z Zulfahmi, D Yunus, A Andriayani, YA Hutapea	Journal of Physics: Conference Series	The isolation of nanofibre cellulose from oil palm empty fruit bunch via steam explosion and hydrolysis with HCl 10%	979 (1), 012063, 2018

A6 Daftar paten yang terdaftar atau HKI lainnya

No.	Nama Paten/HKI	No. Paten	Tanggal Terbit Paten
1	Buku: Polimer Ilmu Material	EC00201825506	2018
2	Buku: Grafena Sintesis, Analisis Dan Aplikasi	EC00201939080	2019
3	Hak Cipta: PROSES PEMBUATAN GRAFIT DARI KELAPA	S00201802651	2018
4	Hak Cipta: Pembuatan N-Grafena pada Suhu Ruang	S00201907443	2019
5	Buku Penuntun Pratikum Kimia Analitik (Analisa Kualitatif)	EC00201948448	2019
6	Sintesis Nitrogen Doped Grafena	EC00201940726	2019
7	PROSES PEMBUATAN GRAFIT DARI KELAPA	S00201802651	2018
8	PROSES PEMBUATAN GRAFENA BERLAPIS NANO DARI KELAPA	S00201802686	2018
9	Proses Pembuatan Bahan Bakar Air	EC00201941660	2019
10	Pembuatan Antena Dari Batok Kelapa	EC00201941656	2019
11	Pembuatan Bahan Bakar Etanol E85	EC00201976912	2019
12	Pembuatan Bahan Bakar Premium dari Minyak Jelantah dalam Suasana Basah	EC00201976913	2019
13	SELULOSA Karakteristik Dan Pemanfaatannya Sebagai Biomaterial	EC00201947296	2019

A7 Daftar lulusan S-3 berbasis riset di PUI-PT setelah 3 tahun

No.	Nama Mahasiswa	Program Studi/Perguruan Tinggi	Tahun Masuk	Tahun Lulus
1	Sri Pratiwi Aritonang	Kimia	2019	2022

A8. Program Magang Bersertifikat (Bersama Mitra Industri) untuk Mahasiswa

No.	Nama Mahasiswa	Program Studi/Perguruan Tinggi	Mitra	Dosen Pembimbing	Tahun Masuk
1	Fajar Hutagalung	Kimia	Nano Karbon	Rikson Siburian	2019

A9 Pengelolaan seminar/simposium berskala internasional

No.	Nama <i>Event</i> Internasional	Tanggal (dd/mm/yy)	Tempat
1	ASAFAS-Kyoto University	19-24 Januari 2017	Kyoto University, Kyoto, Japan.

2	SEMIRATA-BKS PTN Wilayah Barat Bidang MIPA	4-6 Mei 2018	Medan International Convention Center (MICC) Jl. Gagak Hitam No.1 Medan
3	SACSEM-Tsukuba	8-9 November 2018	Tsukuba University

A10 Pengelolaan jurnal nasional terakreditasi

No.	Nama Jurnal Nasional Terakreditasi	No. Volume pada Tahun 2015	ISSN	Frekuensi Terbit Per Tahun
-	-	-	-	-

Form Isian Penilaian Kinerja PUI-PTOS–Commercialization and Implementation

B1 Daftar kontrak riset pada tingkat nasional

No.	Nama Kontrak Riset	Tanggal Mulai Kontrak	Tanggal Habis Kontrak
-	-	-	-

B2 Daftar kontrak riset pada tingkat internasional

No.	Nama Kontrak Riset	Tanggal Mulai Kontrak	Tanggal Habis Kontrak
-	-	-	-

B3 Daftar kontrak nonriset (pelatihan, transfer teknologi, dan jasa konsultasi)

No.	Nama Kontrak Nonriset	Tanggal Mulai Kontrak	Tanggal Habis Kontrak
-	-	-	-

B4 Daftar produk berbasis sumber daya local

No.	Nama Produk
1	Grafrit dari Kelapa
2	Grafena dari Kelapa
3	N-Grafena dari Kelapa
4	Elektroda baterai primer dari paduan grafitik karbon (non logam) dari kelapa
5	Elektroda baterai primer dari paduan grafitik karbon dari kelapa/logam transisi
6	Biokatalis dari Zeolit, Bentonit dan Tanah liat.

B5 Daftar produk yang dilisensikan dan atau dimanfaatkan

No.	Nama Produk Berlisensi
-	-

B6 Daftar kontrak bisnis dalam rangka komersialisasi produk dengan industri

No.	Nama Kontrak Riset	Tanggal Mulai Kontrak	Tanggal Habis Kontrak
-	-	-	-

B7 Daftar unit bisnis yang melayani jasa sesuai kompetensi

No.	Nama Unit Bisnis
1	Rumah Karbon

B8 Daftar UMKM, Startup (Rintisan Usaha) atau komunitas yang dibina sesuai kompetensi

No.	Nama	Alamat
1	MIRACLE HOUSE	Jl. Bioteknologi 1 Kampus FMIPA, USU, P. Bulan, Medan, Indonesia 20155